**Document number 434**

**Text number 0**

Montana i/mɒnˈtænə/ is a state in the western United States. The state's name is derived from the Spanish word montaña (mountain). Montana has several nicknames, though none official, such as "Big Sky Country" and "The Treasure State", as well as slogans including "Land of the Shining Mountains" and more recently "The Last Best Place". Montana is 4th in size but 44th in population and 48th in population density out of 50 US states. The western third of Montana has numerous mountain ranges. Smaller island mountain ranges are found throughout the state. The Rocky Mountains include a total of 77 designated mountain ranges.

**Question 0**

What is the order of magnitude of the states?

**Question 1**

What is its popularity?

**Question 2**

How many mountain ranges are part of the Rocky Mountains?

**Question 3**

Where does the name of the state come from?

**Text number 1**

Montana schoolchildren played a major role in the selection of several state symbols. Montana schoolchildren overwhelmingly chose the state tree, the ponderosa pine, in a 1908 referendum. However, the legislature did not designate the state tree until 1949, when the Montana Federation of Garden Clubs, with the support of the state forester, advocated for its official recognition. In a 1930 vote, schoolchildren also selected the western meadowlark as the state bird, and the Legislature upheld that decision in 1931. Similarly, in 1981, the Secretary of State sponsored a children's vote to select the state animal, and with 74 animals nominated, the grizzly bear beat the moose by a 2-1 vote. Livingston students launched a statewide school petition and lobbied the governor and state legislators to have Maiasaura designated as a state fossil in 1985.

**Question 0**

In which year was the state tree chosen?

**Question 1**

When was the state tree actually allocated?

**Question 2**

In what year was the state animal elected?

**Question 3**

What is the animal of the state of Montana?

**Question 4**

What is a state fossil

**Text number 2**

The state song was not composed until 21 years after the state's founding, when a musical group led by Joseph E. Howard stopped in Butte in September 1910. At a post-show celebration, a former member of the group living in Butte asked Howard to compose a song about Montana and got another reveler, Charles C. Cohan, editor of the Butte Miner newspaper, to help. The men worked on the basic melody and lyrics in half an hour to entertain the party guests, and finished the song later that evening, with the arrangement completed the next day. On arrival in Helena, Howard's troupe performed 12 encores of the new song to an enthusiastic audience, and the Governor immediately proclaimed it a state song, although it was not officially recognised by the legislature until 1945. Montana is one of only three states with a "state ballad", "Montana Melody", chosen by the legislature in 1983. Montana was the first state to also adopt a state lullaby.

**Question 0**

When was the national song composed?

**Text number 3**

Montana's motto, Oro y Plata, which means "gold and silver" in Spanish and recognises the important role of mining, was adopted in 1865, when Montana was still a territory. The state seal, which features a miner's pick and shovel above the motto, surrounded by mountains and the Missouri River Falls, was adopted by the first session of the territory's legislature in 1864-65. The plan was modified only slightly after Montana became a state and was adopted as the Great Seal of the State of Montana, which was confirmed by the legislature in 1893. The state flower, bitterroot, was adopted in 1895 with the support of a group called the Flower Seal Association, which was formed after the Women's Christian Temperance Union of Montana adopted bitterroot as its organization's state flower. All other symbols were adopted during the 20th century, except Montana's newest symbol, the state butterfly, the mourning cloak, adopted in 2001, and the state lullaby, "Montana Lullaby", adopted in 2007.

**Question 0**

What is Montana's motto?

**Question 1**

What does the Montana motto mean?

**Question 2**

When was the slogan adopted?

**Question 3**

When was the state flower introduced?

**Question 4**

What is the Montana state flower?

**Text number 4**

The state also has five metropolitan statistical areas, centred on Bozeman, Butte, Helena, Kalispell and Havre. These communities, with the exception of Havre, are colloquially known as Montana's "seven big cities" because they are consistently the seven largest communities in Montana and have a significant population difference when compared to the communities ranked eighth and below on the list. According to the 2010 US Census, the seven most populous cities in Montana are, in order, Billings, Missoula, Great Falls, Bozeman, Butte, Helena and Kalispell. Based on 2013 Census figures, they together account for 35% of Montana's population, and the counties that contain these communities account for 62% of the state's population. The geographic center of Montana's population is located in sparsely populated Meagher County, in the town of White Sulphur Springs.

**Question 0**

What proportion of the population of countries belongs to the "Big 7"?

**Text number 5**

Montana has 56 counties, and according to the US Census Bureau, there are 364 "places" in Montana, divided into 129 combined places and 235 census-designated places. Incorporated places include 52 cities, 75 towns, and two incorporated townships. Montana has one city with a population of over 100,000, Billings, and two cities with a population of over 50,000, Missoula and Great Falls. These three communities are considered the centers of Montana's three metropolitan areas.

**Question 0**

How many counties are there in Montana?

**Question 1**

Which city in Montana has more than 100 000 inhabitants?

**Question 2**

Which two cities have more than 50 000 inhabitants?

**Text number 6**

The name Montana comes from the Spanish word Montaña, which means "mountain" or, more broadly, "mountain country". Early Spanish explorers called the entire western mountain region Montaña del Norte. The name Montana was added to a bill proposed by the US House of Representatives Committee on Territories, chaired at the time by James Ashley of Ohio, for what would become the Territory of Idaho. The name was successfully changed by Representatives Henry Wilson (Massachusetts) and Benjamin F. Harding (Oregon), who complained that Montana had 'no meaning'. When Ashley introduced a bill in 1864 to create a provisional government for the new territory of Idaho, he again chose Montana Territory. This time, Representative Samuel Cox, also from Ohio, opposed the name. Cox complained that the name was a misnomer because most of the territory was not mountainous and that the Indian name would be more appropriate than the Spanish name. Other names, such as Shoshone, were suggested, but it was finally decided that the regional committee could name the territory whatever they wanted, so the original name Montana was adopted.

**Question 0**

What does the name of a country mean?

**Question 1**

What did the Spanish call this area?

**Text number 7**

Montana has a total area of 147 040 square miles (380 800 km2), slightly larger than Japan. It is the fourth largest state in the US after Alaska, Texas and California, the largest landlocked state in the US and the 56th largest state/province in the world. In the north, Montana shares a 545-mile (877 km) border with three Canadian provinces: British Columbia, Alberta and Saskatchewan, as the only state. To the east it borders North Dakota and South Dakota, to the south Wyoming, and to the west and southwest Idaho.

**Question 0**

What is the total area of Montana?

**Question 1**

Which state does Montana border in the south?

**Question 2**

Which state is it confined to in the West?

**Text number 8**

The state's topography is roughly defined by the continental divide, which divides much of the state into separate eastern and western regions. Most of Montana's 100 or more named mountain ranges are concentrated in the western part of the state, most of which are geologically and geographically part of the northern Rocky Mountains. The Absaroka and Beartooth Mountains in the south-central part of the state are technically part of the Central Rocky Mountains. The Rocky Mountain Front is a prominent feature in the northern and central parts of the state, and there are several isolated island mountain ranges in the central and eastern parts of the state that break up the prairie landscape in the central and eastern parts of the state. Approximately 60 percent of the state is prairie, part of the northern Great Plains.

**Question 0**

Where are most of the mountain ranges in the states?

**Question 1**

How much of the state is forest?

**Text number 9**

The northern part of the divide, where the mountains give way rapidly to the prairies, is part of the Rocky Mountain front. The front is strongest in the Lewis Range, which is mainly located in Glacier National Park. Due to the configuration of the mountain ranges in Glacier National Park, the Northern Divide (which starts on the Seward Peninsula in Alaska) crosses this range and turns eastward in Montana at Triple Divide Peak. It causes the Waterton, Belly and Saint Mary rivers to flow north into Alberta, Canada. There they join the Saskatchewan River, which eventually flows into Hudson Bay.

**Question 0**

Which way do the rivers flow near Triple Divide Peak?

**Question 1**

Where does the Saskatchewan River fall?

**Text number 10**

East of the divide in the southern part of the state are several roughly parallel mountain ranges, including the Gravelly Range, Madison Range, Gallatin Range, Absaroka Mountains and Beartooth Mountains. The Beartooth Plateau is the largest continuous land mass in the continental United States, at over 3,000 metres. It includes the highest point in the state, Granite Peak, which is 3,901 metres high. To the north of these mountains are the Big Belt Mountains, Bridger Mountains, Tobacco Roots and several island mountain ranges, including the Crazy Mountains and Little Belt Mountains.

**Question 0**

How high is the Beartooth Plateau?

**Question 1**

What is the highest point in the state?

**Question 2**

How high is Granite Peak?

**Text number 11**

At the state level, however, there is still evidence that ballots are being distributed and that the government is divided. Democrats currently hold one state senate seat and four of the five statewide offices (governor, superintendent of public instruction, state secretary of state and state auditor). A single congressional district has been held by Republicans since 1996, and in 2014 Steve Daines won one state senate seat for the GOP. Legislators held the House and Senate in party-line control in most years from 2004 to 2010, when midterm elections returned both areas to Republican control. As of 2015, the state Senate is controlled by Republicans 29-21 and the state House 59-41.

**Question 0**

How many seats do Democrats hold in the US State Senate?

**Question 1**

How long has a single congressional district been Republican?

**Question 2**

What is the Republican split on state Senate Oversight?

**Question 3**

What is the breakdown of the state House of Representatives?

**Text number 12**

In presidential elections, Montana has long been classified as a swing state, although the state has voted for the Republican candidate in all but two elections since 1952 to the present day. The last time the state supported the Democratic presidential nomination was in 1992, when Bill Clinton won the presidential nomination. Overall, since 1889, the state has voted for Democratic governors 60% of the time and for Democratic presidents 40% of the time, and for Republican candidates the numbers are 40/60. In the 2008 presidential election, Montana was considered a swing state and was eventually won by Republican John McCain, albeit by a narrow margin of 2%.

**Question 0**

What will Montana be considered in the election?

**Question 1**

What was the last year in which Democrats were supported for president?

**Question 2**

How often has Montana voted for a Democratic governor?

**Question 3**

How often has Montana voted for a Democratic president?

**Text number 13**

Bozeman Yellowstone International Airport is the busiest airport in the state of Montana, overtaking Billings Logan International Airport in spring 2013. Other major airports in Montana include Billings Logan International Airport, Missoula International Airport, Great Falls International Airport, Glacier Park International Airport, Helena Regional Airport, Bert Mooney Airport and Yellowstone Airport. Eight smaller communities have airports designated for commercial air service under the Essential Air Service program.

**Question 0**

What is the name of the busiest airport in Montana?

**Question 1**

When did Bozeman Airport overtake Billings Logan Airport as the largest airport in Montana?

**Text number 14**

Railways have been an important mode of transport in Montana since the 1880s. Historically, the state was crossed by the main lines of three east-west intercontinental routes: the Milwaukee Road, the Great Northern and the Northern Pacific. Today, BNSF Railway is the state's largest railroad company, with the former Great Northern main line running through the state as its main route. Montana RailLink, a privately owned Class II railroad, operates the former Northern Pacific tracks in western Montana.

**Question 0**

What is the largest railway in the States?

**Question 1**

How long have railroads been important in Montana?

**Text number 15**

Montana is home to the Rocky Mountain Elk Foundation and has a historic big game hunting tradition. Fall is the archery and general hunting season for elk, pronghorn antelope, white-tailed deer and mule deer. A limited number of permits for elk, mountain goat and mountain goat are issued by random draw. There is a spring hunting season for black bear, and in most years, limited hunting is allowed for bison leaving Yellowstone National Park. Current law allows both hunting and trapping for a certain number of wolves and cougars. Trapping of various furbearing animals is allowed during certain seasons, and there are many opportunities to hunt migratory waterfowl and upland birds.

**Question 0**

What is the name of the Montana Big Game Hunting Foundation?

**Question 1**

What time of year is it allowed to hunt black bears?

**Question 2**

Which two predators can be hunted in certain numbers?

**Text number 16**

Montana has been a world-class trout fishing destination since the 1930s. Fly fishing for several native and stocked trout species in rivers and lakes is popular with residents and tourists throughout the state. Montana is home to the Fly Fishermen's Association and hosts many of the association's annual meetings. The western part of the state has a robust lake trout and kokanee salmon recreational fishery, pike are found in many parts of the state, and pike, smallmouth bass, largemouth bass, catfish and paddlefish are fished in the waters of eastern Montana. The 1992 film A River Runs Through It, directed by Robert Redford from the novel by Norman Mclean, was shot in Montana and brought fly fishing and the state national attention.

**Question 0**

Since when has Montana been a trout fishing destination?

**Question 1**

Which fishing organisation has its home here?

**Question 2**

What kind of fishing is done in the state?

**Question 3**

Which Robert Redford film was shot here in 1002?

**Text number 17**

Montana Territory was formed on 26 April 1864, when the United States passed the Organic Act. Schools began to form in the area even before it was officially a territory, as families began to settle in the area. The first schools were charter schools, usually held in the teacher's home. The first official school was at Fort Owen in the Bitterroot Valley in 1862. The pupils were Indian children and children of Fort Owen workers. The first school term began in early winter and lasted only until 28 February. The classes were taught by Mr. Robinson. The second early charter school was founded by Thomas Dimsdale in Virginia City in 1863. This school charged students $1.75 a week. The Montana Territorial Legislative Assembly held its first meeting in 1864. The first legislature authorized counties to levy taxes for schools, setting the stage for public education. Madison County was the first to take advantage of the newly passed taxes, establishing the first public school in Virginia City in 1886. The first school year was scheduled to begin in January 1866, but severe weather delayed the opening until March. The first school year lasted all summer and did not end until August 17. One of the first teachers was Sarah Raymond. She was a 25-year-old woman who had travelled to Virginia City by wagon train in 1865. To qualify as a teacher, Raymond took an examination at her home and paid a $6 fee in gold dust to receive a teaching certificate. With the help of an assistant teacher, Mrs. Farley, Raymond was assigned to teach 50 to 60 of the school's 81 students daily. Sarah Raymond was paid $125 per month, and Mrs. Farley was paid $75 per month. The school did not use textbooks. They were replaced by a selection of books brought back by the various settlers. Sarah stopped teaching the following year, but later became superintendent of schools in Madison County.

**Question 0**

When was Montana Territory formed?

**Question 1**

When was the first official school?

**Question 2**

How much were students charged per week?

**Question 3**

When was Virginia City's first public school founded?

**Text number 18**

Montana has thousands of designated rivers and streams, 450 miles (720 km) of which are known for their "blue ribbon" trout fishery. Montana's water resources serve recreation, hydropower, crop and forage irrigation, mining, and human consumption. Montana is one of the few geographic areas in the world where rivers form parts of three major watersheds (i.e., the intersection of two continental divides). Its rivers flow into the Pacific Ocean, the Gulf of Mexico and Hudson Bay. The watersheds are divided by the Triple Divide at Peak Glacier National Park.

**Question 0**

How many kilometres of rivers are known to have high quality trout?

**Question 1**

Which bays are fed by Montana's rivers?

**Question 2**

Where are the catchment areas distributed?

**Question 3**

Which ocean do rivers flow into from Montana?

**Text number 19**

East of the division, the Missouri River, formed by the confluence of the Jefferson, Madison and Gallatin rivers near Three Forks, flows north in the west-central part of the state to Great Falls. From there it flows generally east through fairly flat agricultural land and the Missouri Breaks to the Fort Peck Basin. The section of the river between Fort Benton and the Fred Robinson Bridge on the western boundary of Fort Peck Reservoir was designated a National Wild and Scenic River in 1976. The Missouri flows into North Dakota near Fort Union and drains more than half of Montana's land area (82,000 square miles (210,000 km2)). Nearly one-third of the Missouri River's flow in Montana is behind 10 dams: the Toston, Canyon Ferry, Hauser, Holter, Black Eagle, Rainbow, Cochrane, Ryan, Morony and Fort Peck.

**Question 0**

Which rivers make up the Missouri River?

**Question 1**

Where do the rivers meet at the confluence with the Missouri River?

**Question 2**

Which way does the water flow in this area?

**Question 3**

In what year was Fort Peck Reservoir designated a National Scenic River?

**Text number 20**

The Yellowstone River rises on a continental divide near Younts Peak in Wyoming's Teton Wilderness. It flows north through Yellowstone National Park, enters Montana near Gardiner and flows through Paradise Valley to Livingston. It then flows northeast across the state through Billings, Miles City, Glendive and Sidney. Yellowstone joins the Missouri in North Dakota east of Fort Union. It is the longest undammed, free-flowing river in the contiguous United States, draining about a quarter of Montana (36 000 square miles (93 000 km2)).

**Question 0**

Which way does the Yellowstone River flow through the national park?

**Question 1**

Where does Yellowstone meet the Missouri River?

**Text number 21**

Montana has at least 3,223 designated lakes and reservoirs, including Flathead Lake, the largest natural freshwater lake in the western United States. Other large lakes include Whitefish Lake in the Flathead Valley and Lake McDonald and Lake St. Mary in Glacier National Park. The state's largest reservoir is Fort Peck Reservoir on the Missouri River, which is surrounded by the world's second largest earthen dam and largest hydraulically filled dam. Other large reservoirs include Hungry Horse on the Flathead River, Koocanusa Lake on the Kootenai River, Elwell Lake on the Marias River, Clark Canyon on the Beaverhead River, Yellowtail on the Bighorn River, Canyon Ferry, Hauser, Holter, Rainbow and Black Eagle on the Missouri River.

**Question 0**

How many named lakes are there in Montana?

**Question 1**

What is the name of the largest freshwater lake in the western United States?

**Question 2**

What is the name of the largest reservoir in the state?

**Question 3**

On which river is the Fort Peck reservoir located?

**Text number 22**

The state's vegetation includes pine, ponderosa pine, Douglas-fir, larch, spruce, aspen, birch, red aspen, lingonberry, ash, alder, sycamore and raspberry. Forests cover about 25 percent of the state's land area. Native flowers in Montana include asters, gooseberries, daisies, lupines, poppies, primroses, achene, lilies, orchids and dried flowers. Several species of sagebrush and cactus are common, as are many species of grass. Many species of fungi and lichens also occur in the state.

**Question 0**

How much of the national territory is covered by forests?

**Text number 23**

Montana has a diverse fauna, including 14 species of amphibians, 90 species of fish, 117 species of mammals, 20 species of reptiles and 427 species of birds. There are also more than 10 000 invertebrate species, including 180 molluscs and 30 crustaceans. Montana has the largest grizzly bear population in the lower 48 states. Montana is home to five federally endangered species - the black bear, crane, lesser spotted seal, osprey and white seal - and seven threatened species, including the grizzly bear, Canadian lynx and bull trout. The Montana Department of Fish, Wildlife and Parks manages fishing and hunting seasons for at least 17 game fish species, including seven species of trout, herring and smallmouth bass, and at least 29 game bird and game animal species, including ring-necked pheasant, gray partridge, elk, pronghorn antelope, mule deer, white-tailed deer, gray wolf and rhinoceros pond.

**Question 0**

How many different species of fish are there in Montana?

**Question 1**

What are the most common bear species in Montana?

**Question 2**

How many endangered species are there in Montana?

**Question 3**

How many game fish species have a hunting season?

**Text number 24**

The average annual rainfall is 380 mm (15 inches), but there are large variations. Mountains block the moist Pacific air, keeping moisture in the western valleys and creating a rain shadow to the east. Heron in the west receives the most rain, 881 mm (34.70 inches). On the eastern (leeward) side of the mountains, the valleys are much drier; Lonepine receives an average of 11.45 inches (291 mm) of precipitation and Deer Lodge 11.00 inches (279 mm). The mountains themselves can receive more than 2,500 mm (100 inches) of rain, for example the Grinnell Glacier glacier in Grinnell Glacier National Park receives 105 mm (2,700 inches). The area southwest of Belfry averaged only 6.59 inches (167 mm) of rain over a sixteen-year period. In most larger cities, snowfall ranges from 30 to 50 inches (0.76 to 1.27 m) per year. In the mountains, 300 inches or 7.62 metres of snow can accumulate during the winter. Heavy snowstorms can occur at any time between September and May, but the heaviest snowfall occurs between November and March.

**Question 0**

What is the annual rainfall?

**Question 1**

How much rainfall does Heron receive?

**Question 2**

How much rain does the Grinnell Glacier get?

**Text number 25**

Montana's personal income tax includes 7 categories, with rates ranging from 1% to 6.9%. There is no sales tax in Montana. Household goods in Montana are exempt from property tax. However, property taxes are levied on livestock, farm machinery, heavy equipment, cars, trucks and business equipment. The amount of property tax is not determined solely by the value of the property. The value of the property is multiplied by the tax rate set by the Montana Legislature to determine the taxable value of the property. The taxable value is then multiplied by the mill levy established by the various taxing authorities - cities and counties, school districts and others.

**Question 0**

How many tax brackets are there in Montana?

**Question 1**

What is the highest tax bracket in Montana?

**Question 2**

Is there a sales tax in Montana?

**Text number 26**

Montana is home to around 66 000 people of Native American heritage. Several Indian treaties and federal legislation, including the Indian Appropriations Act (1851), the Dawes Act (1887) and the Indian Reorganization Act (1934), established seven Indian reservations in Montana, comprising eleven tribal nations. The Twelfth Nation, the Little Shell Chippewa Tribe, is a "landless" people headquartered in Great Falls and recognized by the State of Montana but not by the US government. The Blackfeet are headquartered on the Blackfeet Indian Reservation (1851) at Browning, the Crow Crow Indian Reservation (1851) at Crow Agency, the Confederated Salish and Kootenai and Pend d'Oreille Flathead Indian Reservation (1855) at Pablo, the Northern Cheyenne on the Northern Cheyenne Indian Reservation (1884) at Lame Deer, Assiniboine and Gros Ventre on the Fort Belknap Indian Reservation (1888) at Fort Belknap Agency, Assiniboine and Sioux on the Fort Peck Indian Reservation (1888) at Poplar, and on the Chippewa-Cree Rocky Boy's Indian Reservation (1916) near Box Elder. About 63 percent of all Indians live off reservations and are concentrated in Montana's major cities, with the largest concentration of urban Indians in Great Falls. The state also has a small Métis population, and according to 1990 census data, Montana was home to people from as many as 275 different tribes.

**Question 0**

How many Native Americans live in Montana?

**Question 1**

When was the Indian Appropriations Act passed?

**Question 2**

In what year was the Dawes Act passed?

**Question 3**

Where is the Little Shell Chippewa headquarters located?

**Question 4**

What percentage of Montana Indians live off the reservation?

**Text number 27**

Although the largest Native American population in Montana is of German origin, some of the agriculturally dominated northern and eastern prairie areas have significant Scandinavian ancestry, similar to that of the surrounding areas of North Dakota and Minnesota. Irish, Scottish and English farmers also settled in Montana. Historically mining-oriented communities in western Montana, such as Butte, have a wider range of European-American ethnicities; Finns, Eastern Europeans and especially Irish settlers left an indelible mark on the region, as did people originally from British mining areas such as Cornwall, Devon and Wales. The nearby town of Helena, which was also established as a mining camp, had a similar mix in addition to a small Chinese town. Many of Montana's historic logging communities originally attracted people of Scottish, Scandinavian, Slavic, English and Scots-Irish ancestry [referred ].

**Question 0**

What is the largest European-American race in Montana?

**Question 1**

What was the name under which Helena was originally founded?

**Text number 28**

Montana's Native American population is larger in number and percentage than in most US states. Although the state ranked 45th in population (according to the 2010 US Census), it ranked 19th in total indigenous population. Indigenous peoples accounted for 6.5% of the state's total population, the sixth highest proportion of all 50 states. Montana has three counties with a majority Native American population: the Big Horn, Glacier and Roosevelt. Other counties with large Native American populations include Blaine, Cascade, Hill, Missoula and Yellowstone counties. The state's Native American population grew by 27.9 percent between 1980 and 1990 (while Montana's overall population grew by only 1.6 percent) and 18.5 percent between 2000 and 2010. In 2009, nearly two-thirds of the state's Native Americans lived in urban areas. Of Montana's 20 largest cities, Polson (15.7 percent), Havre (13.0 percent), Great Falls (5.0 percent), Billings (4.4 percent) and Anaconda (3.1 percent) had the largest Native American populations in 2010. Billings (4,619), Great Falls (2,942), Missoula (1,838), Havre (1,210), and Polson (706) have the largest populations of Native Americans. The state's seven reservations include more than twelve separate Native American ethno-linguistic groups.

**Question 0**

What percentage of Montana's population is indigenous?

**Question 1**

In which three provinces are Indians in the majority?

**Question 2**

During which year the indigenous population increased by 27.9%...

**Text number 29**

Montana's climate has warmed and is still warming. The glaciers in Glacier National Park have retreated and are predicted to melt completely within a few decades. Many Montana cities set heat records in July 2007, the hottest month ever recorded in Montana. Winters are also warmer, and cold spells are less frequent. In the past, these cold spells have killed beetles, which are now invading western Montana's forests. The combination of warmer weather, beetle attacks, and poor forest management in recent years has led to a significant increase in the severity of wildfires in Montana. According to a study conducted by the Harvard School of Engineering and Applied Science for the US Environmental Protection Agency, wildfires in parts of Montana are increasing the area burned by wildfires by 200% and the associated air pollution by 80%.

**Question 0**

What year did many Montana cities set heat records?

**Question 1**

Which month was the hottest ever?

**Question 2**

Which problem has increased significantly in severity?

**Text number 30**

When white settlers began to colonise Montana from the 1850s to the 1870s, disputes with Native Americans arose, mainly over land ownership and management. In 1855, Washington Territorial Governor Isaac Stevens negotiated the Hellgate Treaty between the US government and the Salish, Pend d'Oreille and Kootenai peoples of western Montana, which established tribal boundaries. The treaty was ratified in 1859. Although the treaty established the area that later became the Flathead Indian Reservation, problems with interpreters and ambiguity over treaty terms led whites to believe that the Bitterroot Valley had been opened to settlement, but the tribal nations disputed these provisions. The Salish remained in the Bitterroot Valley until 1891.

**Question 0**

What year was the Hellgate deal done?

**Question 1**

Who negotiated the Hellgate deal?

**Question 2**

What year was the treaty ratified?

**Question 3**

What was agreed in the contract?

**Text number 31**

The first US Army post established in Montana was Camp Cooke on the Missouri River in 1866 to protect steamboat traffic to Fort Benton, Montana. More than a dozen other military posts were established in the state. Pressure for land ownership and control increased as gold was discovered in various parts of Montana and surrounding states. Montana saw major battles in the Red Cloud War, the Great Sioux War of 1876, the Nez Perce War and conflicts with the Piegan Blackfeet. The most notable of these were the Marias Massacre (1870), the Battle of Little Bighorn (1876), the Battle of Big Hole (1877) and the Battle of Bear Paw (1877). The last recorded conflict in Montana between the US Army and Indians occurred in 1887 at the Battle of Crow Agency in the Big Horn. Survivors of the Indians who signed the treaty generally had to move to reservations.

**Question 0**

What was the name of the first US Army post?

**Question 1**

Where was Camp Cooke located?

**Question 2**

What year was the Great Sioux War?

**Question 3**

In what year did the Battle of Bear Paw take place?

**Text number 32**

English is the official language of the state of Montana, as it is in many other US states. English is also the majority language. According to the 2000 US Census, 94.8% of the population aged 5 or older speaks English at home. Spanish is the language most commonly spoken at home other than English. In 2011, there were approximately 13,040 Spanish speakers (1.4% of the population) in the state, 15,438 (1.7% of the state population) speakers of Indo-European languages other than English or Spanish, 10,154 (1.1%) speakers of Native American languages, and 4,052 (0.4%) speakers of Asian or Pacific Islander languages. Other languages spoken in Montana (as of 2013) include Assiniboine (about 150 speakers in Montana and Canada), Blackfoot (about 100 speakers), Cheyenne (about 1,700 speakers), Plains Cree (about 100 speakers), Crow (about 3,000 speakers), Dakota (about 18,800 speakers in Minnesota, Montana, Nebraska, North Dakota and South Dakota), German Hutterites (about 5 600 speakers), Gros Ventre (about 10 speakers), Kalispel-Pend d'Oreille (about 64 speakers), Kutenai (about 6 speakers) and Lakota (about 6 000 speakers in Minnesota, Montana, Nebraska, North Dakota and South Dakota). In 2009, the US Department of Education estimated that 5,274 Montana students spoke a language other than English at home. These languages included Native American (64 percent), German (4 percent), Spanish (3 percent), Russian (1 percent) and Chinese (less than 0.5 percent).

**Question 0**

What is the official language of Montana?

**Question 1**

What percentage of Montana's population speaks English?

**Question 2**

What is the second most common language spoken in Montana?

**Question 3**

How many Spanish speakers are there in the state?

**Question 4**

How many people in the state of Montana speak Cheyenne?

**Text number 33**

According to the 2010 Census, 89.4 percent of the population was White (87.8 percent non-Hispanic White), 6.3 percent American Indian and Alaska Native, 2.9 percent Hispanic and Latino of any race, 0.6 percent Asian, 0.4 percent Black or African American, 0.1 percent Native Hawaiian and other Pacific Islander, 0.6 percent of some other race, and 2.5 percent of two or more races. The largest groups of European ancestry in Montana in 2010 were: Germany (27.0%), Ireland (14.8%), England (12.6%), Norway (10.9%), France (4.7%), and Italy (3.4%).

**Question 0**

What percentage of the state is white?

**Question 1**

What percentage of the state is Native American?

**Question 2**

What percentage of the population of Monatanas is Spanish?

**Text number 34**

The US Census Bureau estimates Montana's population on July 1, 2015, at 1,032,949, up 4.40 percent from the 2010 census. The 2010 census put Montana's population at 989,415, an increase of 43,534 people, or 4.40%, since 2010. During the first decade of the new century, growth was concentrated primarily in Montana's seven largest counties, with the largest percentage increase in Gallatin County, which saw a 32 percent increase in population between 2000 and 2010. The largest percentage increase was in Kalispell (40.1 percent), and the largest actual population increase was in Billings, which grew by 14,323 between 2000 and 2010.

**Question 0**

What was the population of the state in 2015?

**Question 1**

How much has the population grown since 2010?

**Question 2**

In which province was the growth highest?

**Question 3**

Which city had the highest growth?

**Text number 35**

In 1940, Jeannette Rankin was once again elected to Congress, and in 1941 she voted against the US declaration of war, as she had done in 1917. This time she was the only one to vote against the war, and the public outcry that followed her vote meant that she needed police protection for a while. Other pacifists tended to belong to 'peace churches', which were generally opposed to the war. Many individuals from across the United States were sent to Montana during the war, appealing for conscientious objector status, smokejumpers and other forest firefighting assignments.

**Question 0**

What year did Jeannette Rankin first vote against the war?

**Question 1**

When did he vote against the war for the second time?

**Question 2**

What were the conscientious objectors sent to Montana to do?

**Text number 36**

In parallel with these conflicts, bison, a key species and the primary source of protein on which indigenous peoples had survived for centuries, were wiped out. By some estimates, there were more than 13 million bison in Montana in 1870. In 1875, General Philip Sheridan petitioned a joint session of Congress to allow the slaughter of herds to deprive Indians of their food source. By 1884, commercial hunting had driven bison to the brink of extinction; only about 325 bison remained in the United States.

**Question 0**

How many bison were in Montana in 1870?

**Question 1**

How many bison were left in 1884?

**Question 2**

Who petitioned Congress for the slaughter of bison?

**Question 3**

What year did General Sheridan approach Congress about killing bison?

**Text number 37**

The Northern Pacific Railroad (NPR) tracks entered Montana from the west in 1881 and from the east in 1882. However, the railroad played a major role in creating tensions with Native American tribes in the 1870s. In 1871, 1872 and 1873, NPR leader Jay Cooke launched major explorations in the Yellowstone Valley, which were strongly opposed by the Sioux led by Sitting Bull. These clashes contributed to the Panic of 1873, which delayed the construction of the railroad into Montana. Explorations in 1874, 1875 and 1876 helped ignite the Great Sioux War of 1876. The transcontinental NPR was completed on September 8, 1883 at Gold Creek.

**Question 0**

When did the Northern Pacific Railroad arrive in Montana from the west?

**Question 1**

When did the Northern Pacific Railroad arrive in Montana from the east?

**Question 2**

What year did the Chief Sitting Bull challenge the railway?

**Question 3**

What year was the Great White Sioux War?

**Question 4**

When was the transcontinental National Pacific Railroad completed?

**Text number 38**

In 1866, under the leadership of Thomas Meagher, the governor of the region, the Montanans held a constitutional convention, which failed in its attempt to create a state. A second constitutional convention was held in Helena in 1884, resulting in a constitution that was ratified 3-1 by Montana citizens in November 1884. For political reasons, Congress did not approve statehood for Montana until 1889. Congress approved Montana's statehood in February 1889, and President Grover Cleveland signed a bill granting Montana, North Dakota, South Dakota and Washington statehood, once the appropriate constitutions were in place. In July 1889, Montanans convened their third constitutional convention and drafted a constitution, which was approved by the people and the federal government. On November 8, 1889, President Benjamin Harrison proclaimed the Union of Montana the forty-first state. The state's first governor was Joseph K. Toole. In the 1880s, Helena (now the state capital) had more millionaires per capita than any other city in the United States.

**Question 0**

When was the first constitutional convention held in Montana?

**Question 1**

Why was the Constitutional Convention held?

**Question 2**

When was the second Constitutional Convention held?

**Question 3**

In what year was Montana admitted as a state?

**Question 4**

Which three other countries were admitted in the same year?

**Text number 39**

The Homestead Act of 1862 offered free land to settlers who could claim and "prove" 160 acres (0.65 km2) of federal land in the Midwest and West of the United States. Not many immigrants came to Montana as a result of this law, because 160 acres was usually not enough to support a family in an arid region. The first homestead application under the Act in Montana was made by David Carpenter near Helena in 1868. The first female application for a homestead near Warm Springs Creek was made by Miss Gwenllian Evans, daughter of Morgan Evans, pioneer of Deer Lodge Montana. By 1880, there were farms in the greener valleys of central and western Montana, but few on the eastern plains.

**Question 0**

What year did the Homestead Act offer land to settlers?

**Question 1**

How much land does the Homestead Act allow?

**Question 2**

What year was the first home occupation claim made?

**Text number 40**

The Desert Land Act of 1877 was passed to allow settlement of the arid lands of the west, and allotted 640 acres (2.6 km2) to settlers who received a payment of $0.25 per acre and a promise to irrigate the land. After three years, a payment of $1 per acre would be made and the land would be transferred to the settlers. This law brought mainly cattle and sheep ranchers to Montana, many of whom grazed their cattle on the Montana prairie for three years, did little to irrigate the land, and then abandoned it without paying the final payment. Some farmers arrived with the Great Northern and Northern Pacific railroads in the 1880s and 1890s, albeit in relatively small numbers.

**Question 0**

When was the Wilderness Act adopted?

**Question 1**

How much land was divided by the Desert Act?

**Question 2**

What was the initial payment per hectare?

**Text number 41**

In the early 1900s, James J. Hill of the Great Northern began promoting the settlement of the Montana prairie to fill his trains with settlers and goods. Other railroads followed suit. In 1902, the Reclamation Act was passed, allowing the construction of irrigation projects in Montana's eastern river valleys. In 1909, Congress passed the Enlarged Homestead Act, which expanded the amount of vacant land from 160 acres to 320 acres (0.6 to 1.3 square miles) per family, and in 1912 reduced the time required to "prove" a claim to three years. In 1916, the Stock-Raising Homestead Act allowed 640 acres in areas not suitable for irrigation. This combination of advertising and amendments to the Homestead Act attracted tens of thousands of homesteaders who were attracted by free land, and during World War I wheat prices were particularly high. In addition, Montana was experiencing temporary above-average rainfall. The landowners who arrived during this period were known as "Honyockers" or "scissorbills". Although the word "honyocker", possibly derived from the ethnic word "hunyak", was used derisively as a term for "greenhorn", "new to the field" or "unprepared", in reality most of these new settlers had previous farming experience, although many had none.

**Question 0**

Who promoted settlement in Montana in the early 1900s?

**Question 1**

What year was the Reclamation Act passed?

**Question 2**

In what year was the extended Home Ownership Act adopted?

**Question 3**

How much land was subdivided in the new expanded Homestead Act?

**Text number 42**

In June 1917, the US Congress passed the Espionage Act of 1917, which was later extended by the Sedition Act of 1918, which came into force in May 1918. In February 1918, the Montana legislature had passed the Montana Sedition Act, which was modeled on the federal version. Together, these laws criminalised criticism of the US government, military or symbols, by speech or other means. The Montana law led to the arrest of over 200 people and the conviction of 78, most of whom were of German or Austrian descent. More than 40 spent time in prison. In May 2006, then Governor Brian Schweitzer posthumously pardoned all those convicted of violating Montana's sedition law.

**Question 0**

When did Congress pass the Espionage Act?

**Question 1**

When was the incitement law adopted?

**Question 2**

What do these actions do to the laws?

**Question 3**

How many people were arrested under Montana law?

**Question 4**

How many of the 200 arrested under Montana law were convicted?

**Text number 43**

When the United States entered World War II on December 8, 1941, many Montanans had already enlisted in the army to escape the poor economy of the previous decade. More than 40,000 Montanans joined the armed forces in the first year after the declaration of war, and more than 57,000 joined the army before the war ended. These figures represented about 10% of the state's total population, and Montana's per capita military population was again among the highest in the state. Many Native Americans, including Crow Nation soldiers who became code talkers, served in the service. At least 1,500 Montanans died in the war. Montana also trained the First Special Service Force, or "Devil's Brigade", a joint US-Canadian commando unit that trained at Fort William Henry Harrison to gain experience of mountain and winter conditions before deployment. Air bases were built at Great Falls, Lewistown, Cut Bank and Glasgow, some of which were used as depots to prepare aircraft for use by the Soviet Allied Forces. During the war, some 30 Japanese balloon bombs are documented to have landed in Montana, but were not thought to have caused casualties or large forest fires.

**Question 0**

How many Montanans joined the army in the first year of the war?

**Question 1**

How many Montanans joined the army during the war in total?

**Question 2**

How many Montanans died in the war?

**Question 3**

Who was training at the Montana Military Reservation?

**Question 4**

Where were the air bases built in Montana?

**Document number 435**

**Text number 0**

Punjab (Urdu, Punjabi: پنجاب, panj-āb, "five waters": listen (help-info)), also known as Panjab, is the most populous of Pakistan's four provinces. It covers an area of 205,344 square kilometres (79,284 sq mi) and had a population of 91,379,615 in 2011, about 56% of the country's total population. Its provincial capital and largest city is Lahore. Punjab borders the Indian states of Jammu and Kashmir in the northeast and Punjab and Rajasthan in the east. In Pakistan, it borders Sindh in the south, Balochistan and Khyber Pakhtunkhwa in the west and Islamabad and Azad Kashmir in the north.

**Question 0**

What does Punjab mean?

**Question 1**

How many provinces are there in Pakistan?

**Question 2**

How big is Punjab?

**Question 3**

What is the population of Punjab?

**Question 4**

What is the largest city in Punjab?

**Question 5**

What is the population of Lahore?

**Question 6**

What is the largest city in India?

**Question 7**

What is the area of Pakistan?

**Question 8**

What does Pakistan mean?

**Question 9**

How many provinces are there in India?

**Text number 1**

The geography of Punjab consists largely of the alluvial plain of the Indus River and its four major tributaries in Pakistan, the Jhelum, Chenab, Ravi and Sutlej rivers. The province has several mountainous areas, including the Sulaiman Mountains in the southwest and the Margalla Hills, Salt Range and Pothohar Plateau in the north. Agriculture is the main source of income and employment in Punjab; wheat and cotton are the main crops. Since independence, Punjab has become a centre of political and economic power; it remains the most industrialised province in Pakistan. It accounts for 39.2% of the country's large manufacturing establishments and 70% of its small manufacturing establishments. Its capital, Lahore, is a major regional cultural, historical and economic centre.

**Question 0**

Which plain is Punjab on?

**Question 1**

What are the tributaries of the Indus River?

**Question 2**

How much of Pakistan's large-scale industry is in Punjab?

**Question 3**

How much of Pakistan's small-scale industry is in Punjab?

**Question 4**

What crops are grown in Punjab?

**Question 5**

How many mountain ranges are there in Punjab?

**Question 6**

Where is the alluvial plain located?

**Question 7**

Which tributary is in the north?

**Question 8**

What is Pakistan's main export product?

**Question 9**

How much of the large-scale production takes place in Lahore?

**Text number 2**

Punjab is the second largest province in Pakistan, after Balochistan, with an area of 205 344 km2 (79 284 sq mi), and is located on the north-western edge of the geological Indian continental plate in South Asia. The province is bordered by Kashmir (Azad Kashmir, Pakistan and Jammu and Kashmir, India) in the northeast, the Indian states of Punjab and Rajasthan in the east, the Pakistani province of Sindh in the south, Balochistan in the southwest, Khyber Pakhtunkhwa in the west and the Islamabad metropolitan area in the north.

**Question 0**

How big is Punjab compared to the other three provinces?

**Question 1**

What is the largest province in Pakistan?

**Question 2**

How many square kilometres is Punjab?

**Question 3**

Which Indian states are located east of Punjab in Pakistan?

**Question 4**

Which province in Pakistan is located south of Punjab?

**Question 5**

What is the area of Balochistan?

**Question 6**

What borders Balochistan to the north-east?

**Question 7**

What is east of Balochistan?

**Question 8**

What is west of Islamabad?

**Question 9**

Where does Islamabad rank in terms of the size of Pakistan's provinces?

**Text number 3**

The capital and largest city is Lahore, which was the historic capital of the Punjab region. Other important cities include Faisalabad, Rawalpindi, Gujranwala, Sargodha, Multan, Sialkot, Bahawalpur, Gujrat, Sheikhupura, Jhelum and Sahiwal. The undivided Punjab has six rivers, five of which flow through the Pakistani Punjab. From west to east, these are the Indus, Jhelum, Beas, Chenab, Ravi and Sutlej. Almost 60% of Pakistan's population lives in the Punjab. It is the only province in the country that touches all other provinces, and it also surrounds the federal enclave of Islamabad, the capital. P-A-K-I-S-T-A-N P stands for Punjab.

**Question 0**

Which province in Pakistan borders three other provinces?

**Question 1**

What is the capital of Pakistan?

**Question 2**

How many rivers are there in Punjab, Pakistan?

**Question 3**

What is the easternmost river in Punjab?

**Question 4**

How much of Pakistan's population lives in Punjab?

**Question 5**

What is the capital of Faisalabad?

**Question 6**

How many rivers are there in Multan?

**Question 7**

What percentage of Pakistan's population lives in Sargodha?

**Question 8**

What does P stand for in Punjab?

**Question 9**

What does S stand for in Pakistan?

**Text number 4**

The Punjab government has 48 chambers. Each department is headed by a provincial minister (a politician) and a provincial secretary (usually a BPS-20 or BPS-21 officer). All ministers report to the Chief Minister, who is the executive head. All secretaries report to the Chief Secretary of the Punjab, who is usually a BPS-22 officer. The Chief Secretary in turn reports to the Prime Minister. In addition to these departments, there are a number of autonomous bodies and subsidiary departments which report directly either to the Secretaries or to the Chief Secretary.

**Question 0**

How many departments are there in the Punjab administration?

**Question 1**

Who heads each ministry?

**Question 2**

To whom do provincial ministers report?

**Question 3**

To whom do county secretaries report?

**Question 4**

What is the value of the Secretary General?

**Question 5**

What is the official title of the Prime Minister?

**Question 6**

Who does the Prime Minister report to?

**Question 7**

How many departments are attached to the secretaries?

**Question 8**

What is the value of a provincial minister?

**Question 9**

What does the Prime Minister send to the Secretary-General?

**Text number 5**

Punjab was known as Panchanada during the Mahabharata. Punjab was part of the Indus Valley civilisation more than 4000 years ago. The most important place in Punjab was the city of Harrapan. The Indus Valley civilisation covered a large part of present-day Pakistan and eventually developed into the Indo-Aryan civilisation. The Vedic civilisation flourished along the Indus River. This civilisation shaped the later cultures of South Asia and Afghanistan. Although the Harappa archaeological site was partially damaged in 1857 when engineers building the Lahore-Multan Railway used bricks from the Harappa ruins as ballast for the tracks, a wealth of artefacts have been found there. Punjab was part of great ancient empires, including the Gandhara Mahajanapadas, Akhamenids, Macedonians, Mauryas, Kushans, Guptas and Hindu Shahs. It also included for a time the Gujar Empire, also known as the Gurjara-Pratihara Empire. Agriculture flourished and trading cities (such as Multan and Lahore) prospered.

**Question 0**

What was Punjab previously known as?

**Question 1**

Which ancient civilisation lived in Punjab?

**Question 2**

When was Punjab part of the Indus Valley civilisation?

**Question 3**

What was the major Indus city in Punjab?

**Question 4**

What bricks were taken from Harrapa for the construction?

**Question 5**

What was the name of Panchanada?

**Question 6**

When was Panchanada renamed Punjab?

**Question 7**

When was the Harappa archaeological site discovered?

**Question 8**

When was Punjab part of the Gujar kingdom?

**Question 9**

What was the main export product of the Kushans?

**Text number 6**

Because of its location, the Punjab region was subject to constant invasions and influences from the West, and for centuries witnessed foreign invasions by Greeks, Kushans, Scythians, Turks and Afghans. The city of Taxila was founded by Bharat, son of Takshi, brother of Ram. It is said to have been the site of the oldest university in the world, Takshashila University. One of the teachers was the great Vedic thinker and politician Chanakya. Taxila was a great centre of learning and intellectual debate during the Mauryan Empire. It is a UN World Heritage Site, valued for its archaeological and religious history.

**Question 0**

Who has invaded Punjab?

**Question 1**

Who founded Taxila?

**Question 2**

Which is said to be the oldest university in the world?

**Question 3**

What was the learning centre of which kingdom was Taxila?

**Question 4**

Who was Chanakya?

**Question 5**

Who has invaded Punjab?

**Question 6**

What did Ram find?

**Question 7**

Who founded Takshashila University?

**Question 8**

What was the centre of learning in the Greek Empire?

**Question 9**

Who was Takshi's brother?

**Text number 7**

The north-western part of South Asia, including Punjab, was repeatedly invaded or conquered by various foreign empires, including those of Tamerlane, Alexander the Great and Genghis Khan. After conquering Drangiana, Arachosia, Gedrosia and Seistan in ten days, Alexander crossed the Hindu Kush and thus gained a full appreciation of the greatness of the country and its riches in gold, gems and pearls. However, Alexander had to confront and reduce the tribes living on the Punjab border before reaching the lush plains. After taking the north-eastern route, he marched against the Aspii (hill tribes), who put up a strong resistance but were defeated. Alexander then marched through Ghazni, besieged Magassa and then marched to Ora and Bazira. Turning north-east, Alexander marched to Pucela, the capital of the present-day Pahl region. He arrived in western Punjab, where the ancient city of Nysa (on the site of present-day Mong) was located. The warlike Cathians, the inhabitants of Multan, formed an alliance against Alexander. Alexander deployed large numbers of troops and eventually killed seventeen thousand Cathians in this battle, and the city of Sagala (now Sialkot) was razed to the ground. Alexander left Punjab in 326 BC and took his army to the heartlands of his empire.[citation needed].

**Question 0**

Where did Alexander the Great conquer in 10 days?

**Question 1**

What riches did Alexander hope to find?

**Question 2**

From which direction did Alexander arrive in Punjab?

**Question 3**

Who were the Aspii?

**Question 4**

Who were the Catholics?

**Question 5**

Which empires were invaded by South Asia?

**Question 6**

How long did it take Alexander to cross the Hindu Kush?

**Question 7**

What did Genghis Khan steal from South Asia?

**Question 8**

How many Aspii died in battle?

**Question 9**

When did Alexander invade Punjab?

**Text number 8**

The Punjabis followed a wide range of religions, mainly Hinduism, when the Muslim Umayyad army led by Muhammad bin Qasim conquered Sindh and southern Punjab in 712, defeating Raja Dahir. The Umayyad Caliphate was the second Islamic caliphate established after the death of Muhammad. It was ruled by the Umayyad dynasty, whose name derives from the great-grandfather of the first Umayyad caliph, Umayya ibn Abd Shams. Although the Umayyad family originally came from Mecca, their capital was Damascus. Muhammad bin Qasim was the first to bring the message of Islam to the people of Punjab. The Punjab was part of various Muslim kingdoms composed of Afghan and Turkic peoples in cooperation with local Punjabi tribes and others. In the 1100s, during the reign of Mahmud Ghazni, the province became an important centre, with Lahore as its second capital and the second centre of the Ghaznavid empire, which operated from Afghanistan. The Punjab region became predominantly Muslim-dominated thanks to the missionaries, the Sufi saints, whose dargahs were located in the landscape of the Punjab region.

**Question 0**

What religion did Punjab become?

**Question 1**

What did missionary Muslims build in Punjab?

**Question 2**

Who led the Umayyad army?

**Question 3**

Where did the Umayyads conquer?

**Question 4**

Who did the Umayyads defeat?

**Text number 9**

In 1758, Raghunath Rao, a general of the Hindu Maratha Empire, conquered Lahore and Attock. Ahmad Shah Abdal's son and viceroy Timur Shah Durrani was driven out of Punjab. Lahore, Multan, Dera Ghazi Khan, Kashmir and other subahs south and east of Peshawar were largely under Maratha control. In Punjab and Kashmir, the Marathas were now major players. The Third Battle of Panipat was fought in 1761, when Ahmad Shah Abdali invaded the Maratha region of Punjab and captured the remnants of the Maratha Empire in the Punjab and Kashmir regions and reasserted their control.

**Question 0**

Who was Raghunath Rao?

**Question 1**

Who did Rao conquer in 1758?

**Question 2**

When was the third battle of Panipat?

**Question 3**

Who controlled most of the eastern part of Peshawar?

**Question 4**

Who conquered part of the Maratha kingdom in 1761?

**Question 5**

When did Timur conquer Lahore?

**Question 6**

Who was Timur Shah Durrani's son?

**Question 7**

When was the second battle of Panipat?

**Question 8**

Where did Ahmad Shah Abdali attack in 1758?

**Question 9**

Who took Multan in 1761?

**Text number 10**

In the mid-fifteenth century, the religion of Sikhism was born. During the Mughal Empire, many Hindus increasingly embraced Sikhism. They became a powerful military force against the Mughal and later Afghan empires. After fighting against Ahmad Shah Durran in the later 1700s, the Sikhs took over Punjab and succeeded in establishing the Sikh empire led by Maharaja Ranjit Singh, which lasted from 1799 to 1849. The capital of Ranjit Singh's empire was Lahore, and the empire also extended into Afghanistan and Kashmir. Bhangi Misl was the first Sikh gang to conquer Lahore and other cities in the Punjab. Syed Ahmad Barelvi, a Muslim, waged jihad and tried to create an Islamic state with strict adherence to Islamic law. Syed Ahmad Barelvi started in 1821 with many of his supporters and spent two years organising popular and material support for his Punjabi campaign. He carefully developed a network of people throughout India to raise funds and encourage volunteers, and he travelled extensively throughout India to win supporters among devout Muslims. In December 1826, Sayyid Ahmad and his followers clashed with Sikh forces at Akora Khattak, but no decisive result was achieved. In a major battle near the town of Balakot in 1831, Sayyid Ahmad and Shah Ismail Shaheed with volunteer Muslims were defeated by a professional Sikh army.

**Question 0**

When did Sikhism start?

**Question 1**

In which empire did many Hindus become Sikhs?

**Question 2**

When did Ahmad fight at Akora Khattak?

**Question 3**

When did Ahmad fight in Balakot?

**Question 4**

Who won in Balakot?

**Question 5**

When did the Mughal Empire begin?

**Question 6**

Who led the Sikhs in the late 1700s?

**Question 7**

How long did the Afghan empire last?

**Question 8**

Which Muslim conquered Punjab?

**Question 9**

How many years did the battle between Muslim and Sikh forces last?

**Text number 11**

The death of Maharaja Ranjit Singh in the summer of 1839 caused political chaos, and the ensuing succession struggles and bloody infighting between court factions weakened the state. Relations with neighbouring British territories were then severed, leading to the first Anglo-Sikh war; this resulted in a British official living in Lahore and, in 1849, the territories south of the Satluj River were annexed to British India. After the Second Anglo-Sikh War in 1849, the Sikh Empire became the last territory to be annexed to British India. In Jhelum, 35 British soldiers of HM XXIV Regiment were killed by a local resistance movement during the 1857 Indian Mutiny[referred ].

**Question 0**

When did Ranjit Singh die?

**Question 1**

What caused Ranjit Singh's death?

**Question 2**

When was part of Punjab annexed to British India?

**Question 3**

When was the second Anglo-Sikh war fought?

**Question 4**

What was the last territory added to British India?

**Question 5**

When was Maharaja Ranjit Singh born?

**Question 6**

When did the first Anglo-Sikh war end?

**Question 7**

What was the name of the British official stationed in Lahore?

**Question 8**

What was the name of the territory annexed in 1849?

**Question 9**

How many local resistance members died in the 1857 uprising?

**Text number 12**

Punjab was the scene of major battles between the Indian and Pakistani armies during the 1965 and 1971 wars. Since the 1990s, Punjab has been home to several key sites in Pakistan's nuclear programme, including Kahuta. It is also home to important military bases such as Sargodha and Rawalpindi. The peace process between India and Pakistan, which began in earnest in 2004, has helped to calm the situation. Trade and people-to-people contacts across the Wagah border are now becoming more frequent. Indian porcupine pilgrims visit sacred sites such as Nankana Sahib.

**Question 0**

When did India and Pakistan fight in Punjab?

**Question 1**

What is Kahuta an important place for?

**Question 2**

Where are the major military bases in Punjab?

**Question 3**

When did India and Pakistan start serious peace talks?

**Question 4**

Who visits Nankana Sahib?

**Question 5**

When did Punjab fight India?

**Question 6**

When was Sargodha built?

**Question 7**

Where is Nankana Sahib?

**Question 8**

When did people-to-people trade become commonplace?

**Question 9**

What is the name of India's nuclear programme?

**Text number 13**

The southwest monsoon is expected to arrive in Punjab by May, but since the early 1970s the weather has been erratic. The spring monsoon has either bypassed the region or caused rainfall so heavy that flooding has occurred. June and July are oppressively hot. Although official estimates rarely exceed 46°C, newspapers report temperatures as high as 51°C, with regular reports of people dying from the heat. Heat records were broken in Multan in June 1993, when mercury was reported to have reached 54°C. In August, the oppressive heat is broken by a rainy season called barsat, which brings relief. The hardest part of summer is then over, but cooler weather doesn't arrive until late October.

**Question 0**

When do monsoons traditionally occur in Punjab?

**Question 1**

When did Punjab's weather become unpredictable?

**Question 2**

How hot is it in Punjab according to the newspapers?

**Question 3**

What was the record-breaking heat spike in Multan?

**Question 4**

When was the record heatwave in Multan?

**Question 5**

When did the first monsoon start in Punjab?

**Question 6**

What is the temperature in May?

**Question 7**

What is the highest temperature measured during a barrage?

**Question 8**

What will you see in October?

**Question 9**

What do official estimates rarely underestimate?

**Text number 14**

Punjabi is the main language and mother tongue of Punjab (written in Pakistan with the Shahmukhi character), and Punjabis form the largest ethnic group in the country. Punjabi is the provincial language of Punjab. There is no district in the province where Punjabi is the mother tongue of less than 89% of the population. The Constitution of Pakistan does not officially recognise the language at the national level. The Punjabis are a heterogeneous group consisting of different tribes, clans (Urdu: برادری) and communities. In the Pakistani Punjab, these tribes are associated with traditional occupations, such as blacksmiths or craftsmen, rather than rigid social stratification. The Punjabi dialects spoken in the province are Majhi (standard), Saraiki and Hindko. Saraiki is mostly spoken in South Punjab, while Pashto is spoken in some parts of North-West Punjab, particularly in Attock and Mianwal districts.

**Question 0**

What is the main language of Punjab?

**Question 1**

How do you spell Punjabi?

**Question 2**

What is the largest ethnic group in Pakistan?

**Question 3**

What percentage of people in each district of Punjab speak Punjabi as their mother tongue?

**Question 4**

Where is Saraiki usually spoken?

**Question 5**

Which language is officially recognised in Punjab?

**Question 6**

Punjabi is the mother tongue of less than what percentage of the population?

**Question 7**

Which province has Urdu as its main language?

**Question 8**

What is the standard form of an urdu?

**Question 9**

What is primarily distributed by social strata?

**Text number 15**

The Punjab government is a provincial government within the federal structure of Pakistan, based in Lahore, the capital of the Punjab province. The Punjab Provincial Assembly elects the Chief Minister of Punjab (CM), who is the head of the Punjab, Pakistan's provincial government. The current Chief Minister is Shahbaz Sharif, who became Chief Minister of Punjab after the Governor's rule from 25 February 2009 to 30 March 2009. He was then re-elected in elections held on 11 May 2013. The Punjab Provincial Assembly is a unicameral legislature of elected representatives of the Punjab province, located in Lahore, East Pakistan. It was established under Article 106 of the Constitution of Pakistan and has a total of 371 seats, of which 66 are reserved for women and eight for non-Muslims.

**Question 0**

Who chooses the Prime Minister?

**Question 1**

In which year did Sharif become Prime Minister?

**Question 2**

When was Sharif re-elected Prime Minister?

**Question 3**

What kind of legislative body is a county government?

**Question 4**

How many seats are there for the county days?

**Question 5**

Who elects the members of the Provincial Assembly?

**Question 6**

When was the county council elected?

**Question 7**

In which elections was Sharif ousted from office?

**Question 8**

How many seats are reserved for Muslims?

**Question 9**

Which article created the Prime Minister?

**Text number 16**

Punjab has the largest economy in Pakistan, and the largest share of the country's GDP. The province's economy has quadrupled since 1972. It accounted for 54.7% of Pakistan's GDP in 2000 and 59% in 2010. In particular, it dominates the service and agricultural sectors of the Pakistani economy. Its share ranges from 52.1% to 64.5% in the services sector and from 56.1% to 61.5% in the agriculture sector. It is also a major labour provider, with the largest pool of professional and highly skilled (technically trained) labour in Pakistan. It is also a dominant player in manufacturing, although its dominance is not as great, as its share has historically ranged from a low of 44% to a high of 52.6%. In 2007, Punjab grew at a rate of 7.8%, while between 2002-2003 and 2007-2008, its economy grew at 7-8% per annum, and between 2008-2009 it grew at 6%, compared to 4% for Pakistan's GDP growth.

**Question 0**

How much has Punjab's economy grown since 1972?

**Question 1**

How much of Pakistan's GDP came from Punjab in 2000?

**Question 2**

How much of Pakistan's GDP came from Punjab in 2010?

**Question 3**

What workforce does Punjab offer?

**Question 4**

How much did Punjab's economy grow in 2008-2009?

**Question 5**

How has Pakistan's economy changed since 1972?

**Question 6**

How much of Pakistan's economy is agriculture?

**Question 7**

What is the smallest economy in Pakistan?

**Question 8**

What percentage of Punjab's manufacturing industry was in 2007?

**Question 9**

What was Pakistan's total GDP growth in 2002-2003?

**Text number 17**

Despite its lack of a coastline, Punjab is Pakistan's most industrialised province, with manufacturing industries producing textiles, sports equipment, heavy machinery, electrical equipment, surgical instruments, vehicles, car parts, metals, sugar mills, aircraft, cement, agricultural machinery, bicycles and rickshaws, floor coverings and processed foods. In 2003, the province produced 90% of Pakistan's paper and board, 71% of fertilisers, 69% of sugar and 40% of cement.

**Question 0**

What geographical feature does Punjab not have?

**Question 1**

What medical product does Punjab manufacture?

**Question 2**

What transport products does Punjab produce?

**Question 3**

How much of Pakistan's paper products are made in Punjab?

**Question 4**

How much of Pakistan's sugar is produced in Punjab?

**Question 5**

Which province has a long coastline?

**Question 6**

What percentage of textiles does Punjab export?

**Question 7**

What percentage of Pakistan's sugar factories are located in Punjab?

**Question 8**

What type of machines does Punjab not produce?

**Question 9**

What percentage of agricultural machinery is manufactured in Punjab?

**Text number 18**

Despite the tropical wet and dry climate, extensive irrigation makes it a rich agricultural area. Its irrigation canal system, set up by the British, is the largest in the world. Wheat and cotton are the largest crops. Other crops include rice, sugar cane, millet, maize, oilseeds, pulses, vegetables and fruits such as quinoa. Livestock and poultry production is also important. Despite past hostilities, the rural farming population of Punjab still uses the Hindu calendar for sowing and harvesting.

**Question 0**

What is the climate like in Punjab?

**Question 1**

Who built the Punjab irrigation system?

**Question 2**

What are the major crops in Punjab?

**Question 3**

What are the secondary crops in Punjab?

**Question 4**

What calendar do Punjabi farmers use?

**Question 5**

Which calendar is no longer used by Punjab facilities?

**Question 6**

For whom did Punjab create the irrigation system?

**Question 7**

Which species in Punjab has the largest harvest in the world?

**Question 8**

What is the name of a vegetable?

**Question 9**

What features of Punjab's climate make it perfect for agriculture?

**Text number 19**

In June 2012[update] Pakistan's electricity problems were so severe that there were violent riots in Punjab. According to protesters, the blackouts deprived cities of electricity for 20-22 hours a day, leading to businesses going bankrupt and making life extremely difficult. In Gujranwala, Toba Tek Singh, Faisalabad, Sialkot, Bahawalnagar and Khanewal district communities saw widespread rioting and violence on Sunday 17 June 2012, with several MPs' houses attacked and the offices of regional energy suppliers Fesco, Gepco and Mepco looted or attacked.

**Question 0**

What was the problem that caused the riots in June 2012?

**Question 1**

How long were cities without electricity in June 2012?

**Question 2**

Where were the riots in June 2012?

**Question 3**

Which energy company offices were attacked by rioters?

**Question 4**

When was Pakistan's electricity problem solved?

**Question 5**

How long did the riots on 17 June 2012 last?

**Question 6**

In which city are Fesco offices located?

**Question 7**

Which energy supplier is rioting?

**Question 8**

Who was responsible for breaking the load?

**Text number 20**

The mosque's structure is simple and reflects openness. Punjabi mosques and mausoleums are decorated with calligraphic inscriptions of the Koran. The inscriptions on the bricks and tiles of the mausoleum of Shah Rukn-e-Alam in Multan (1320 AD) are excellent examples of architectural calligraphy. The earliest existing building in South Asia with enamelled tiles is the tomb of Shah Yusuf Gardez (1150 AD) in Multan. The tomb of Sheikh Musa Ahangar in Lahore, with its brilliant blue dome, is an example of 16th century tile work. The tile work of Emperor Shah Jahan is richer and more elaborate. The wall of the Lahore Fortress in the picture is the last tiled wall in the world.

**Question 0**

What kind of inscriptions adorn Punjabi tombs?

**Question 1**

When did Rukn-e-Alam die?

**Question 2**

When did Gardezi die?

**Question 3**

When was the tomb of Ahangar built?

**Question 4**

What colour tile was used in Ahangar's tomb?

**Question 5**

Where does the structure of a mosque come from?

**Question 6**

What colour is Shah Yusuf Gardez's grave?

**Question 7**

When did Emperor Shah Jahan live?

**Question 8**

Where was Emperor Shah Jahan buried?

**Question 9**

Who built the Lahore Fortress?

**Text number 21**

Masses at the shrines of Sufi saints are called urs. They usually commemorate the anniversary of the saint's death. On these occasions, devotees gather in large numbers to honour the memory of the saint. Soul-inspiring music is played and devotees dance in rapture. The music on these occasions is mainly folk and evocative. It is part of folk music through mystical messages. The main urs are: Hazrat Sultan Bahun urs in Jhang, Hazrat Shah Jewnan urs in Jhang, Hazrat Mian Mirin urs in Lahore, Baba Farid Ganj Shakari urs in Pakpattan, Hazrat Bahaudin Zakrian urs in Multan, Sakhi Sarwar Sultan's urs in Dera Ghazi Khan, Shah Hussain's organ in Lahore, Hazrat Bulleh Shah's organ in Kasur, Hazrat Imam Bari (Bari Shah Latif)'s organ in Rawalpindi Islamabad and Shah Inayar Qadri's (Bulleh Shah murrshad) organ in Lahore.

**Question 0**

What are the urs?

**Question 1**

When will urs be held?

**Question 2**

What kind of music is played at urs?

**Question 3**

Where is the Bukshi Shrine?

**Question 4**

Where is the Sanctuary of Zakria?

**Question 5**

What are the Sufi saints called?

**Question 6**

Where do the devotees come from?

**Question 7**

What do the saints do in urs?

**Question 8**

Who created the mysterious messages?

**Question 9**

Who started urs?

**Text number 22**

Shows and annual horse shows are held in all districts and a national horse and cattle show is held in Lahore under the auspices of an official patron. The National Horse and Cattle Show in Lahore is the largest festival of sports, exhibitions and livestock competitions. Apart from encouraging and supporting agricultural products and livestock through agricultural and livestock exhibitions, it is also a colourful document of the province's rich cultural heritage and its strong rural roots.

**Question 0**

What is the biggest festival in Punjab?

**Question 1**

Where is the National Horse and Cattle Show?

**Question 2**

What happens at the National Horse and Cattle Show?

**Question 3**

In which region are there no exhibitions?

**Question 4**

What kind of competition does the biggest festival not have?

**Question 5**

Which festival is damaging the rural roots of the province?

**Question 6**

What is the Lahore Festival preventing?

**Text number 23**

The province has several historical sites, including Shalimar Gardens, Lahore Fortress, Badshah Mosque, Rohtas Fortress and the ruins of the ancient city of Harrapa. The Anarkali market and Jahangir Tomb are notable in Lahore, as is the Lahore Museum, while the ancient city of Taxila in the northwest was once a major centre of Buddhist and Hindu influence. There are several important Sikh shrines in the province, including the birthplace of the first guru, Guru Nanak (who was born in Nankana Sahib). The province has a few famous hill stations, including Murree, Bhurban, Patriata and Fort Munro.

**Question 0**

Which famous tomb is in Lahore?

**Question 1**

Where was Nanak born?

**Question 2**

Who was the first sikhi guru?

**Question 3**

What are the famous hills of Punjab?

**Question 4**

Which famous mosque is in Punjab?

**Question 5**

Where are the Jahangir Gardens?

**Question 6**

In which city are there Sihk shelters?

**Question 7**

Taxila has become an important centre for what in modern times?

**Question 8**

Near which city is Murree Hill located?

**Question 9**

Who was born in Harappa?

**Text number 24**

Punjabi poets include Sultan Bahu, Bulleh Shah, Mian Muhammad Baksh and Waris Shah, and folk singers such as Inayat Hussain Bhatti and Tufail Niazi, Alam Lohar and Sain Marna, Mansoor Malangi, Allah Ditta Lona wala, Talib Hussain Dard, Attaullah Khan Essa Khailwi, Gamoo Tahliwala, Mamzoo Gha-lla, Akbar Jat, Arif Lohar, Ahmad Nawaz Cheena and Hamid Ali Bela. In the composition of classical ragas, there are such masters as Malika-i-Mauseequi (Queen of Music) Roshan Ara Begum, Ustad Amanat Ali Khan, Salamat Ali Khan and Ustad Fateh Ali Khan. Alam Lohar has made a significant contribution to folklore and Punjabi literature by being a highly influential Punjabi folk singer from 1930 to 1979.

**Question 0**

Who are the famous Punjabi poets?

**Question 1**

What is Allah Ditta Lona Vala's career?

**Question 2**

Who is the "queen of music"?

**Question 3**

When was Alam Lohar an important Punjabi folk singer?

**Question 4**

When was Sultan Bahu popular?

**Question 5**

What was Ustad Amanat Ali Khan's nickname?

**Question 6**

Which poet was the most prolific between 1930 and 1979?

**Question 7**

When was Alam Lohar born?

**Question 8**

Folk singers created a classic what?

**Text number 25**

However, popular music, especially ghazals and folk songs, which are likely to appeal, are known by the names of Mehdi Hassan, Ghulam Ali, Nur Jehan, Malika Pukhraj, Farida Khanum, Roshen Ara Begum and Nusrat Fateh Ali Khan. Punjabi folk songs and dances reflect a wide range of moods: rainy, sowing and harvest times. Luddi, Bhangra, and Sammi describe the joy of life. The love legends of Heer Ranjha, Mirza Sahibani, Sohni Mahenwal and Saiful Mulk are sung in different styles.

**Question 0**

What kind of music does Malika Pukhraj play?

**Question 1**

What do Punjabi folk songs often reflect?

**Question 2**

Who sings of the joy of life?

**Question 3**

What is Heer Ranjha singing about?

**Question 4**

What kind of music does Roshen Ara Begum play?

**Question 5**

What is the name of the singer who sings songs about rain?

**Question 6**

Who wrote songs in the style of Sammi?

**Question 7**

What kind of songs are limited to a certain number of moods?

**Question 8**

What is generally less popular with the public?

**Question 9**

Which songs use the same style?

**Document number 436**

**Text number 0**

Richmond is located on the James River falls, 71 km west of Williamsburg, 106 km east of Charlottesville and 158 km south of Washington. Surrounded by Henrico and Chesterfield counties, the city is located at the intersection of Interstates 95 and 64, and is surrounded by Interstate 295 and Virginia State Route 288. Major neighborhoods include Midlothian to the southwest, Glen Allen to the north and west, Short Pump to the west, and Mechanicsville to the northeast.

**Question 0**

How many miles east of Richmond is Williamsburg?

**Question 1**

How many kilometres west of Charlottesville is Richmond?

**Question 2**

Which direction from Washington DC would you arrive in Richmond?

**Question 3**

What is the southwest suburb of Richmond?

**Question 4**

Where is Short Pump located in relation to Richmond?

**Text number 1**

Richmond had been an important village in the Powhatan League, and was settled briefly by English settlers from Jamestown in 1609 and 1610-1611. The present town of Richmond was founded in 1737. It became the capital of the Virginia Colony and Territory in 1780. During the Revolutionary War, the city witnessed several significant events, including Patrick Henry's "Give me liberty or give me death" speech in 1775 at St John's Church and the adoption of the Virginia Statute of Religious Freedom written by Thomas Jefferson. During the American Civil War, Richmond served as the capital of the American Confederacy. The city entered the 20th century with one of the world's first successful electric streetcar systems and the Jackson Ward district, a national centre of African-American commerce and culture.

**Question 0**

What nationality were the people who settled Richmond in 1609?

**Question 1**

In what year was the current city of Richmond founded?

**Question 2**

What famous speech did Patrick Henry give in Richmond?

**Question 3**

In which building did Patrick Henry make his famous speech?

**Question 4**

Who was the author of Virginia's religious freedom statute?

**Text number 2**

Richmond's economy is primarily based on law, finance and government, with federal, state and local government offices and major law and banking firms located in the downtown area. The city is home to both the US Court of Appeals for the Fourth Circuit, one of 13 US Courts of Appeals, and the Federal Reserve Bank of Richmond, one of 12 US Federal Reserve Banks. Dominion Resources and MeadWestvaco, Fortune 500 companies, are headquartered in the city, and the others in the metropolitan area.

**Question 0**

Besides law and finance, what is an important part of Richmond's economy?

**Question 1**

Which US Court of Appeals circuit is located in Richmond?

**Question 2**

How many appellate courts are there in the United States?

**Question 3**

How many central banks are there?

**Question 4**

Besides MeadWestvaco, which Fortune 500 company is located in Richmond?

**Text number 3**

In 1775, Patrick Henry delivered his famous "Give me liberty or give me death" speech at St. John's Church in Richmond, which was crucial in deciding Virginia's participation in the First Continental Congress and setting the course for revolution and independence. On 18 April 1780, the state capital was moved from the colonial capital of Williamsburg to Richmond to allow the growing population of western Virginia to live more centrally and to insulate the capital from British invasion. The latter motive proved futile, and in 1781 British troops burned Richmond under the command of Benedict Arnold, causing Governor Thomas Jefferson to flee while Virginia militia under Sampson Mathews defended the city.

**Question 0**

Where did Patrick Henry's famous speech persuade Virginians to send their delegates?

**Question 1**

What was the capital of Virginia before Richmond?

**Question 2**

Which general led the troops who burned Richmond?

**Question 3**

Who led the militia that defended Richmond?

**Question 4**

Who was the Governor of Virginia in 1781?

**Text number 4**

Richmond recovered quickly from the war, and by 1782 it was once again a thriving city. In 1786, the Virginia Religious Freedom Act (drafted by Thomas Jefferson) was passed in Richmond's temporary capital, laying the foundation for the separation of church and state that was a key factor in the development of religious freedom in the United States. With the help of Charles-Louis Clérisseau, Thomas Jefferson designed a permanent home for the new government, the Virginia State Capitol, which was completed in 1788.

**Question 0**

Who helped Jefferson design the Virginia State Capitol?

**Question 1**

What year was the Virginia State Capitol completed?

**Question 2**

What was the capital of Virginia around 1786?

**Question 3**

Which important document was written by Thomas Jefferson in 1786?

**Question 4**

In what year could Richmond first be said to have recovered from the devastation of the American Revolution?

**Text number 5**

After the American Revolutionary War, Richmond developed into a major industrial centre. To facilitate the transfer of cargo from flat-bottomed boats above the fall line to ocean-going vessels below, George Washington helped design the James River and Kanawha River Canal in the 1700s to bypass Richmond's rapids, with the intention of providing a water route across the Appalachians to the Kanawha River. The canal boatmen's legacy is represented by the figure in the center of the city's flag. Thanks to this and the abundant availability of hydroelectric power provided by the falls, Richmond became home to some of the largest manufacturing facilities in the country, including railroads and flour mills, the largest of their kind in the South. Opposition to the slave trade grew by the mid-19th century; in one famous case in 1848, Henry "Box" Brown made history by nailing himself to a small box and transporting it from Richmond to escape slavery in Philadelphia, Pennsylvania, where anti-slavery activists lived.

**Question 0**

Which artificial body of water was partly designed by George Washington?

**Question 1**

Where was the canal planned by Washington supposed to carry water?

**Question 2**

To which city was Henry Brown sent as cargo?

**Question 3**

What was Henry Brown's nickname?

**Question 4**

What kind of economic centre was Richmond after the American Revolution?

**Text number 6**

On April 17, 1861, five days after the Confederate attack on Fort Sumter, the House voted to secede from the United States and join the Confederacy. The formal decision was made in May, when the Confederacy promised to move its national capital to Richmond. The city was located at the end of a long supply line, which made it somewhat difficult to defend, although supplies continued to flow into the city by canal and wagon for years to come, as the city was protected by the Army of Northern Virginia and arguably the best troops and commanders in the Confederacy. It became a prime target for Union armies, especially in the campaigns of 1862 and 1864-5.

**Question 0**

On what day did Virginia secede from the Union?

**Question 1**

Which state did Virginia join after leaving the Union?

**Question 2**

Which year 1864-5 was specifically associated with the US military expeditions to Richmond?

**Text number 7**

In addition to Virginia and the Confederate government offices and hospitals, a railroad hub and one of the largest slave markets in the South, Richmond was home to the Confederacy's largest factory, the Tredegar Iron Works, which manufactured artillery and other war materiel, including 723 tons of armor plating that covered the CSS Virginia, the world's first ironclad used in war, and much of the Confederacy's heavy artillery. The Confederate Congress lived in the Virginia State Capitol with the Virginia General Assembly, and the Confederate executive mansion, the "Confederate White House," was located two blocks away. In late June and early July 1862, the Seven Days' Fight ensued, during which Union General McClellan threatened to take Richmond, but ultimately failed.

**Question 0**

What was the name of the largest factory in the American Confederacy?

**Question 1**

What was the name of the first ironclad seen in battle?

**Question 2**

What is another name for the Confederate leadership mansion?

**Question 3**

How far from the Confederate Executive Mansion was the Virginia State Capitol?

**Question 4**

Who commanded the Union armies in the Seven Days' War?

**Text number 8**

Three years later, at the end of March 1865, the Confederate capital was undefended. On March 25, Confederate General John B. John John Gordon's desperate attack on Stedman's Fort east of St. Petersburg failed. On April 1, General Philip Sheridan, tasked with blocking the Southside Railroad, confronted brigades commanded by George Pickett at the Five Forks crossing, crushed them, took thousands of prisoners, and encouraged General Grant to order a general advance. When the Union Sixth Corps broke through Confederate lines on the Boydton Plank Road south of Petersburg, Confederate casualties exceeded 5,000, about one-tenth of Lee's defending army. General Lee then informed Jefferson Davis that he intended to evacuate Richmond.

**Question 0**

Where was St Petersburg located in relation to Ford Stedman?

**Question 1**

What was the proportion of General Lee's army of 5,000 men?

**Question 2**

By what route did the US Army's Sixth Army Division crush the Confederate line?

**Question 3**

Which general led the attack on Fort Stedman?

**Question 4**

In what month in 1865 was Richmond no longer considered defensible?

**Text number 9**

Davis and his cabinet left the city by train the same night government officials burned documents and departing Confederate troops burned tobacco and other warehouses to deny their contents to the victors. On April 2, 1865, General Godfrey Weitzel, commander of the 25th Army Corps of the United States Colored Troops, accepted the surrender of the city from the mayor and a group of the remaining leading citizens. Union troops eventually managed to stop the raging fires, but about 25% of the city's buildings were destroyed...

**Question 0**

What was in the warehouses that the Allies burned when they evacuated Richmond?

**Question 1**

Which general received the surrender of Richmond?

**Question 2**

On what day did the Confederacy cede Richmond to the Union?

**Question 3**

How did Davis leave Richmond?

**Question 4**

How much of Richmond was destroyed by fire after the Confederate evacuation?

**Text number 10**

President Abraham Lincoln visited General Grant in St. Petersburg on April 3 and left the next day by ship for Richmond, while Jefferson Davis tried to organize his Confederate government in Danville. Lincoln met with Confederate Assistant Secretary of State John A. Campbell and gave him a message urging Virginia legislators to end the rebellion. After Campbell circulated the message to Confederate legislators as a possible end to the Emancipation Proclamation, Lincoln withdrew his offer and ordered General Weitzel to block the meeting of Confederate state legislators. Union troops killed, wounded or captured 8,000 Confederate soldiers at Saylor's Creek, southwest of St. Petersburg, on April 6. General Lee continued to reject General Grant's surrender proposal until Sheridan's infantry and cavalry appeared in front of his retreating army on April 8. He surrendered at Appomattox Court House the next morning with the remaining 10,000 or so of his troops. Jefferson Davis retreated to North Carolina and further south. when Lincoln rejected the surrender terms negotiated by General Sherman and envoys from North Carolina Governor Zebulon Vance, which did not mention slavery. Davis was captured on May 10 near Irwinville, Georgia, and taken back to Virginia, where he was charged with treason and imprisoned for two years at Fort Monroe until released on bail.

**Question 0**

What was the day before the day Lincoln entered Richmond?

**Question 1**

How many soldiers did Lee have left when he surrendered?

**Question 2**

Which state did Davis travel to after Lee's surrender?

**Question 3**

In which structure did Lee surrender to Grant?

**Question 4**

How many years did Davis spend at Fort Monroe?

**Text number 11**

A decade after the smouldering ruins of the Civil War, Richmond re-emerged as an economic powerhouse with iron-front brick houses and massive brick factories. Canal traffic peaked in the 1860s and gradually gave way to railroads, making Richmond a major railroad crossroads, eventually hosting the world's first triple railroad crossing. Tobacco storage and processing continued to play an important role, helped by the world's first cigarette rolling machine, invented by James Albert Bonsack of Roanoke in 1880/81. Richmond's revival was helped by the Richmond Union Passenger Railway, the first successful electric trolley car system in the United States. The trolley system, designed by electric power pioneer Frank J. Sprague, opened its first line in 1888, and electric tram lines quickly spread to other cities across the country. Sprague's system used overhead wires and a carriage pole to collect power, and the carriages were fitted with electric motors. Richmond switched from streetcars to buses in May 1947 and completed the transition on 25 November 1949.

**Question 0**

Which mode of transport took the place of the canals?

**Question 1**

What was the first railway crossing built in Richmond?

**Question 2**

Who was the inventor of the cigarette rolling machine?

**Question 3**

What city is James Bonsack from?

**Question 4**

What was the name of the first American electric trolley system?

**Text number 12**

By the early 1900s, the city's population had grown to 85,050 in an area of 5 square miles (13 km2), making it the most densely populated city in the southern United States. In 1900, according to the Census Bureau, 62.1 percent of Richmond's population was white and 37.9 percent black. Freed slaves and their descendants created a thriving African-American business community, and the city's historic Jackson Ward was known as 'Black America's Wall Street'. In 1903, African-American businesswoman and financier Maggie L. Walker founded the St. Luke Penny Savings Bank and served as its first president and the first female bank president in the United States. Today, the bank is known as Consolidated Bank and Trust Company and is the oldest surviving African-American bank in the United States. Other figures of the time included John Mitchell Jr. In 1910, the former City of Manchester was incorporated into the City of Richmond, and in 1914 the city annexed Barton Heights, Ginter Park and Highland Park in Henrico County. In May 1914, Richmond became the headquarters of the Fifth District of the Federal Reserve Bank.

**Question 0**

How many people lived in Richmond in the early 1900s?

**Question 1**

How many square miles was Richmond in the early 1900s?

**Question 2**

What percentage of Richmond's population in 1900 was African American?

**Question 3**

What was the middle name of Jackson Ward of Richmond?

**Question 4**

Who was the first chairman of the St. Luke Penny Savings Bank?

**Text number 13**

Between 1963 and 1965, the city experienced a "downtown boom", which resulted in the construction of more than 700 buildings. In 1968, Virginia Commonwealth University was founded by the merger of Virginia Medical College and Richmond Professional Institute. In 1970, Richmond's boundaries were expanded southward by an additional 27 square miles (70 km2). After Chesterfield County had fought annexation for several years, more than 47,000 people who had previously been Chesterfield County residents were displaced within the city limits on January 1, 1970. In 1996, increasingly bitter tensions arose over a dispute over the placement of a statue of African-American Richmond native and tennis star Arthur Ashe next to the famous row of Civil War Confederate heroes statues on Monument Avenue. After several months of controversy, the bronze statue of Ashe was finally completed on July 10, 1996 on Monument Avenue, facing the opposite direction from the Confederate heroes.

**Question 0**

When did Richmond's so-called downtown boom end?

**Question 1**

How many buildings were built in Richmond during the downtown boom?

**Question 2**

What merged with the Richmond Vocational Institute to form Virginia Commonwealth University?

**Question 3**

In which direction did Richmond's boundaries expand in 1970?

**Question 4**

Which county residents did not want to join Richmond around 1970?

**Text number 14**

Richmond is located at 37°32′N 77°28′W / 37.533°N 77.467°W / 37.533; -77.467 (37.538, -77.462). According to the US Census Bureau, the city has a total area of 62 square miles (160 km2), of which 60 square miles (160 km2) is land and 2.7 square miles (7.0 km2) of that (4.3%) is water. The city is located in Virginia's Piedmont region, at the highest navigable point on the James River. The Piedmont region is characterized by relatively low, rolling hills and is situated between the low-lying Tidewater area above sea level and the Blue Ridge Mountains. Major water bodies in the area include the James River, the Appomattox River and the Chickahominy River.

**Question 0**

How many square miles is Richmond?

**Question 1**

How many square kilometres of Richmond is water?

**Question 2**

What percentage of Richmond is water?

**Question 3**

In which region of Virginia is Richmond located?

**Question 4**

What is a major river in the area near Richmond, along with the James and Chickahominy rivers?

**Text number 15**

Richmond's original street grid, laid out in 1737, covered the area between what is now Broad, 17th and 25th Streets and the James River. Modern Richmond's downtown is located a little further west, on the slopes of Shockoe Hill. Nearby neighborhoods include Shockoe Bottom, a historically significant and low-lying area between Shockoe Hill and Church Hill, and Monroe Ward, home to the Jefferson Hotel. Richmond's East End includes neighborhoods such as Church Hill, home to the rapidly rising Church Hill and St. John's Church, as well as poorer areas such as Fulton, Union Hill and Fairmont, and public housing projects such as Mosby Court, Whitcomb Court, Fairfield Court and Creighton Court, closer to Interstate 64. This is one of the most important neighborhoods in the city.

**Question 0**

Which district is located between Church and Shockoe Hill?

**Question 1**

Where is the Jefferson Hotel located in Richmond?

**Question 2**

Where is St John's Church in Richmond?

**Question 3**

What is Fairfield Court?

**Question 4**

What year was Richmond's street network first developed?

**Text number 16**

The area between Belvidere Street, Interstate 195, Interstate 95 and the river, which includes Virginia Commonwealth University, is socioeconomically and architecturally diverse. The Carver and Newtowne West neighborhoods north of Broad Street are demographically similar to the adjacent Jackson Ward, and Carver is experiencing some gentrification due to its proximity to VCU. The affluent area between Boulevard, Main Street, Broad Street and VCU, known as Fan, is home to Monument Avenue, an outstanding collection of Victorian architecture and many students. On the west side of the Boulevard is the Museum District, home to the Virginia Historical Society and the Virginia Museum of Fine Arts. South of the Downtown Expressway are Byrd Park, Maymont, Hollywood Cemetery, the predominantly black working-class Randolph neighborhood and white working-class Oregon Hill. Cary Street, between Interstate 195 and the Boulevard, is a popular commercial area known as Carytown.

**Question 0**

Which street is on the north side of Newtowne West?

**Question 1**

Along with Newtowne West, which district is Carver considered to have a comparable demographic?

**Question 2**

Which street in Richmond has a significant number of Victorian buildings?

**Question 3**

What part of Richmond is home to the Virginia Museum of Art?

**Question 4**

What is the main race of the Randolph district population?

**Text number 17**

The part of the city south of the James River is known as the Southside. Residential areas in the Southside area of the city range from the affluent and middle-class suburbs of Westover Hills, Forest Hill, Southampton, Stratford Hills, Oxford, Huguenot Hills, Hobby Hill and Woodland Heights, to the poor neighbourhoods of Manchester and Blackwell, the housing projects of Hillside Court and the run-down Jefferson Davis Highway commercial corridor. Other Southside neighborhoods include Fawnbrook, Broad Rock, Cherry Gardens, Cullenwood and Beaufont Hills. Much of the Southside developed as a suburban part of Chesterfield County before it was annexed into Richmond, most notably in 1970.

**Question 0**

What is the name of the part of Richmond south of the James River?

**Question 1**

What is the socio-economic class of Southside residents apart from the affluent?

**Question 2**

What are the major public housing projects in Southside?

**Question 3**

Which county was a significant part of Southside in before it was annexed by Richmond?

**Question 4**

What is the economic status of the Manchester borough of Richmond?

**Text number 18**

Richmond has a humid subtropical climate (Köppen Cfa), with hot and humid summers and generally cool winters. The mountains to the west act as a partial barrier to cold winter continental air currents; the Arctic air is delayed long enough to change, then warms further as it descends as it approaches Richmond. The open waters of the Chesapeake Bay and Atlantic Ocean contribute to the humid summers and mild winters. The coldest weather is generally from late December to early February, with a daily average temperature in January of 37.9°F (3.3°C) and an average of 6.0 days at or below freezing. The central areas are on the border of USDA hardiness zones 7B and 8A, and temperatures rarely fall below -18°C (0°F), with the last frost on January 28, 2000, when temperatures were -18°C (-1°F). July's daily average temperature is 79.3 °F (26.3 °C), with high temperatures of 90 °F (32 °C) or more about 43 days a year; temperatures of 100 °F (38 °C) are not uncommon, but do not occur every year. Temperature extremes have ranged from -12 °F (-24 °C) on January 19, 1940 to 107 °F (42 °C) on August 6, 1918.[a]

**Question 0**

What is the Richmond Köppen climate rating?

**Question 1**

How would you describe the winters in Richmond?

**Question 2**

What geographical feature prevents cold inland air from reaching Richmond?

**Question 3**

What month of the year does Richmond's coldest weather typically end?

**Question 4**

How many days a year does the temperature in Richmond rise above 32 degrees?

**Text number 19**

Rainfall is fairly evenly distributed throughout the year. However, dry periods lasting several weeks do occur, especially in autumn, when long periods of pleasant, mild weather are more common. Monthly totals vary considerably from year to year, so no single month can be assumed to be normal. Snow has fallen in seven of the twelve months. Snowfall of at least 7.6 cm (3 inches) in a 24-hour period occurs on average once a year. However, the annual snowfall is generally light, averaging 27 cm (10.5 inches) over the season. Snow usually stays on the ground for only one or two days at a time, but in 2010 it stayed on the ground for 16 days (30 January to 14 February). Ice storms (freezing rain or ice) are not uncommon, but they are rarely severe enough to cause significant damage.

**Question 0**

What time of year is Richmond most likely to experience droughts?

**Question 1**

How many times does it snow 7.6 centimetres or more in a 24-hour period in Richmond in a year?

**Question 2**

How many centimetres of snow falls in Richmond in autumn?

**Question 3**

During which year in 2010 did the snowfall in Richmond stay on the ground for a considerable period of time?

**Question 4**

What kind of ice storms sometimes hit Richmond?

**Text number 20**

The James River flows into Richmond, where flooding can occur in any month of the year, with the highest in March and the lowest in July. Hurricanes and tropical storms have caused most of the flooding in the summer and early autumn. Hurricanes near Richmond have produced record rainfall. In 1955, three hurricanes brought record rainfall to Richmond in six weeks. The most notable of these were Hurricane Connie and Hurricane Diane, which brought heavy rainfall every five days. In 2004, the downtown area suffered extensive flood damage when the remnants of Hurricane Gaston caused up to 300 millimetres (12 inches) of rainfall.

**Question 0**

What is the most likely month for James to flood into Richmond?

**Question 1**

In which month is the James least likely to flood?

**Question 2**

In 1955, Richmond was hit by three hurricanes in how many weeks?

**Question 3**

Which two hurricanes occurred within a week of each other in 1955?

**Question 4**

Which hurricane hit Richmond in 2004?

**Text number 21**

At the 2000 census, the city was home to 197 790 people, 84 549 households and 43 627 families. The population density was 3 292.6 people per square mile (1 271.3/km²), with 92 282 dwellings and an average density of 1 536.2 dwellings per square kilometre (593.1/km²). The racial composition of the city was 38.3% white, 57.2% African American, 0.2% Native American, 1.3% Asian, 0.1% Pacific Islander, 1.5% other races, and 1.5% bi-racial or multi-racial. Hispanics or Latinos made up 2.6% of the population.

**Question 0**

How many families lived in Richmond in 2000?

**Question 1**

How many people lived per square kilometre in Richmond in 2000?

**Question 2**

What percentage of Richmond's population in 2000 was Pacific Islander?

**Question 3**

What was Richmond's largest breed group in 2000?

**Question 4**

What percentage of Richmond residents were multiracial in 2000?

**Text number 22**

In the late 1980s and early 1990s, Richmond saw a sharp rise in crime in general, and in the number of murders in the city in particular. There were 93 murders in the city in 1985, with a murder rate of 41.9 murders per 100,000 residents. Over the next decade, the city's homicide rate increased significantly. In 1990, there were 114 murders, with a homicide rate of 56.1 homicides per 100 000 inhabitants. In 1995, there were 120 murders, with a homicide rate of 59.1 murders per 100,000 population, one of the highest in the United States.

**Question 0**

What crime increased in Richmond during the 1980s?

**Question 1**

How many people were murdered in Richmond in 1985?

**Question 2**

How many people per 100 000 were murdered in Richmond in 1990?

**Question 3**

How many murders took place in Richmond in 1995?

**Text number 23**

Richmond has several historic churches. Due to its English colonial history, Richmond has several notable Anglican/Episcopal churches, including Monumental Church, St. Paul's Episcopal Church and St. John's Episcopal Church. Methodists and Baptists made up another part of the early churches, and the First Baptist Church of Richmond was the first of these, founded in 1780. In the Reformed church tradition, the first Presbyterian church in the City of Richmond was First Presbyterian Church, established on June 18, 1812. On February 5, 1845, the Second Presbyterian Church of Richmond was established, a historic church attended by Stonewall Jackson, the first Gothic building built in Richmond, and the first gas-lighted church. St. Peter's was dedicated and became Richmond's first Catholic church on May 25, 1834. The city is also home to the historic Sacred Heart Cathedral, the mother church of the Roman Catholic Diocese of Richmond.

**Question 0**

What is the oldest Presbyterian church in Richmond?

**Question 1**

Who was a prominent parishioner of the Second Presbyterian Church?

**Question 2**

What was the architectural style of the Second Presbyterian Church?

**Question 3**

On what day was Richmond's oldest Catholic church opened?

**Question 4**

In what year was the first Baptist church in Richmond founded?

**Text number 24**

Richmond's first Jewish congregation was Kahal Kadosh Beth Shalom. Kahal Kadosh Beth Shalom was the sixth congregation in the United States. By 1822, members of K.K. Beth Shalom were worshipping in Virginia's first synagogue building. Eventually they merged with a branch of Beth Shalom, Congregation Beth Ahabah. There are two Orthodox synagogues in Virginia, Keneseth Beth Israel and Chabad of Virginia. The region has an Orthodox K-12 school system known as the Rudlin Torah Academy, which includes a post-secondary program. There are two Conservative synagogues, Beth El and Or Atid. There are three Reform synagogues, Bonay Kodesh, Beth Ahabah and Or Ami. In addition to these religious congregations, there are several other Jewish charitable, educational and social service institutions serving the Jewish and non-Jewish communities. These include the Weinstein Jewish Community Center, Jewish Family Services, the Jewish Community Federation of Richmond and the Richmond Jewish Foundation.

**Question 0**

Besides the Chabad of Virginia, what is the other Orthodox synagogue in Richmond?

**Question 1**

At which grade levels does the Rudlin Torah Academy work?

**Question 2**

To which sect of Judaism does the Rudlin Torah belong?

**Question 3**

What are the names of Richmond's Conservative synagogues?

**Question 4**

How many Reform synagogues are there in Richmond?

**Text number 25**

There are currently seven masjids in the Greater Richmond area, with three more under construction to cater for the growing Muslim population, the first of which is Masjid Bilal. East End Muslims organised themselves in the 1950s under the Nation of Islam (NOI). They met at Temple 24 on North Avenue. After the NOI disbanded in 1975, mainstream Muslims who had joined Islam began meeting at the Shabaaz Restaurant on Nine Mile Road. By 1976, Muslims were meeting in a rented church. They tried to buy the church, but due to financial difficulties, the Muslims instead bought an old grocery store on Chimbarazoo Boulevard, the site of the current Masjid Bilal. Initially the place was called "Masjid Muhammad #24". It was not until 1990 that the Muslims renamed it "Masjid Bilal". Masjid Bilal was succeeded by the Islamic Center of Virginia, ICVA Masjid. ICVA was founded in 1973 as a non-profit, tax-exempt organization. Through aggressive fundraising, ICVA was able to purchase land on Buford Road. Construction of the new masjid began in the early 1980s. The five current masjids in the Richmond area are the Islamic Center of Richmond (ICR) at the west end, Masjid Umm Barakah on 2nd Street downtown, the Islamic Society of Greater Richmond (ISGR) at the west end, Masjidullah at the north end and Masjid Ar-Rahman at the east end.

**Question 0**

Where did members of the Richmond Nation of Islam originally meet?

**Question 1**

On which street is Masjid Bilal located?

**Question 2**

What was Masjid Bilal previously known as?

**Question 3**

In what year was the Islamic Center of Virginia founded?

**Question 4**

Which street is Shabaaz restaurant on?

**Text number 26**

Hinduism is particularly active in the suburbs of Henrico and Chesterfield. In 2011, there were around 6 000 families of Indian origin living in the Richmond area. Hindus are served by several temples and cultural centres. Two of the best known are the Cultural Center of India (CCI) on Iron Bridge Road in Chesterfield County and the Hindu Center of Virginia in Henrico County, which has received national acclaim and awards for being the first LEED-certified religious facility in the Commonwealth.

**Question 0**

How many families of Indian origin lived in or around Richmond in 2011?

**Question 1**

What does CCI stand for?

**Question 2**

In which county is CCI located?

**Question 3**

Which road is near CCI?

**Question 4**

Besides CCI, what is another Hindu gathering place near Richmond?

**Text number 27**

Law and finance have long been the driving forces of the economy. The city is home to the U.S. Court of Appeals for the Fourth Circuit, one of 13 U.S. courts of appeals, the Federal Reserve Bank of Richmond, one of 12 U.S. central banks, and the offices of international corporations such as Genworth Financial, CapitalOne, Philip Morris USA and numerous other banks and brokerage firms. Richmond is also home to four of the largest law firms in the US: Hunton & Williams, McGuireWoods, Williams Mullen and LeClairRyan. Another major Richmond law firm is Troutman Sanders, which merged with Richmond-based Mays & Valentine LLP in 2001.

**Question 0**

Which federal court is located in Richmond?

**Question 1**

Apart from Philip Morris and CapitalOne, what other major company is present in Richmond?

**Question 2**

What type of company is LeClairRyan?

**Question 3**

When did Troutman Sanders-Mays & Valentine LLP merge?

**Question 4**

How many central banks are there in the United States?

**Text number 28**

Richmond is home to the rapidly developing Virginia BioTechnology Research Park, which opened in 1995 as an incubator for biotechnology and pharmaceutical companies. Located adjacent to Virginia Commonwealth University's Medical College of Virginia (MCV) campus, the park currently houses more than 53,400 square feet of research, laboratory and office space for a wide variety of companies, research institutions, government laboratories and non-profit organizations. The United Network for Organ Sharing, which maintains the country's organ transplant waiting list, uses one of the buildings in the park. Philip Morris USA opened a $350 million research and development facility in the park in 2007. When fully developed, park officials expect to employ about 3,000 scientists, technicians and engineers.

**Question 0**

How many square metres of space is there in the Virginia BioTechnology Research Park?

**Question 1**

What does the United Network for Organ Sharing do?

**Question 2**

How much did the Philip Morris Research and Development facility that opened in the Virginia BioTechnology Research Park cost?

**Question 3**

When was the Philip Morris R&D facility opened?

**Question 4**

Which Virginia Commonwealth University campus is near the Virginia BioTechnology Research Park?

**Text number 29**

Richmond is also fast becoming known for its food culture, with several restaurants in Fan, Church Hill, Jackson Ward and elsewhere in the city gaining regional and national attention for their food. In August 2014, Richmond was named "The Next Great American Food City" by Departures magazine. Also in 2014, Southern Living magazine named three Richmond restaurants - Comfort, Heritage and The Roosevelt - among the "100 Best Restaurants in the South," and Metzger Bar & Butchery made the "Best New Restaurants: 12 To Watch" list. Craft beer and spirits production is also on the rise in the River City, with twelve microbreweries in the city, the oldest being Legend Brewery, established in 1994. Three distilleries, Reservoir Distillery, Belle Isle Craft Spirits and James River Distillery, were established in 2010, 2013 and 2014 respectively.

**Question 0**

Which magazine called Richmond "The Next Great American Food City"?

**Question 1**

What are the three best restaurants in Richmond according to Southern Living?

**Question 2**

How many microbreweries are there in Richmond?

**Question 3**

What was the first microbrewery established in Richmond?

**Question 4**

When was James River Distillery founded?

**Text number 30**

Richmond has also attracted attention from the film and television industry, with several high-profile films shot in the area in recent years, including Daniel Day-Lewis' third Oscar-winning Lincoln, National Geographic Channel's Killing Kennedy starring Rob Lowe and AMC's Turn starring Jamie Bell. In 2015, Richmond will be the main filming location for the upcoming PBS drama series Mercy Street, which will premiere in winter 2016. Several organizations, including the Virginia Film Office and the Virginia Production Alliance, and events such as the Richmond International Film Festival and the French Film Festival, continue to draw film and media supporters to the region.

**Question 0**

In which film shot in Richmond did Daniel Day-Lewis appear?

**Question 1**

Who appeared in the film Killing Kennedy?

**Question 2**

On which TV channel can you watch Turn?

**Question 3**

When will Mercy Street be shown on TV for the first time?

**Question 4**

Which channel is Killing Kennedy on?

**Text number 31**

In September 2007, MarketWatch named the Richmond metropolitan area the third best city for business, ranking it behind only the Minneapolis and Denver areas and slightly above Boston. The region is home to six Fortune 500 companies: electric utility Dominion Resources, CarMax, Owens & Minor, Genworth Financial, MeadWestvaco, McKesson Medical-Surgical and Altria Group. However, only Dominion Resources and MeadWestvaco are headquartered in Richmond; the others are located in neighboring Henrico and Hanover. In 2008, Altria moved its headquarters from New York City to Henrico County, adding another Fortune 500 company to Richmond's list. In February 2006, MeadWestvaco announced its move from Stamford, Connecticut, to Richmond in 2008 with the assistance of the Greater Richmond Partnership, a regional economic development organization that also helped attract Aditya Birla Minacs, Amazon.com and Honeywell International to the area.

**Question 0**

Where does Richmond rank among business cities according to MarketWatch?

**Question 1**

What was the fourth best city for business according to MarketWatch?

**Question 2**

What type of company is Dominion Resources?

**Question 3**

Where was Altria's headquarters located before moving to the Richmond area?

**Question 4**

Which company moved to Richmond from Connecticut?

**Text number 32**

However, other Fortune 500 companies not headquartered in the region have a significant presence. These include SunTrust Bank (headquartered in Atlanta), Capital One Financial Corporation (officially headquartered in McLean, Virginia, but incorporated in Richmond, with headquarters and most employees in the Richmond area), and pharmaceutical and medical device giant McKesson (headquartered in San Francisco). Capital One and Altria company Philip Morris USA are the two largest private employers in the Richmond area. DuPont has a Spruance Plant in South Richmond. UPS Freight, the trucking division of UPS, formerly known as Overnite Transportation, is headquartered in Richmond.

**Question 0**

Where is SunTrust Bank's head office located?

**Question 1**

In which city is McKesson headquartered?

**Question 2**

Who owns Philip Morris USA?

**Question 3**

Which DuPont plant is located in the Richmond area?

**Question 4**

What was the former name of UPS Freight?

**Text number 33**

Several of the city's major public museums are located close to the boulevard. On the boulevard proper are the Virginia Historical Society and the Virginia Museum of Art, which give their names to the area sometimes called the Museum District. Nearby on Broad Street is the Virginia Museum of Science, located in the neoclassical former Broad Street Union Station, built in 1919. Right next door is the Richmond Children's Museum and two blocks away is the Virginia Center for Architecture. Downtown, the Virginia Library and the Valentine Richmond History Center. The Virginia Holocaust Museum and the Old Dominion Railway Museum are nearby.

**Question 0**

What architectural style was Broad Street Union Station built in 1919?

**Question 1**

How far is the Virginia Center for Architecture from the Richmond Children's Museum?

**Question 2**

Where in Richmond is the Virginia Historical Society located?

**Question 3**

Which museum is next to the Virginia Museum of Science?

**Text number 34**

Richmond, the former capital of the Confederate States of America, is home to many American Civil War museums and battlefields. Near the riverfront are the Richmond National Battlefield Park Visitors Center and the American Civil War Center at Historic Tredegar, both located in the former buildings of the Tredegar Iron Works, where much of the war's munitions were manufactured. Court End, near the Virginia State Capitol, is home to the Confederate Museum and the Davis Mansion, also known as the Confederate White House, both of which display a wide variety of artifacts and materials from the era. The temporary home of former Confederate General Robert E. Lee remains in downtown Richmond on Franklin Street. The history of slavery and emancipation is also increasingly on display: a former slave trail along the river leads to Ancarrow's Boat Ramp and Historic Site, which has been enhanced with interpretive signage, and in 2007, a reconciliation statue was erected at Shockoe Bottom, with parallel statues erected in Liverpool and Benin to represent the points of the Triangle.

**Question 0**

Where is the Richmond National Battlefield Park Visitor Centre located in a former industrial site?

**Question 1**

Which government building is the Museum of the Confederacy near?

**Question 2**

What is the second name of the Davis estate?

**Question 3**

Which street in Richmond did General Lee live on for a while?

**Question 4**

Where are the reconciliation statues outside Richmond located?

**Text number 35**

Other historic attractions include St John's Church, where Patrick Henry gave his famous "Give me liberty or give me death" speech, and the Edgar Allan Poe Museum, which houses many of his writings and other artefacts from his life, especially during his time in the city as a child, student and successful writer. The John Marshall House, home of the former US Supreme Court Justice, is also located in the city centre and features many of his writings and artefacts from his life. Hollywood Cemetery is the burial place of two US presidents and many Civil War officers and soldiers.

**Question 0**

What was the occupant of John Marshall's house?

**Question 1**

How many US presidents are buried in Hollywood Cemetery?

**Question 2**

Who gave the speech that included the famous phrase "Give me liberty or give me death"?

**Question 3**

Where did Patrick Henry give his most memorable speech?

**Text number 36**

There are many monuments and memorials in the city, especially along Monument Avenue. Other memorials include the A.P. Hill Memorial, the Bill "Bojangles" Robinson Memorial in Jackson Ward, the Christopher Columbus Memorial near Byrd Park, and the Confederate Soldiers and Sailors Memorial on Libby Hill. Near Byrd Park is the famous World War I memorial Carillon, a 56-bell bell tower. The Virginia War Memorial, dedicated in 1956, is located overlooking the Belvedere River on Belvedere Place and is a memorial to Virginians who died in combat in World War II, the Korean War, the Vietnam War, the Gulf War, the Afghanistan War and the Iraq War.

**Question 0**

What was Bill Robinson's nickname?

**Question 1**

Near which park is there a monument dedicated to a person traditionally considered to be the discoverer of America?

**Question 2**

How many bells are on the First World War memorial clock?

**Question 3**

Which war's fallen were first commemorated on a Virginia war memorial?

**Question 4**

In which area is the Bill Robinson Memorial located?

**Text number 37**

Richmond has a significant arts community, some of which operates in formal publicly supported venues and others more DIY, such as local privately owned galleries and private music venues, non-profit arts organizations, or organic and tax-exempt art shops (e.g., home shows, busking events, touring folk music performances). This has led to tensions, as the City of Richmond City introduced an 'admission fee' to fund large-scale arts projects such as CentreStage, which has attracted criticism for funding civic initiatives at the expense of organic local culture. Traditional Virginia folk music, such as blues, country and bluegrass, also has a significant presence and plays a major role in the annual Richmond Folk Festival. The following is a list of Richmond's more formal arts institutions (businesses, theatres, galleries and other major venues):

**Question 0**

What major project was funded by the Richmond "admission tax"?

**Question 1**

Along with blues and bluegrass, what is one of Virginia's traditional folk music genres?

**Question 2**

What is an example of incorruptible art besides bus music and touring folk music performances?

**Text number 38**

Since 2015, a variety of murals by internationally renowned street artists have appeared across the city thanks to Art Whino and RVA Magazine's Richmond Mural Project and the RVA Street Art Festival. Artists who have produced works for the city as a result of these festivals include ROA, Pixel Pancho, Gaia, Aryz, Alexis Diaz, Ever Siempre, Jaz, 2501, Natalia Rak, Pose MSK, Vizie, Jeff Soto, Mark Jenkins, Etam Cru and local artists Hamilton Glass, Nils Westergard and El Kamino. Both festivals are expected to continue this year, with artists such as Ron English scheduled to produce work.

**Question 0**

Who is the Richmond-based muralist behind Hamilton Glass and El Camino?

**Question 1**

Which magazine has tried to attract internationally renowned muralists to Richmond?

**Question 2**

Which Richmond street mural event has brought muralists to the city?

**Text number 39**

Virginia, and Richmond in particular, has welcomed theatrical performances since the earliest days. From the early Shakespeare performances of Lewis Hallam in Williamsburg, the Richmond theatre moved into the pre-medieval period, when it was the principal performance venue of the colonial and early 19th century, hosting such famous American and English actors as William Macready, Edwin Forrest and the Booth family. Richmond's love of theatre continued into the 20th century with many amateur groups and regularly touring professional productions. A small renaissance or golden age began in the 1960s with the rise of professional dinner theatres and the promotion of theatre by the Virginia Museum. It reached its peak in the 1970s, when the Virginia Museum Theater (now Leslie Cheek) was incorporated as a permanent Equity company and Theatre IV was born, which continues to operate to this day.

**Question 0**

In which city did Lewis Hallam perform Shakespeare's plays?

**Question 1**

Which acting family in particular performed in 19th century Richmond?

**Question 2**

What is the Virginia Museum Theater known as today?

**Question 3**

During which decade was the Virginia Museum most instrumental in promoting theatre in Richmond?

**Text number 40**

Much of Richmond's early architecture was destroyed in an evacuation fire in 1865. An estimated 25% of all Richmond buildings were destroyed in this fire. Even less remains due to post-reconstruction construction and demolition. Despite this, Richmond has many historically significant buildings and neighborhoods. Richmond's colonial buildings, such as the Patteson-Schutte House and the Edgar Allan Poe Museum (Richmond, Virginia), both built before 1750, remain.

**Question 0**

What disaster destroyed many of Richmond's early buildings?

**Question 1**

What percentage of Richmond's buildings burned in one fire in 1865?

**Question 2**

Before what year was the Patterson-Schutten house built?

**Question 3**

What is the name of the era from which the Edgar Allan Poe Museum building dates?

**Text number 41**

Architectural classicism is strongly represented in all parts of the city, especially Downtown, Fan and the Museum District. Several important classical architects have designed buildings in Richmond. The Virginia State Capitol was designed by Thomas Jefferson and Charles-Louis Clérisseau in 1785. It is the second oldest continuously occupied state building in the United States (after Maryland) and was the first U.S. government building built in the neoclassical architectural style, setting the standard for other state and federal government buildings (such as the White House and the Capitol) in Washington, D.C. Robert Mills designed the Monumental Church on Broad Street. Next to it is the Egyptian Building, built in 1845 and one of the few Egyptian Revival buildings in the United States.

**Question 0**

Which state has the oldest capital building that has been in continuous use since its construction?

**Question 1**

What architectural style was used to design the Virginia State Capitol?

**Question 2**

Which major federal government buildings are designed in neoclassical style?

**Question 3**

What is the architectural style of the 1845 Egyptian building?

**Question 4**

Who were the designers of the Virginia State Capitol?

**Text number 42**

John Russell Pope's office designed Broad Street Station and the Branch House on Monument Avenue, a Tudor-style private residence that now serves as the Branch Museum of Architecture and Design. Broad Street Station (or Union Station), designed in the Beaux-Arts style, is no longer in operation, but now houses the Virginia Museum of Science. Main Street Station, designed by Wilson, Harris and Richards, has been restored to its original purpose. The Jefferson Hotel and Commonwealth Club were designed in the classic Beaux-Arts style by architects Carrère and Hastings. Many of the buildings on the University of Richmond campus, such as Jeter Hall and Ryland Hall, were designed by Ralph Adams Cram, best known for the Princeton University Chapel and St. John's Cathedral.

**Question 0**

What architectural styles were used in the design of the Branch House?

**Question 1**

Who designed the Branch House?

**Question 2**

What is the second name of Broad Street Station?

**Question 3**

What architectural style was used to design Union Station?

**Question 4**

Who designed the Commonwealth Club?

**Text number 43**

One of Richmond's most interesting architectural features is its cast iron architecture. The city is second only to New Orleans in the amount of cast iron work, and has a unique collection of cast iron porches, balconies, fences and ornaments. Richmond's position as a center of iron production contributed to its popularity in the city. At the peak of production in 1890, the city had 25 foundries employing nearly 3,500 metalworkers. This number is seven times the number of general construction workers employed in Richmond at the time, demonstrating the importance of its iron exports. Porches and fences in neighbourhoods such as Jackson Ward, Church Hill and Monroe Ward are particularly elaborate, often featuring decorative iron castings never made outside Richmond. In some cases, the cast iron was made for a single residential or commercial application.

**Question 0**

Which US city has the most cast iron architecture?

**Question 1**

In what year did iron production in Richmond reach its peak?

**Question 2**

How many more railroad workers than construction workers worked in Richmond in 1890?

**Question 3**

Besides Jackson and Monroe Wards, which neighborhood in particular has cast iron fences?

**Text number 44**

Richmond has several notable examples of different styles of modernism. Minoru Yamasaki designed the Federal Reserve Building, which dominates the downtown skyline. The architectural firm Skidmore, Owings & Merrill designed two buildings: the Virginia Library and the General Assembly offices in the Eighth and Main Buildings. Philip Johnson designed the WRVA building. The Rice House, a residential building on a private island on the James River, designed by Richard Neutra, remains Richmond's only true home of international style. The W.G. Harris residence in Richmond was designed by Landis Gores, a famous early modern architect and member of the Harvard Five. Other notable architects who have worked in the city include Rick Mather, I.M. Pei and Gordon Bunshaft.

**Question 0**

Who designed the Federal Reserve Building?

**Question 1**

Who designed the Assembly offices at the corner of Eighth and Main?

**Question 2**

What was the architectural style of the Rice House?

**Question 3**

Which university did Landis Gores join?

**Question 4**

Who did Landis Gores design a home for?

**Text number 45**

There are also parks on two large islands in the river: Belle Isle and Brown's Island. Belle Isle, once a Powhatan fishing village, a colonial horse race track and a Civil War prison camp, is the larger of the two islands, with many cycling trails and a small cliff face for rock climbing. You can walk around the island and still see many remnants of the Civil War prison camp, including an armoury and a gun emplacement used to suppress prisoner riots. Brown's Island is a smaller island and hosts a number of free outdoor concerts and festivals in the spring and summer, such as the weekly Friday Cheers concert series or the James River Beer and Seafood Festival.

**Question 0**

Which Native American tribe once lived on Belle Isle?

**Question 1**

During which conflict was Belle Isle used as a prison?

**Question 2**

Which is bigger between Brown's Island and Belle Isle?

**Question 3**

On which island is the James River Beer and Seafood Festival held?

**Question 4**

How often are Friday Shouts held on Brown's Island?

**Text number 46**

The city's two other major parks along the river are Byrd Park and Maymont, located near the Fan District. Byrd Park has a 1.6-kilometre (1.6-km) running track with exercise stations, a public dog park and several small lakes for small boats, as well as two monuments, a Buddha house and an amphitheatre. The park features a prominent World War I Memorial Carousel, built in 1926 to commemorate the fallen. Next to Byrd Park, Maymont is a 40-hectare (100-acre) Victorian mansion with a museum, formal gardens, a native wildlife exhibit, a nature centre, a carriage collection and a children's farm. Other parks in the city include Joseph Bryan Park Azalea Garden, Forest Hill Park (former site of Forest Hill Amusement Park) and Chimborazo Park (site of the National Battlefield Headquarters).

**Question 0**

What part of Richmond is Maymont near?

**Question 1**

How many kilometres long is the track at Byrd Park?

**Question 2**

How many memorials can you find in Byrd Park?

**Question 3**

In what year was the First World War Memorial Church built?

**Question 4**

What used to be on the current site of Forest Hill Park?

**Text number 47**

Richmond is not home to any professional sports teams, but since 2013, the Washington Redskins of the National Football League have held their summer training camp in the city. The city is also home to several smaller sports teams, including the Richmond Kickers of the USL Professional Division (third tier of American football) and the Richmond Flying Squirrels of Minor League Baseball's AA Eastern League (a subsidiary of the San Francisco Giants). The Kickers began playing in Richmond in 1993 and currently play at City Stadium. The Squirrels opened their first season at The Diamond on April 15, 2010. From 1966 to 2008, the Richmond Braves, a AAA team of Major League Baseball's Atlanta Braves, played in the city until the team moved to Georgia.

**Question 0**

What sport does the Washington Redskins play?

**Question 1**

What sport do Richmond Kickers compete in?

**Question 2**

Which Major League Baseball team are the Richmond Flying Squirrels affiliated with?

**Question 3**

What is the home ground of Richmond Kickers?

**Question 4**

Where did the Richmond Braves move to?

**Text number 48**

Car racing is also popular in the area. Richmond International Raceway (RIR) has hosted the NASCAR Sprint Cup since 1953 and the Capital City 400 from 1962 to 1980. RIR also hosted IndyCar's Suntrust Indy Challenge from 2001-2009. The second track, Southside Speedway, has been in operation since 1959 and is located southwest of Richmond in Chesterfield County. This 0.536-kilometer (0.333-mile) oval track has become known as "The Toughest Track in the Southland" and "The Action Track" and runs weekly races on Friday evenings. Southside Speedway has been the breeding ground for many NASCAR legends such as Richard Petty, Bobby Allison and Darrell Waltrip, and claims to be the home track of NASCAR superstar Denny Hamlin.

**Question 0**

When did RIR start organising the Capital City 400?

**Question 1**

When did the Suntrust Indy Challenge stop being run at RIR?

**Question 2**

Which way from Richmond to Southside Speedway?

**Question 3**

What is the shape of Southside Speedway?

**Question 4**

What is the nickname for Southside Speedway besides "The Action Track"?

**Text number 49**

The Richmond Times-Dispatch is a local Richmond daily newspaper with a Sunday circulation of 120 000 and is owned by BH Media, a subsidiary of Warren Buffett's Berkshire Hathaway. Style Weekly is a weekly magazine covering popular culture, arts and entertainment, owned by Landmark Communications. RVA Magazine is the city's only independent arts and culture publication, which used to be monthly but is now published quarterly. The Richmond Free Press and The Voice cover news from an African-American perspective.

**Question 0**

Which company owns the company that owns the Richmond Times-Dispatch?

**Question 1**

How many people buy the Richmond Times-Dispatch on Sundays?

**Question 2**

What newspaper does Landmark Communications publish?

**Question 3**

How often was RVA Magazine published before the change to the current publication schedule?

**Question 4**

Besides The Voice, what is Richmond's black news publication?

**Text number 50**

The Richmond metropolitan area has several local television and radio stations. In 2010[update] The Richmond-Petersburg Designated Market Area (DMA) is the 58th largest in the United States with 553,950 homes, according to Nielsen Market Research. Major television stations include WTVR-TV 6 (CBS), WRIC-TV 8 (ABC), WWBT 12 (NBC), WRLH-TV 35 (Fox) and WUPV 65 (CW), while broadcast stations include WCVE-TV 23 and WCVW 57. The Richmond area also has a wide variety of radio stations serving many different interests, including news, talk radio and sports, as well as an eclectic range of musical interests.

**Question 0**

According to Nielsen, how many homes are in the Richmond-Petersburg DMA area?

**Question 1**

Where is the Richmind-Petersburg DMA located in the United States?

**Question 2**

To which network does WUPV 65 belong?

**Question 3**

What kind of channel is WCVW 57?

**Question 4**

Which Richmond area station is part of CBS?

**Text number 51**

Richmond's city government consists of a city council, with representatives from nine districts serving in legislative and oversight roles, and a popularly elected, district-wide mayor who serves as the chief executive. The residents of each of the nine districts elect one council representative each for a four-year term. Since the November 2008 elections, the Council's term of office has been extended to four years. The City Council elects one of its members as President and one as Vice-President of the Council. The City Council meets at City Hall, 900 E. Broad St., 2nd Floor, on the second and fourth Mondays of each month, except August.

**Question 0**

How many representatives are there on Richmond City Council?

**Question 1**

Which official is responsible for the Richmond executive?

**Question 2**

How many years does a Richmond City Council member serve?

**Question 3**

What day of the week does the City Council meet?

**Question 4**

Which month does the city council not meet?

**Text number 52**

In 1990, religion and politics intersected and influenced the outcome of the election in South Richmond's eighth constituency. With the support of black power brokers, black clergy and the Richmond Crusade for Voters, South Richmond residents made history and elected Reverend A. Carl Prince to the Richmond City Council. Prince was the first African-American Baptist minister elected to the Richmond City Council, and his election paved the way for a political paradigm shift that continues today. Following Prince's election, the Reverend Gwendolyn Hedgepeth and former Richmond mayor, the Reverend Leonidas Young, were elected to public office. Prior to Prince's election, black clergy gave political contributions and were appointed to the Richmond School Board and other boards throughout the city. Today, religion and politics continue to flourish in the state of Virginia. The Honorable Dwight C. Jones, a well-known Baptist minister and former chairman of the Richmond School Board and member of the Virginia House of Delegates, serves as mayor of the City of Richmond.

**Question 0**

What is the denomination of A. Carl Prince?

**Question 1**

Who is the current mayor of Richmond?

**Question 2**

What year was the first black Baptist minister elected to the city council?

**Question 3**

In which constituency A. Carl Prince won the election for the city council?

**Question 4**

Which political organisation supported A. Carl Prince's candidacy for the City Council?

**Text number 53**

The city of Richmond has 28 elementary schools, nine middle schools and eight high schools with a total of 24 000 students. The city has one governor's school - the Maggie L. Walker Governor's School for Government and International Studies - which in 2008 was named one of Newsweek magazine's 18 "public elite" high schools, and in 2012 was ranked 16th among the best high schools in America. The Richmond Public School District also operates one of Virginia's four public charter schools, the Patrick Henry School of Science and Arts, founded in 2010.

**Question 0**

How many high schools are there in Richmond?

**Question 1**

How many primary and secondary school pupils attend school in Richmond?

**Question 2**

Who is the Governor's School in Richmond named after?

**Question 3**

Where did Newsweek rank Richmond Governor's School in 2012?

**Question 4**

When did the Patrick Henry School of Science and Arts open?

**Text number 54**

The Richmond area is home to many major institutions of higher education, including Virginia Commonwealth University (public), University of Richmond (private), Virginia Union University (private), Virginia College (private), South University - Richmond (private, non-profit), Union Theological Seminary & Presbyterian School of Christian Education (private) and Baptist Theological Seminary in Richmond (BTSR-private). There are several community colleges in the metropolitan area, including J. Sargeant Reynolds Community College and John Tyler Community College (Chesterfield County). In addition, Richmond has several technical colleges, including ITT Technical Institute, ECPI College of Technology and Centura College. There are also several vocational colleges, such as Fortis College and Bryant Stratton College.

**Question 0**

What kind of university is the University of Richmond?

**Question 1**

What is a for-profit university in Richmond?

**Question 2**

What does BTSR stand for?

**Question 3**

Where is John Tyler Community College located?

**Question 4**

What is Richmond Public University?

**Text number 55**

The Greater Richmond area is served by Richmond International Airport (IATA: RIC, ICAO: KRIC), located in nearby Sandston, seven miles (11 km) southeast of Richmond and an hour's drive from historic Williamsburg, Virginia. Richmond International Airport is currently served by nine airlines with more than 200 daily non-stop flights to major destinations and connecting flights to worldwide destinations. Richmond International Airport had a record 3.3 million passengers in 2006, up 13% from 2005.

**Question 0**

How many miles from Richmond is Richmond International Airport?

**Question 1**

How long does it take to drive from Richmond International Airport to Williamsburg?

**Question 2**

How many airlines fly from Richmond International Airport?

**Question 3**

By what percentage did Richmond International's passenger numbers increase between 2005 and 2006?

**Question 4**

Where to travel to Richmond Sandston?

**Text number 56**

Richmond is a major hub for Greyhound Lines, a long-distance bus company, and its terminal is located at 2910 N Boulevard. Several services a day provide direct connections to Washington, New York, Raleigh and beyond. Direct trips to New York City take approximately 7.5 hours. Megabus, a low-cost airline, also offers passenger service from outside the Main Street station, with fares starting at $1. Direct service is available to Washington, D.C., Hampton Roads, Charlotte, Raleigh, Baltimore and Philadelphia. Most other connections to cities served by Megabus, such as New York, can be made from Washington, D.C. Richmond and the surrounding metropolitan area were awarded a grant of approximately $25 million from the U.S. Department of Transportation to support a recently proposed rapid transit system that would run along Broad Street from Willow Lawn to Rocketts Landing, the first phase of an improved mass transit hub for the region.

**Question 0**

What is the street address of the Greyhound bus terminal in Richmond?

**Question 1**

How long is the bus from Richmond to New York?

**Question 2**

What is the cheapest Megabus fare?

**Question 3**

How much money did the Department of Transportation give Richmond for its rapid transit system?

**Question 4**

To which cities in Maryland does Megabus operate?

**Text number 57**

Local transit and paratransit bus service in Richmond, Henrico and Chesterfield counties is provided by the Greater Richmond Transit Company (GRTC). However, GRTC serves only small portions of suburban counties. In the far West End (Innsbrook and Short Pump) and most of Chesterfield County, there is no public transit despite dense residential, commercial and office development. According to the 2008 GRTC Operational Analysis Report, the majority of GRTC riders use its services because they have no alternative, such as a private car.

**Question 0**

Which counties does GRTC connect to Richmond?

**Question 1**

What is the furthest part of the West End from the Short Pump?

**Question 2**

According to the GRTC report, what is an example of what most of its passengers lack?

**Question 3**

What is the abbreviation for GRTC?

**Text number 58**

The Richmond area also has two train stations served by Amtrak. Both stations are regularly served from north of Richmond, including Washington, Philadelphia and New York. The Staples Mill Road suburban station is located on a major north-south freight rail line and provides train service to all points south, including Raleigh, Durham, Savannah, Newport News, Williamsburg and Florida. Richmond's only rail station within the city limits, the historic Main Street Station, was renovated in 2004. Since 2010, due to track alignments, the station has only received trains to and from Newport News and Williamsburg stations. As a result, the Staples Mill Road station receives more trains and serves more passengers.

**Question 0**

Which station serves all southbound rail traffic through Richmond?

**Question 1**

What is the name of the railway station inside Richmond?

**Question 2**

What year was Richmond railway station redeveloped?

**Question 3**

Which city's rail service uses the Main Street station in addition to Williamsburg?

**Question 4**

Why is the Main Street station only served by trains from Newport News and Williamsburg?

**Text number 59**

In the Richmond metropolitan area, electricity is supplied by Dominion Virginia Power. The Richmond-based company is one of the nation's largest energy producers, serving retail energy customers in nine states. In the Richmond area, electricity is generated primarily by the North Anna Nuclear Generating Station and the Surry Nuclear Generating Station, as well as coal-fired power plants in Chester, Virginia. These three plants generate a total of 4,453 megawatts of electricity. Several other natural gas power plants provide additional power during peak demand periods. These include plants in Chester and Surry, and two plants in Richmond (Gravel Neck and Darbytown).

**Question 0**

Who is Richmond's electricity supplier?

**Question 1**

How many states does Dominion Virginia Power operate in?

**Question 2**

What is Richmond's main electricity generator, along with the Surry nuclear power plant?

**Question 3**

Which city is home to the coal-fired power plants that generate electricity for Richmond?

**Question 4**

What type of power plant is Darbytown?

**Text number 60**

The wastewater treatment plant and the distribution system, based on a network of water mains, pumping stations and reservoirs, provides water to around 62 000 customers in the city. A wastewater treatment plant is also located on the south bank of the James River. The plant can treat up to 70 million gallons of sanitary and storm water per day before it is returned to the river. The wastewater plant also operates and maintains 2,400 miles of sanitary sewers and pump stations, 61 miles of sewer lines, and the Shockoe Retention Basin, a 44 million gallon stormwater basin used during heavy rains.

**Question 0**

How many kilometres of sewer lines are there in Richmond?

**Question 1**

How much water does the Shockoe Retention Basin contain?

**Question 2**

How many people in Richmond get their water from a sewage treatment plant?

**Question 3**

How much sewage and stormwater can the treatment plant along the James River handle on a daily basis?

**Document number 437**

**Text number 0**

Of the huge range of micro-organisms, relatively few cause disease in otherwise healthy people. Infectious diseases are the result of the interaction between these few pathogens and the defences of their hosts. The occurrence and severity of disease caused by any pathogen depends on the ability of that pathogen to damage the host and the host's ability to resist the pathogen. However, the host's immune system can also damage the host itself in an attempt to control the infection. Clinicians therefore classify infecting micro-organisms or microbes according to the host's state of defence - either as primary pathogens or opportunistic pathogens:

**Question 0**

How many of the huge number of micro-organisms cause disease in otherwise healthy people?

**Question 1**

What is the interaction between pathogens and host defences?

**Question 2**

What determines the severity of the disease caused by the pathogen?

**Question 3**

What can the host's immune system do to the host?

**Question 4**

How do clinicians classify infectious microorganisms according to status?

**Question 5**

How many micro-organisms cause remediation in otherwise healthy individuals?

**Question 6**

What is prevented by the interaction between pathogens and host attacks?

**Question 7**

What determines the level of achievement caused by a pathogen?

**Question 8**

What can the host's immune system allow the host to do?

**Question 9**

What do clinicians overlook when classifying infectious microorganisms?

**Text number 1**

One way to prove that a particular disease is "contagious" is to fulfill Koch's postulates (first put forward by Robert Koch) that the infectious agent should only be identified in patients and not in healthy controls, and that patients who contract the infectious agent will also contract the disease. These postulates were first used when it was discovered that tuberculosis was caused by mycobacterial species. Koch's postulates are not ethically applicable to many human diseases because they require the experimental infection of a healthy individual with a pathogen produced in pure culture. Often even clearly infectious diseases do not meet the criteria for infection. For example, Treponema pallidum, the spirochete that causes syphilis, cannot be cultured in vitro - but the organism can be cultured in rabbit testicles. It is less clear that a pure culture is from a host animal source than if it is from microbes derived from algal culture. Epidemiology is another important tool for studying diseases in populations. In the case of communicable diseases, it can be used to determine whether an epidemic is sporadic (occasional occurrence), endemic (regular occurrences that occur frequently in an area), epidemic (an unusually high number of cases in an area) or pandemic (a worldwide epidemic).

**Question 0**

What is one way to prove that a particular disease is contagious?

**Question 1**

Where does the infectious agent only need to be identified to satisfy the first of Koch's postulates?

**Question 2**

What is Koch's second postulate?

**Question 3**

Why are Koch's postulates not ethically applicable to many human diseases?

**Question 4**

What is the spirochete that causes syphilis?

**Question 5**

What is one way to prove that a particular disease is safe?

**Question 6**

Where must the infectious agent not be identified for the first of Koch's postulates to be met?

**Question 7**

What is Koch's worst postulate?

**Question 8**

Why are Koch's postulates ethically applicable to many reptilian diseases?

**Question 9**

What is no longer the spirochete that causes syphilis?

**Text number 2**

Infectious diseases are sometimes called communicable diseases when they are easily transmitted through contact with a sick person or their secretions (e.g. influenza). An infectious disease is therefore a sub-category of communicable diseases that is particularly contagious or easily transmitted. Other types of communicable diseases with more specialised routes of transmission, such as vector-borne infection or sexual infection, are generally not considered 'communicable' and often do not require medical isolation (sometimes called quarantine) of the victims. However, this specialised meaning of the word 'communicable' and 'communicable disease' (easy contagiousness) is not always followed in common usage.

**Question 0**

When are communicable diseases called infectious diseases?

**Question 1**

What is a subset of an infectious disease?

**Question 2**

What distinguishes an infectious disease from a normal infectious disease?

**Question 3**

What type of containment is often not required for diseases that are vector-borne or sexually transmitted?

**Question 4**

What is not always respected in public use?

**Question 5**

When are communicable diseases called impossible diseases?

**Question 6**

What is more important than an infectious disease?

**Question 7**

What makes an infectious disease similar to a normal communicable disease?

**Question 8**

What is always respected in vernacular usage?

**Text number 3**

The infection starts when the organism enters the body, grows and reproduces. This is called colonisation. Most people are not easily infected. The frail, sick, malnourished, cancer patients or diabetics are more susceptible to chronic or persistent infections. People with compromised immune systems are particularly vulnerable to opportunistic infections. Infection at the host-host interface usually occurs through the mucous membranes of the oral cavity, nose, eyes, genitals and anus, or the microbe may enter through open wounds. Although a few organisms can grow at the initial site of infection, many migrate and cause systemic infection in different organs. Some pathogens grow inside host cells (intracellularly), while others grow freely in body fluids.

**Question 0**

When does the infection start?

**Question 1**

Which group is not easily infected?

**Question 2**

Which group of people has an increased susceptibility to chronic or persistent infections?

**Question 3**

Which people are particularly vulnerable to opportunistic infections?

**Question 4**

What is it called when the pathogen grows inside the host cells?

**Question 5**

When does an infection become unstoppable?

**Question 6**

Which group will never be infected?

**Question 7**

Which group of people is not susceptible to chronic or persistent infections?

**Question 8**

Which people are particularly vulnerable to opportunistic infections?

**Question 9**

What is it called when a pathogen explodes inside the host cells?

**Text number 4**

Wound colonisation refers to the presence of non-proliferating microorganisms in the wound, whereas infected wounds have proliferating organisms and tissue damage. All multicellular organisms are colonised to some extent by external organisms, and most of these have either a mutualistic or commensal relationship with the host. An example of the former is the anaerobic bacterial species colonising the large intestine of mammals, and an example of the latter is the various species of staphylococcus found on human skin. Neither of these colonisations are considered infections. The difference between infection and colonisation is often simply a matter of circumstances. Non-pathogenic organisms can become pathogenic under certain conditions, and even the most virulent organism requires certain conditions to cause a dangerous infection. Some colonising bacteria, such as Corynebacteria sp. and viridans streptococci, inhibit the attachment and colonisation of pathogenic bacteria and are thus in a symbiotic relationship with the host, preventing infection and accelerating wound healing.

**Question 0**

What is wound colonisation?

**Question 1**

What types of organisms are present and damage tissue in infected wounds?

**Question 2**

What have all multicellular organisms colonised to some extent?

**Question 3**

Which species colonises the large intestine of mammals?

**Question 4**

What is the difference between infection and colonisation?

**Question 5**

What does it mean to avoid wound colonisation?

**Question 6**

What are the few multicellular organisms that are colonised to some extent?

**Question 7**

Which organisms itch and heal tissue in infected wounds?

**Question 8**

What is the only similarity between infection and colonisation?

**Question 9**

Which rodent colonises the large intestine of mammals?

**Text number 5**

Because bacterial colonisation is normal, it is difficult to know which chronic wounds are infected. Despite the huge number of wounds observed in clinical practice, there is little good quality data on the assessment of symptoms and signs. A review of chronic wounds published in the Journal of the American Medical Association's "Rational Clinical Examination Series" quantified the importance of increased pain as an indicator of infection. The review found that the most useful finding is that an increase in pain [likelihood ratio (LR) range 11-20] makes infection much more likely, but the absence of pain (negative LR range 0.64-0.88) does not exclude infection (summary LR 0.64-0.88).

**Question 0**

Why is it difficult to know which chronic wounds are infected?

**Question 1**

What is there little quality data to assess, despite the huge number of wounds seen in clinical practice?

**Question 2**

What does increased pain tell you?

**Question 3**

What does not rule out infection?

**Question 4**

Why is it easy to know which chronic wounds are infected?

**Question 5**

What is the limit to the amount of quality data that exists, despite the huge number of wounds seen in clinical care?

**Question 6**

What does the reduction in pain tell you?

**Question 7**

What always rules out infection?

**Question 8**

What is rarely seen in clinical practice?

**Text number 6**

Disease can occur if the host's protective immune mechanisms are compromised and the organism causes damage to the host. Micro-organisms can cause tissue damage by releasing various toxins or destructive enzymes. For example, Clostridium tetani releases a toxin that paralyses muscles, and staphylococcus releases toxins that cause shock and sepsis. Not all infectious agents cause disease in all hosts. For example, less than 5% of people infected with polio become ill. On the other hand, some infectious agents are highly virulent. The prion causing mad cow disease and Creutzfeldt-Jakob disease invariably kills all infected animals and humans.

**Question 0**

A disease can arise when an organism causes what on the host?

**Question 1**

What micro-organism can cause tissue damage by releasing a variety?

**Question 2**

What is Clostridium tetani poison released?

**Question 3**

What releases the toxins that cause shock and sepsis?

**Question 4**

What proportion of people infected with polio become ill?

**Question 5**

When the organism blocks what from the host, can a disease arise?

**Question 6**

What micro-organism can repair tissue damage by releasing a variety?

**Question 7**

What does the toxin releasing Clostridium tetani help you avoid?

**Question 8**

What releases the toxins that produce joy and euphoria?

**Question 9**

Which disease like Creutzfeldt-Jakob has never resulted in death?

**Text number 7**

Persistent infections occur because the body cannot eliminate the organism after the initial infection. Persistent infections are characterised by the persistent presence of the infectious organism, often as a latent infection, with occasional relapses of active infection. There are some viruses that can maintain a persistent infection by infecting different cells of the body. Some viruses are never cleared from the body. A typical example is the herpes virus, which tends to hide in nerves and reactivate under certain conditions.

**Question 0**

Why do persistent infections occur?

**Question 1**

What are the persistent infections characterised by their constant presence?

**Question 2**

How can some viruses cause a persistent infection?

**Question 3**

What never leaves the body once it is acquired?

**Question 4**

Where is the herpes virus hiding?

**Question 5**

Why do persistent infections never occur?

**Question 6**

What are the persistent infections characterised by persistent absence?

**Question 7**

How can some viruses cure a persistent infection?

**Question 8**

What always leaves the body when it is acquired?

**Question 9**

Where does the herpes virus avoid?

**Text number 8**

The diagnosis of an infectious disease sometimes involves identifying the infectious agent, either directly or indirectly. In practice, most minor infectious diseases, such as warts, skin abscesses, respiratory infections and diarrhoeal diseases, are diagnosed on the basis of clinical signs and treated without knowledge of the causative agent. Inferences about the causative agent are based on the likelihood that the patient has come into contact with a particular pathogen, the prevalence of the microbe in the community and other epidemiological factors. With sufficient effort, all known infectious agents can be identified. However, the benefits of identification often far outweigh the costs, as there is often no specific treatment, the cause is obvious or the outcome of the infection is benign.

**Question 0**

What does the diagnosis of an infectious disease sometimes involve identifying?

**Question 1**

Many minor communicable diseases are diagnosed on the basis of which presentation?

**Question 2**

How are mild infectious diseases treated?

**Question 3**

What can be identified when enough work is done?

**Question 4**

Why is it often not worth the effort to identify the infectious agent?

**Question 5**

What is always overlooked in the diagnosis of an infectious disease?

**Question 6**

How many minor communicable diseases are diagnosed illegally?

**Question 7**

How are all infectious diseases treated?

**Question 8**

What can be identified without effort?

**Question 9**

Why is it always worth identifying the infectious agent?

**Text number 9**

The diagnosis of an infectious disease is almost always initiated on the basis of a medical history and a physical examination. More detailed identification techniques require the culture of infectious agents isolated from the patient. Culturing allows the identification of infectious organisms by examining their microscopic characteristics, detecting the presence of pathogen-produced substances and directly identifying the organism by its genotype. Other techniques (such as X-ray, computed tomography, PET or NMR imaging) are used to produce images of internal abnormalities due to the growth of the infectious agent. These images are useful for detecting, for example, bone abscesses or prion-induced spongiform encephalopathy.

**Question 0**

How is the diagnosis of an infectious disease almost always started?

**Question 1**

What is the possibility of taking a culture sample from an infectious agent isolated from a patient?

**Question 2**

What characteristics of an infectious organism can be studied in culture?

**Question 3**

How can organisms be directly identified?

**Question 4**

What techniques can be used to produce images of internal anomalies?

**Question 5**

How is the diagnosis of an infectious disease rarely initiated?

**Question 6**

What is limited by culture from an infectious agent isolated from the patient?

**Question 7**

What infectious organism traits are prohibited from being tested in culture?

**Question 8**

How can organisms never be directly identified?

**Question 9**

What techniques can be used to produce images of external anomalies?

**Text number 10**

Microbiological culture is the main tool used to diagnose infectious diseases. Microbial culture provides a culture medium for a specific pathogen. A sample of potentially infected tissue or fluid is then tested for the presence of an infectious agent capable of growing in it. Most pathogenic bacteria grow readily on nutrient agar, a solid medium containing carbohydrates and proteins essential for bacterial growth, as well as plenty of water. A single bacterium grows on the surface of the plate into a visible mound called a colony, which may be isolated from other colonies or merge together to form a 'lawn'. The size, colour, shape and form of the colony are specific to the bacterial species, its particular genetic structure (strain) and the environment in which it grows. Other components are often added to the plate to aid identification. Plates may contain substances that allow some bacteria to grow but not others, or that change colour under the influence of some bacteria but not others. Such bacteriological plates are commonly used in the clinical identification of infectious bacteria. Microbial culture can also be used to identify viruses: in this case, the viable medium is cells grown in culture, which can be infected and then transformed or killed by the virus. In virus identification, the growth of the virus results in an area of dead cells called a "plaque". Eukaryotic parasites can also be grown in culture to identify a specific pathogen.

**Question 0**

Which type of culture is the main tool used to diagnose infectious diseases?

**Question 1**

What type of medium is intended for a particular substance in a microbial culture?

**Question 2**

Where do most pathogenic bacteria grow easily?

**Question 3**

What do you call it when a visible mound forms on the surface of a disc?

**Question 4**

What is the name given to the area of dead cells resulting from the growth of a virus?

**Question 5**

Which type of hammer is the main instrument used to diagnose infectious diseases?

**Question 6**

What type of medium is not typically provided for a particular substance used in microbial culture?

**Question 7**

On which most pathogenic bacteria are unable to grow?

**Question 8**

What do you call it when an invisible mound forms on the surface of a disc?

**Question 9**

What is the name of the planet of dead cells created by the growth of a virus?

**Text number 11**

In the absence of suitable algal culture techniques, some microbes have to be cultured in live animals. Bacteria such as Mycobacterium leprae and Treponema pallidum can be cultured in animals, although serological and microscopic techniques make the use of live animals unnecessary. Viruses are also commonly identified using alternatives to culture or animal culture. Some viruses can be grown in embryo eggs. Another useful identification method is xenodiagnosis, i.e. the use of a vector to support the growth of the infectious agent. Chagas' disease is the most important example, as the presence of the causative agent, Trypanosoma cruzi, in the patient is difficult to detect directly, making it difficult to make a definitive diagnosis. In this case, the xenodiagnosis uses a vector of T. cruzi virus, the causative agent of Chagas' disease, an uninfected triatomine insect that takes a blood meal from a person suspected of being infected. The sputum is subsequently examined for the growth of T. cruzi in the intestine.

**Question 0**

What are live animals for?

**Question 1**

Where can Mycobacterium leprae and Treponema pallidum be grown?

**Question 2**

In what kind of eggs can some viruses be grown?

**Question 3**

What is a xenodiagnosis?

**Question 4**

What is difficult to show in Chagas disease?

**Question 5**

Why are living animals unnecessary?

**Question 6**

Where can Mycobacterium leprae and Treponema pallidum never grow?

**Question 7**

What kind of eggs are not allowed to breed viruses?

**Question 8**

What does Xenodiagnosis avoid doing?

**Question 9**

What is easy to prove the presence of Chagas disease?

**Text number 12**

Another important tool in the diagnosis of infectious diseases is microscopy. Almost all the cultivation techniques discussed above rely at some stage on microscopic examination for definitive identification of the infectious agent. Microscopy can be performed with simple instruments such as a light microscope or with instruments as complex as an electron microscope. Samples from patients can be directly examined with a light microscope and can often be rapidly identified. Microscopy is also often used in combination with biochemical staining techniques and can be highly specific when used in combination with antibody-based techniques. For example, artificially fluorescent antibodies (fluorescently labelled antibodies) can be designed to bind to and recognise specific antigens of a pathogen. Fluorescence microscopy can then be used to detect fluorescently labelled antibodies that have bound to internalised antigens in clinical samples or cultured cells. This technique is particularly useful in the diagnosis of viral diseases when the light microscope cannot directly identify the virus.

**Question 0**

What is a microscope used for?

**Question 1**

What are almost all cultural techniques based on at some point?

**Question 2**

Which patient samples can be viewed directly below?

**Question 3**

When is a microscope highly specific?

**Question 4**

What artificial fluorescent antibodies can be directed to do?

**Question 5**

What is a microscope not needed for?

**Question 6**

What is virtually no cultural technique based on at some point?

**Question 7**

What samples taken from patients can be viewed from a distance?

**Question 8**

When is a microscope extremely useless?

**Question 9**

What can artificially fluorescent antibodies not do?

**Text number 13**

Other microscopic methods can also help identify infectious agents. Almost all cells stain readily with several alkaline dyes, due to the electrostatic attraction between negatively charged cellular molecules and the positive charge of the dye. The cell is usually transparent under the microscope, and the use of a dye increases the contrast between the cell and the background. By staining the cell with a dye such as Giemsa dye or crystal violet, the microscope can image the cell's size, shape, internal and external parts, and its connections with other cells. The response of bacteria to different staining methods is also used for the taxonomic classification of microbes. Two methods, Gram staining and acid-fast staining, are standard methods used for bacterial classification and disease diagnosis. Gram staining identifies the bacterial groups Firmicutes and Actinobacteria, both of which include many important human pathogens. Oxygen staining identifies the actinobacterial genera Mycobacterium and Nocardia.

**Question 0**

What makes almost all cells stain easily?

**Question 1**

Why do cells stain easily with dyes?

**Question 2**

What is the electronic charge on cell molecules?

**Question 3**

What is Geimsa-tahra?

**Question 4**

How many methods make up the standard methods used to classify bacteria and diagnose diseases?

**Question 5**

Which few cells stain easily?

**Question 6**

Why are cells difficult to stain with dyes?

**Question 7**

Which electronic charge is destroyed by the cell molecules?

**Question 8**

How many methods involve unconventional approaches used to classify bacteria and diagnose diseases?

**Question 9**

What is the least common method used to classify bacteria and diagnose disease?

**Text number 14**

The isolation of enzymes from infected tissue can also form the basis for the biochemical diagnosis of an infectious disease. For example, humans cannot produce RNA replicases or reverse transcriptases, and the presence of these enzymes is characteristic of certain types of viral infections. The ability of the viral protein haemagglutinin to bind red blood cells together into a detectable matrix can also be characterised as a biochemical test for viral infection, although haemagglutinin is not strictly speaking an enzyme and has no metabolic function.

**Question 0**

What needs to be isolated from infected tissue to make a biochemical diagnosis of an infectious disease?

**Question 1**

Which enzyme is typically present in certain types of viral infections?

**Question 2**

What protein does haemagglutinin bind together?

**Question 3**

Why is the presence of certain enzymes a sign of a virus?

**Question 4**

What must be associated with infected tissue to make a biochemical diagnosis of infectious disease?

**Question 5**

Which enzyme is typically absent in certain types of viral infections?

**Question 6**

What protein does haemagglutinin pull apart?

**Question 7**

Why is the presence of certain enzymes a sign of good health?

**Text number 15**

Serological methods are highly sensitive, specific and often very rapid tests used to identify micro-organisms. These tests are based on the ability of an antibody to bind specifically to an antigen. The antibody binds to the antigen, which is usually a protein or carbohydrate produced by the infectious agent. This binding triggers a chain of events that can be visibly detected in different ways depending on the test. For example, streptococcus is often diagnosed within minutes based on the presence of antigens produced by S. pyogenes bacteria taken from the patient's throat with a cotton swab. Serological tests, where available, are usually the preferred method of identification, but tests are expensive to develop and the reagents used in the tests often require refrigeration. Some serological methods are very expensive, although they can be inexpensive when commonly used, such as the streptococcal test.

**Question 0**

Which methods are highly sensitive, accurate and rapid tests used to identify micro-organisms?

**Question 1**

What are serological tests based on the ability of an antibody to do?

**Question 2**

To which antigen does the antibody usually bind?

**Question 3**

What does tying trigger that leads to something visible in a different way?

**Question 4**

What is the cause of streptococcus?

**Question 5**

Which methods are highly sensitive, common and slow tests used to identify micro-organisms?

**Question 6**

What are the serological tests based on antibody avoidance ability?

**Question 7**

Which antibody does the antigen bound to usually not belong to?

**Question 8**

What does tying trigger that leads to something differently invisible?

**Question 9**

What is a "streptococcus" special agent?

**Text number 16**

Complex serological techniques have been developed as so-called immunoassays. Immunoassays can use antibody-antigen binding as the basis for generating an electromagnetic or particle radiation signal that can be detected by some kind of instrumentation. The signal from unknown antigens can be compared with the signal from standards, allowing the amount of target antigen to be determined. To aid in the diagnosis of infectious diseases, immunoassays can detect or measure either the antigens of infectious agents or the proteins produced by the infected organism in response to a foreign substance. For example, immunoassay A can detect the presence of a surface protein on a viral particle. Immunoassay B, on the other hand, can detect or measure antibodies produced by the organism's immune system that neutralise the virus and allow it to be destroyed.

**Question 0**

What are immunoassays?

**Question 1**

What kind of signal do immunoassays give?

**Question 2**

What enables quantification of the target antigen?

**Question 3**

Immunoassays can detect which types of proteins?

**Question 4**

What immunoassays are prohibited?

**Question 5**

What kind of signal do immunoassays absorb?

**Question 6**

What prevents quantification of the target antigen?

**Question 7**

What types of proteins cannot be detected by immunoassays?

**Text number 17**

Polymerase chain reaction (PCR)-based techniques will become the almost ubiquitous gold standard for diagnostics in the near future for several reasons. First, the list of infectious agents has grown so large that almost all infectious agents of importance to the human population have been identified. Secondly, an infectious agent must grow in the human body to cause disease; it must in principle replicate its own nucleic acids to cause disease. This nucleic acid replication in the infected tissue provides the opportunity to detect the infectious agent by PCR. Thirdly, the tools needed to guide PCR, the primers, are derived from the genome of the infectious agents, and over time these genomes will become known, if they are not already.

**Question 0**

What does PCR stand for?

**Question 1**

What will be the common gold standards for diagnostic methods in the near future?

**Question 2**

To what extent has the list of infectious agents grown?

**Question 3**

What does an infectious agent have to do to cause a disease?

**Question 4**

From whose genome have primers been derived?

**Question 5**

What does PCR stand for?

**Question 6**

What are the silver standards for diagnostics in the distant future?

**Question 7**

To what extent has the list of infectious agents been reduced?

**Question 8**

What does the infectious agent need to prevent to cause the disease?

**Question 9**

What are the primers that elves exclude?

**Text number 18**

The technological capability to rapidly and specifically detect any infectious agent is therefore currently available. The only remaining barriers to the use of PCR as a standard diagnostic tool are related to its cost and application, neither of which is insurmountable. The development of PCR methods is not useful for the diagnosis of some diseases, such as some clostridial diseases (tetanus and botulism). These diseases are essentially biological poisonings caused by relatively small numbers of infectious bacteria that produce very potent neurotoxins. There is no significant multiplication of the infectious agent, which limits the ability of PCR to detect the presence of bacteria.

**Question 0**

What technological capabilities for detection are currently available?

**Question 1**

What are the remaining barriers to the use of PCR as a standard diagnostic tool?

**Question 2**

What are the diseases that do not benefit from PCR methods?

**Question 3**

PCR cannot detect the presence of bacteria when what is not happening?

**Question 4**

What supernatural powers of perception are currently available?

**Question 5**

What are the remaining obstacles to the removal of PCR as a standard diagnostic tool?

**Question 6**

Which diseases help to improve PCR methods?

**Question 7**

What barriers to using PCR are currently insurmountable?

**Question 8**

What diseases are essentially considered biological cures?

**Text number 19**

Specific identification of the infectious agent is usually only appropriate when it can help in the treatment or prevention of the disease, or when it can improve knowledge of the disease process before effective treatment or prevention measures are developed. For example, in the early 1980s, before AZT was first used to treat AIDS, the course of the disease was closely monitored by monitoring the composition of patients' blood samples, even when the result offered no other treatment options for the patient. In part, these studies on the prevalence of HIV in specific communities allowed hypotheses to be put forward about the route of transmission of the virus. Understanding how the disease was transmitted allowed resources to be targeted at communities at greatest risk in campaigns to reduce the number of new infections. The specific serological diagnostic identification of HIV, and later genotypic or molecular identification, also allowed the development of hypotheses about the temporal and geographical origin of the virus, as well as a myriad of other hypotheses. The development of molecular diagnostic tools has enabled doctors and researchers to monitor the effectiveness of antiretroviral drugs. Molecular diagnostics is now commonly used to identify HIV in healthy people long before the onset of the disease and has shown that there are people who are genetically resistant to HIV infection. So although there is still no cure for AIDS, identifying the virus and monitoring the levels of the virus in the blood of infected people has major therapeutic and proactive benefits for both the patient and the community.

**Question 0**

What is used to treat AIDS?

**Question 1**

How was the course of AIDS monitored?

**Question 2**

What could be done by understanding how the disease was transmitted?

**Question 3**

What did the genotypic identification of HIV later allow?

**Question 4**

What is now commonly used to identify HIV in healthy people before the onset of disease?

**Question 5**

What is used as a punishment for AIDS?

**Question 6**

How was the course of AIDS concealed?

**Question 7**

What could be at risk if we understood how the disease was transmitted?

**Question 8**

What did genotypic identification of HIV later prevent?

**Question 9**

What is now rarely used to identify HIV in healthy people before the onset of disease?

**Text number 20**

Techniques such as hand washing, scrubs and face shields can help prevent the transmission of infections from one person to another. Frequent hand washing remains the most important way to prevent the spread of unwanted organisms. There are other forms of prevention, such as avoiding the use of illegal drugs, using condoms and leading a healthy lifestyle, including a balanced diet and regular exercise. It is also important to prepare food well and avoid food that has been left outdoors for long periods of time.

**Question 0**

What can be prevented by wearing protective suits and face masks?

**Question 1**

What is the main defence against the spread of unwanted organisms?

**Question 2**

Avoiding drugs and using condoms are other forms of what?

**Question 3**

Why is it important to cook food well?

**Question 4**

What should be done with food that has been outdoors for a long time?

**Question 5**

What can the use of gowns and face shields make easier?

**Question 6**

What is the least important defence against the spread of unwanted organisms?

**Question 7**

What are drug use and condom avoidance?

**Question 8**

What makes a balanced diet and regular exercise impossible?

**Question 9**

What should be done with food that has not been left out for a long time?

**Text number 21**

One way to prevent or slow down the spread of infectious diseases is to recognise the different characteristics of different diseases. Some critical disease characteristics that should be assessed are virulence, distance travelled by victims and degree of transmission. For example, human strains of the Ebola virus incapacitate their victims very quickly and kill them shortly afterwards. As a result, victims of this disease are unable to travel very far from their original infected area. In addition, the virus must be spread through skin lesions or permeable membranes such as the eye. Thus, the initial phase of Ebola is not very contagious, as its victims only have internal bleeding. Due to the above characteristics, Ebola spreads very rapidly and tends to remain within a relatively limited geographical area. In contrast, the human immunodeficiency virus (HIV) kills its victims very slowly by attacking their immune system. As a result, many of its victims spread the virus to other people before they even realise they have the disease. In addition, the relatively low viral load allows its victims to travel long distances, increasing the likelihood of an epidemic.

**Question 0**

Identifying the different characteristics of different diseases is one way of doing what?

**Question 1**

What are the critical disease characteristics that should be assessed?

**Question 2**

Which virus strains incapacitate their victims very quickly before killing them?

**Question 3**

Why is the initial phase of Ebola not very contagious?

**Question 4**

What does the low virulence of HIV allow victims to do?

**Question 5**

What does identifying the different characteristics of different diseases allow someone to add?

**Question 6**

What are some critical features of the disease that should not be assessed?

**Question 7**

Which virus strains amplify their victims very quickly before killing them?

**Question 8**

Why is the early phase of Ebola so contagious?

**Question 9**

What does the extreme virulence of HIV allow victims to do?

**Text number 22**

Another effective way to reduce the rate of spread of infectious diseases is to recognise the impact of small world networks. Epidemics often involve extensive interactions within nodes or groups of infected individuals and interactions within discrete nodes of susceptible individuals. Despite the low level of interaction between separate nodes, the disease may move to a susceptible node and spread there through one or a few interactions with an infected node. Thus, in small networks, infection rates can be reduced to some extent if interactions between individuals within infected nodes are removed (Figure 1). However, infection rates can be significantly reduced if the focus is on preventing movement between nodes. The use of needle exchange programmes in areas with high numbers of HIV-positive drug users is an example of successful implementation of this treatment approach. Another example is the ring vaccination carried out in 2001 to prevent the spread of the FMD virus or the vaccination of potentially susceptible herds on adjacent farms.

**Question 0**

Identifying the impact of small world networks can help reduce what?

**Question 1**

What kind of interactions take place in groups of infected individuals during epidemics?

**Question 2**

What is the way to significantly reduce the number of infections?

**Question 3**

What is an example of successful prevention of transfer jumps?

**Question 4**

When were vaccinations used to prevent the spread of the foot-and-mouth disease virus?

**Question 5**

What can be added by identifying the impact of small world networks?

**Question 6**

What kind of interactions stop groups of infected individuals in epidemics?

**Question 7**

What is one way to significantly reduce infections?

**Question 8**

What is an example of a successful implementation of adding transfer hops?

**Question 9**

When were vaccinations used to prevent the spread of foot-and-mouth disease?

**Text number 23**

Resistance to infection (immunity) can be acquired after disease, through asymptomatic carriage of the pathogen, in the habitat of a structurally similar organism (cross-reaction) or by vaccination. Protective antigens and specific acquired host immune factors are better known for primary pathogens than for opportunistic pathogens. In addition, there is herd immunity, which provides some protection to otherwise vulnerable people when a sufficiently large proportion of the population has acquired immunity against specific infections.

**Question 0**

What is technically called resistance to infection?

**Question 1**

When can immunity be acquired?

**Question 2**

For what purpose is the knowledge of protective antigens more complete?

**Question 3**

What does herd immunity offer to vulnerable people once a sufficiently large proportion of the population has acquired immunity?

**Question 4**

Vaccination is a way to get what?

**Question 5**

What is informally called resistance to infection?

**Question 6**

When can immunity be at its best?

**Question 7**

Why is the knowledge of protective antigens forbidden?

**Question 8**

What does herd mentality offer to invulnerable people when a small proportion of the population has acquired immunity?

**Question 9**

What is the only way to lose immunity?

**Text number 24**

Genetic variants in individual patients can affect pathogen clearance, either treatment-induced or spontaneously. For example, in genotype 1 hepatitis C treated with pegylated interferon alfa-2a or pegylated interferon alfa-2b (brand names Pegasys or PEG-Intron) in combination with ribavirin, genetic polymorphisms near the human IL28B gene encoding interferon lambda 3 have been shown to be associated with significant differences in treatment-induced viral clearance. This finding, originally published in Nature, showed that genotype 1 hepatitis C patients with certain genetic variant alleles near the IL28B gene are more likely than others to achieve a sustained virological response after treatment. A later report in Nature showed that the same genetic variants are also associated with natural clearance of the genotype 1 hepatitis C virus.

**Question 0**

What can affect the elimination of pathogens in an individual?

**Question 1**

What is the brand name of Pegasys for?

**Question 2**

What are patients carrying certain genetic variant alleles near the IL28B gene more likely to achieve?

**Question 3**

What can be done to stop the multiplication of pathogens in an individual?

**Question 4**

What do patients carrying certain genetic variant alleles near the IL28B gene always achieve?

**Question 5**

What disease has no known treatment?

**Question 6**

What can only be achieved through treatment and not spontaneously?

**Text number 25**

When an infection invades the body, anti-infective drugs can suppress the infection. These include antibacterials (antibiotics, including anti-tuberculosis drugs), antivirals, antifungals and anti-parasitic drugs (including antiprotozoals and antihelminthics). Depending on the severity and type of infection, the antibiotic may be given orally or by injection, or it may be given topically. Severe brain infections are usually treated with intravenous antibiotics. Sometimes several antibiotics are used if an antibiotic is resistant. Antibiotics only work on bacteria and do not affect viruses. Antibiotics work by slowing down the multiplication of bacteria or by killing bacteria. The most common classes of antibiotics used in medicine are penicillin, cephalosporins, aminoglycosides, macrolides, quinolones and tetracyclines[citation needed].

**Question 0**

What medicines can suppress the infection when it invades the body?

**Question 1**

How many different types of anti-infectives are there?

**Question 2**

What depends on the route of administration of the antibiotic?

**Question 3**

How are serious brain infections usually treated?

**Question 4**

How do antibiotics work?

**Question 5**

Which medicines can make an infection worse when it invades the body?

**Question 6**

How many broad types of anti-infectives no longer exist?

**Question 7**

What does not affect the way an antibiotic is given?

**Question 8**

How are severe brain infections usually damaged?

**Question 9**

How do antibiotics damage the body?

**Text number 26**

The three most important single pathogens/causes of disease are HIV/AIDS, tuberculosis and malaria. Deaths from almost all diseases have decreased, but deaths from HIV/AIDS have quadrupled. Childhood diseases include pertussis, poliomyelitis, diphtheria, measles and tetanus. Children also account for a large proportion of deaths from lower respiratory tract infections and diarrhoea. In 2012, around 3.1 million people died from lower respiratory tract infections, making it the fourth most common cause of death worldwide.

**Question 0**

What are the three main killer diseases?

**Question 1**

How much have HIV/AIDS deaths increased?

**Question 2**

What are the popular childhood diseases?

**Question 3**

Who makes up the majority of pendant deaths?

**Question 4**

What is the fourth leading cause of death in the world?

**Question 5**

What are the three main curable diseases?

**Question 6**

How much has HIV/AIDS increased the birth rate?

**Question 7**

What are some recently cured childhood diseases?

**Question 8**

Who accounts for none of the diarrhoea deaths?

**Question 9**

What is the fourth leading cause of death in the world?

**Text number 27**

The medical treatment of infectious diseases falls under the heading of infectious disease medicine, and in some cases the study of transmission falls under the heading of epidemiology. Usually, infections are initially diagnosed by primary care physicians or specialists in internal medicine. For example, "uncomplicated" pneumonia is usually treated by an internist or pulmonologist (lung specialist). The work of an infectious disease specialist therefore involves collaboration with patients and general practitioners, as well as with laboratory scientists, immunologists, bacteriologists and other specialists.

**Question 0**

Which branch of medicine is involved in the treatment of infectious diseases?

**Question 1**

Which scientific discipline can the spread of diseases fall under?

**Question 2**

Who usually diagnoses the infection initially?

**Question 3**

What is the non-medical mumbo jumbo term for pulmonologist?

**Question 4**

Who works with both patients and GPs to identify the disease?

**Question 5**

Which field of psychology is the treatment of infectious diseases?

**Question 6**

Which war zone can the spread of diseases fall under?

**Question 7**

Who tends to ignore the infection at first?

**Question 8**

What is a fictitious term for a lung doctor?

**Question 9**

Who will fight with both patients and GPs to identify the disease?

**Text number 28**

Several studies have reported a link between the pathogen load in the area and human behaviour. Higher pathogen loads are associated with lower ethnic and religious populations in the area. This may be because a high pathogen load favours avoidance of other groups, which may reduce the spread of pathogens, or because a high pathogen load prevents the establishment of large settlements and armies that reinforce a common culture. A higher pathogen load is also associated with more restricted sexual behaviour, which may reduce the spread of pathogens. It is also associated with higher preferences for health and attractiveness in partners. Higher fertility rates and shorter or less parental care per child is another association that may compensate for higher mortality. There is also an association with polygyny, which may be due to a higher pathogen load, making the selection of genetically resistant males increasingly important. A higher pathogen load is also associated with collectivism and less individualism, which may limit contact with outside groups and infections. There are alternative explanations for at least some of the links, although some of these explanations may ultimately be due to pathogen load. Thus, polygyny may also be due to lower male-to-female ratios in these areas, but this may ultimately be due to higher mortality from infectious diseases in male babies. Another example is that poor socioeconomic factors may ultimately be partly due to a high pathogen burden that hinders economic development.

**Question 0**

Which of the following has been correlated in several studies?

**Question 1**

What is associated with a higher pathogen load?

**Question 2**

What does avoiding other groups reduce?

**Question 3**

What does more restricted sexual behaviour lead to?

**Question 4**

What are some of the reasons for poor socio-economic performance?

**Question 5**

Between what has no correlation been found in several studies?

**Question 6**

Which are not associated with pathogen loads?

**Question 7**

What does avoiding other groups contribute?

**Question 8**

What is not affected by sexual behaviour?

**Question 9**

What is the only reason for poor socio-economic factors?

**Text number 29**

Evidence of infections in fossil remains is of interest to palaeopathologists studying the occurrence of injuries and diseases in extinct organisms. Signs of infection have been found in the bones of carnivorous dinosaurs. However, when infections do occur, they usually seem to be limited to small areas of the body. The skull of the early carnivorous dinosaur Herrerasaurus ischigualastensis shows bumpy wounds surrounded by swollen and porous bone. The unusual structure of the bone surrounding the wounds suggests that they were affected by a short-lived, non-lethal infection. Scientists who examined the skull speculated that the bite marks were from a fight with another Herrerasaurus. Other carnivorous dinosaurs with documented evidence of infection include Acrocanthosaurus, Allosaurus, Tyrannosaurus and Tyrannosaurus of the Kirtland Formation. Both tyrannosaurs were infected by biting during a fight, as was the Herrerasaurus specimen.

**Question 0**

Which profession is interested in evidence of infection in fossil remains?

**Question 1**

What do palaeopathologists study?

**Question 2**

What has been found in the bones of carnivorous dinosaurs?

**Question 3**

Which dinosaur had bumpy wounds in its skull, surrounded by swollen and porous bone?

**Question 4**

How did the tyrannosaurs get infected?

**Question 5**

Which profession thinks that evidence of infection in fossil remains is useless?

**Question 6**

What do palaeopathologists avoid studying?

**Question 7**

What has been found in the blood of carnivorous dinosaurs?

**Question 8**

Which dinosaur's femur had bumpy wounds surrounded by swollen and porous bone?

**Question 9**

How did tyrannosaurs become invincible?

**Document number 438**

**Text number 0**

Hunting is the killing or capture of any animal or the pursuit or tracking of any animal for that purpose. People hunt wild animals or wildlife most commonly for food, recreation, to remove predators dangerous to humans or domestic animals, or for trade. In the 2010s, legal hunting is distinguished from poaching, which is the illegal killing, capture or imprisonment of the species being hunted. The species hunted are called game or prey and are usually mammals and birds.

**Question 0**

What is killing or catching an animal?

**Question 1**

Why do people mostly hunt wild animals?

**Question 2**

What is the difference between legal hunting and?

**Question 3**

What is poaching?

**Question 4**

What is the name of the species being hunted?

**Question 5**

What is the killing or capture of any animal called?

**Question 6**

What is the illegal killing, capture or trapping of a species to be hunted?

**Question 7**

What are usually called hunted species?

**Question 8**

What animals are usually hunted?

**Question 9**

What is killing or catching an animal called?

**Question 10**

What species are usually hunted?

**Question 11**

Why do people hunt?

**Question 12**

When was legal hunting separated from poaching?

**Question 13**

What are the species to be hunted?

**Question 14**

What do wild animals usually eat?

**Question 15**

What tactics do wild animals use to find prey?

**Question 16**

In what year were wild animals first classified?

**Question 17**

What kind of animals are usually considered wild?

**Question 18**

What do wild animals have to compete with humans to find?

**Text number 1**

There is also evidence that hunting may have been one of several environmental factors that led to the extinction of the holocene megafauna and its replacement by smaller herbivores. The extinction of the North American megafauna coincided with a younger dry season impact event, which may mean that hunting was not as critical a factor in the extinction of prehistoric species as previously thought. However, in other places, such as Australia, humans are thought to have played a very significant role in the extinction of the Australian megafauna, which was widespread before human settlement.

**Question 0**

Which species has evidence that hunting may have contributed to the extinction of which species?

**Question 1**

Which coincided with the extinction of the North American megafauna?

**Question 2**

What do people believe has played a significant role in Australia?

**Question 3**

When was the Australian megafauna widespread?

**Question 4**

What, together with many environmental factors, led to the extinction of the holocene megafauna?

**Question 5**

What replaced the holocene megafauna?

**Question 6**

Which event coincided with the extinction of the North American megafauna?

**Question 7**

What is thought to have contributed significantly to the extinction of the Australian megafauna?

**Question 8**

Which event coincided with the extinction of the Australian megafauna?

**Question 9**

What led to Younger Dryas being replaced as a result of human occupation?

**Question 10**

Which event was found to have less megafauna participation than previously thought?

**Question 11**

What was widespread before the existence of prehistoric species?

**Question 12**

Which event was caused by smaller herbivores in the area?

**Text number 2**

While it is undeniable that early humans were hunters, the hunting hypothesis emphasises the importance of this in the evolution of Homo from earlier australopithecines, including the manufacture of stone tools and eventually fire control, and downplays it in scenarios that emphasise omnivory and social interaction, including mating behaviour, as essential components in the evolution of modern human behaviour. With the consolidation of language, culture and religion, hunting became the subject of stories and myths, as well as rituals such as dances and animal sacrifices.

**Question 0**

What is undeniable about early humans?

**Question 1**

Hunting was important for the birth of the Homo genus from what?

**Question 2**

Which also contributed to the production of stone tools and fire management?

**Question 3**

Where did the theme of stories and myths come from?

**Question 4**

What kind of rituals does hunting allow?

**Question 5**

What is indisputable about the people who came before you?

**Question 6**

Where did hunting become a theme?

**Question 7**

Which hypothesis emphasises stone tools and fire control?

**Question 8**

What kind of action would require the use of fire by early humans?

**Question 9**

Why was mating behaviour important in the origin of the Homo genus?

**Question 10**

Where did omnivorousness become an early human theme?

**Question 11**

What animal sacrifices were considered part of the birth of modern man?

**Question 12**

What is indisputable about the animals sacrificed?

**Text number 3**

The hunter-gatherer lifestyle prevailed in some parts of the New World, sub-Saharan Africa and Siberia, and throughout Australia until the time of European discovery. It still persists in some tribal societies, albeit in rapid decline. Peoples who have maintained Palaeolithic hunting and gathering into the recent past include some indigenous peoples of the Amazon (Aché), some peoples of Central and South Africa (San), some peoples of New Guinea (Fayu), the Mlabri of Thailand and Laos, the Vedda of Sri Lanka and some non-contact peoples. In Africa, the only remaining full-time hunter-gatherers are the Hadza people of Tanzania[referred ].

**Question 0**

What was the way of life in Siberia until the European Age of Discovery?

**Question 1**

Where does the hunter-gatherer lifestyle still exist, albeit in decline?

**Question 2**

What did the indigenous peoples of the Amazon preserve until the recent past?

**Question 3**

Who are the only remaining full-time hunter-gatherers in Africa?

**Question 4**

The hunter-gatherer lifestyle prevailed until when?

**Question 5**

In which parts of the New World did the hunter-gatherer lifestyle survive?

**Question 6**

Who are the only remaining full-time hunter-gatherers in Africa?

**Question 7**

What era began in Africa that ended the hunter-gatherer lifestyle?

**Question 8**

What has happened to Australian society to make it fail?

**Question 9**

Who are Australia's only remaining full-time hunter-gatherers?

**Question 10**

Which parts of the New World are home to untouchable peoples?

**Question 11**

What kind of way of life was preserved in the Amazon during the discovery period?

**Text number 4**

Archaeologist Louis Binford criticises the idea that early hominids and early humans were hunters. He concluded, based on analysis of skeletal remains of eaten animals, that hominids and early humans were mostly scavengers, not hunters, an idea that is popular among some archaeologists and palaeoanthropologists. Robert Blumenschine proposed the idea of a confrontation involving challenging and intimidating other predators after killing them, which he suggested could have been the main way for early humans to obtain protein-rich meat.

**Question 0**

What is Louis Binford's occupation?

**Question 1**

What idea was Binford against?

**Question 2**

What did Binford conclude people were instead of hunters?

**Question 3**

What idea did Blumenschine propose?

**Question 4**

What does confrontational scavenging mean when it is done to other predators after they have taken the prey?

**Question 5**

Which archaeologist does not believe that early humans were hunters?

**Question 6**

Louis Binford deduced what from the remains of the skeleton of a consumed animal?

**Question 7**

What did Robert Blumenschine suggest?

**Question 8**

Among whom is Louis Binford's idea popular?

**Question 9**

Encounter-based scavenging involves what to do with other predators?

**Question 10**

What idea is Robert Blumenschine criticising?

**Question 11**

What did Robert Blumenschine analyse to come to the conclusion that humans were hunters?

**Question 12**

Among which group is the idea that people are hunters popular?

**Question 13**

What is the first step a person takes when hunting an animal?

**Question 14**

What did early humans get when they hunted?

**Text number 5**

Although animal domestication became relatively widespread and after the development of agriculture, hunting was generally a major factor in human food supply. Hunting provided additional meat and materials such as proteins, bones for tools, sinews for ropes, furs, feathers, raw hides and leather for clothing. Early human hunting weapons included stones, spears, atlatls, bows and arrows. Hunting is still vital in marginal climates, especially those unsuitable for grazing or agriculture. For example, the Inuit of the Arctic hunt and trap animals for clothing and use marine mammal skins to make kayaks, clothing and footwear.

**Question 0**

What was a major factor in people's diets?

**Question 1**

What did the extra meat from the hunt contain?

**Question 2**

What was the hunting hide used for?

**Question 3**

Stones and spears are examples of man's earliest what?

**Question 4**

Where is hunting still vital?

**Question 5**

What did Hunt contribute significantly to?

**Question 6**

Where is hunting still vital?

**Question 7**

Why is hunting still vital in marginal climates?

**Question 8**

How are marine mammal skins useful for people trapped in the Arctic?

**Question 9**

What were the main influences on agricultural development?

**Question 10**

What did the Inuit first develop in the Arctic when meat was scarce?

**Question 11**

What do the Inuit use to decorate their clothes?

**Question 12**

What did the Inuit sometimes use to make jewellery?

**Question 13**

What was the preferred hunting weapon of the Inuit?

**Text number 6**

In ancient reliefs, especially from Mesopotamia, kings are often depicted as hunters of big game, such as lions, and they are often depicted hunting from chariots. The cultural and psychological significance of hunting in ancient societies is represented by deities such as the horned god Cernunnos and the moon goddess of classical antiquity, the Greek Artemis or the Roman Diana. Taboos are often associated with hunting, and the mythological association of prey species with a deity may have been reflected in hunting restrictions, such as the protected area around the temple. For example, Euripides' story of Artemis and Aktaeon can be seen as a warning against disrespecting prey or boasting.

**Question 0**

What do kings often look like in ancient reliefs?

**Question 1**

What do kings hunt?

**Question 2**

How was the cultural significance of hunting presented in ancient societies?

**Question 3**

What might the mythological association of prey species and deity be?

**Question 4**

What is the significance of Euripides' story as a warning?

**Question 5**

Which big game hunt was filmed from the chariots of kings?

**Question 6**

What is often associated with hunting?

**Question 7**

What meaning do the deities represent?

**Question 8**

Which story is seen as a warning against disrespecting prey or brazen boasting?

**Question 9**

What was the main god worshipped in Mesopotamia?

**Question 10**

Which deities came to Mesopotamia after Cernunnus?

**Question 11**

Which animal is associated with the Greek Diana?

**Question 12**

How are Euripdes often shown hunting?

**Question 13**

What does the Mesopotamian story of the horned god Cernunnos warn us about?

**Text number 7**

In most of medieval Europe, the upper class had exclusive hunting rights in certain areas of feudal territory. In these areas, game was used as a source of food and fur, often supplied by professional hunters, but was also expected to provide a form of recreation for the aristocracy. The importance of this proprietary view of game is reflected in the legends of Robin Hood, where one of the main charges against outlaws is that they 'hunt the king's deer'. In contrast, settlers in the English-speaking colonies democratically idealised hunting open to all.

**Question 0**

Who had the exclusive right to hunt in certain feudal areas in medieval Europe?

**Question 1**

What was used by the upper class as a source of game?

**Question 2**

Which legends show the importance of the nobles' concept of game ownership?

**Question 3**

What is one of the legendary outlaws' primary charges?

**Question 4**

What were the English-speaking immigrants proud of?

**Question 5**

Who had the exclusive right to hunt in certain areas in medieval Europe?

**Question 6**

What game was used in the feudal zone?

**Question 7**

Who gave the game obtained in the feudal domain?

**Question 8**

What is the significance of the legends?

**Question 9**

To whom did the English-speaking colonies democratically praise hunting?

**Question 10**

What activities is everyone allowed to do in the feudal domain of medieval Europe?

**Question 11**

What could only the aristocracy do in the English-speaking colonies?

**Question 12**

What kind of hunters worked in the English colonies?

**Question 13**

What was another reason for the aristocracy to participate in hunting in the English-speaking colonies?

**Question 14**

Which legendary aristocracy started in the English-speaking colonies?

**Text number 8**

In Hindu scriptures, hunting is described as an acceptable profession and a sport for royalty. Even deities are described as having practised hunting. One of the names of the Shiva god is Mrigavyadha, which means 'deer hunter' (mriga means deer, vyadha means hunter). In many Indian languages, including Malayalam, the word Mriga means not only deer but all animals and animal instincts (Mriga Thrishna). Shiva as Mrigavyadhana is the one who destroys animal instincts in humans. In the Ramayana epic, Dasharatha, the father of Rama, is said to have the ability to hunt in the dark. On one of his hunting expeditions, he accidentally killed Shravana, thinking him to be prey. While Rama was in exile in the forest, Ravana kidnapped his wife Sita from their hut, when Rama asked Sita to catch a golden deer and his brother Lakshman went after him. According to Mahabharat, Pandu, the father of the Pandavas, accidentally killed Kindama, the druid, and his wife with an arrow, mistaking them for deer. Krishna is said to have died after being accidentally wounded by a hunter's arrow.

**Question 0**

According to Hindu scriptures, what kind of profession is hunting?

**Question 1**

What is one of the names of the god Shiva?

**Question 2**

What is the translation of Mrigavyadhan?

**Question 3**

What does Shiva destroy in people?

**Question 4**

What talents does Dasharatha have?

**Question 5**

Where in the scriptures is hunting described as an acceptable profession?

**Question 6**

What kind of activities have the gods been involved in?

**Question 7**

Mrigavyadha means what?

**Question 8**

Mrigavyadha destroys the animal instinct in whom?

**Question 9**

What happened after Krishna was accidentally wounded by a hunter's arrow?

**Question 10**

How did Shiva accidentally wound himself to die later?

**Question 11**

What does the Ramayana destroy in animals?

**Question 12**

How is Krishna said to be able to hunt?

**Question 13**

Who did Krishna think was prey and accidentally kill?

**Question 14**

Where was Krishna banished to?

**Text number 9**

Since early Christian times, hunting has been forbidden to the clergy of the Roman Catholic Church. Thus, in the Corpus Juris Canonic (C. ii, X, De cleric. venat.) it says: 'We forbid all the servants of God to hunt and to go hunting in the woods with hunting dogs; we also forbid them to keep falcons or hawks. "The Fourth Lateran Council, held under Pope Innocent III, decreed (canon xv): 'We forbid hunting or falconry by all clergymen.' The decree of the Council of Trent is worded more leniently: "Let the clergy abstain from illegal hunting and falconry" (Sess. XXIV, De reform., c. xii), which seems to imply that not all hunting is illegal, and the canonists usually make a distinction whereby noisy (clamorosa) hunting is declared illegal but quiet (quieta) hunting is not.

**Question 0**

Who has been banned from hunting since early Christian times?

**Question 1**

Who forbids all God's servants to hunt?

**Question 2**

Under which Pope was the Fourth Lateran Council held?

**Question 3**

What does the Trento decision mean?

**Question 4**

What kind of hunting is illegal?

**Question 5**

Who was banned from hunting in the early Christian era?

**Question 6**

What prohibits hunting in the forest with hunting dogs and keeping falcons or hawks?

**Question 7**

Who held the fourth Lateran conciliar?

**Question 8**

How is the Trento Council decision worded?

**Question 9**

Who said that silent hunting is allowed?

**Question 10**

What kind of birds did Pope Innocent III keep?

**Question 11**

What kind of hunting was lawful under the Corpus Juris Canonicus?

**Question 12**

With whom did the Trento Council forbid God's servants to go on forest trips?

**Question 13**

Under which Pope was the decision of the Council of Trento taken?

**Question 14**

What does Corpus Juris Canonici mean for distinguishing between types of hunting?

**Text number 10**

While the distinction between legal and illegal hunting is undoubtedly permissible, it is nevertheless certain that a bishop can absolutely forbid all hunting by the clergy of his diocese, as the synods of Milan, Avignon, Liège, Cologne and others have done. Benedict XIV (De synodo diœces., l. II, c. x) declared that such synodal decrees are not too severe, since an absolute prohibition of hunting is more in accordance with canon law. In practice, therefore, one must consult the synodal rules of the various localities to see whether they permit silent hunting or prohibit it altogether.

**Question 0**

What difference is undoubtedly allowed?

**Question 1**

What can a bishop absolutely forbid?

**Question 2**

Where did the synods ban all hunting?

**Question 3**

What did Benedict XIV proclaim about regulations banning hunting?

**Question 4**

Who can ban hunting by clergy?

**Question 5**

Who made the declaration that regulations are not harsh?

**Question 6**

What did the synods of Milan, Avignon, Liege, Cologne and others do?

**Question 7**

What happens if a bishop takes part in a hunt?

**Question 8**

In which areas were bishops allowed to hunt?

**Question 9**

What did Benedict XIV say about allowing hunting?

**Question 10**

Who was the only pope to take part in a silent hunt?

**Question 11**

Which law was introduced by Benedict XIV to protect the right to hunt?

**Text number 11**

New Zealand has a strong hunting culture. The islands that make up New Zealand originally had no land mammals other than bats. However, after the arrival of Europeans on the islands, wild animals were introduced by the adaptation organisations to provide New Zealanders with sport and hunting resources. Deer, pigs, goats, rabbits, hares, tigers and deer adapted well to the New Zealand landscape, and because there were no natural predators, their populations grew exponentially. Authorities consider the animals to be pests because of their impact on the natural environment and agricultural production, but hunters consider them to be a natural resource.

**Question 0**

What is New Zealand?

**Question 1**

What was the only New Zealander from New Zealand?

**Question 2**

Why did the acclimatisation associations introduce game animals?

**Question 3**

Why did the population of pigs and rabbits explode in New Zealand?

**Question 4**

How do government agencies perceive animals?

**Question 5**

Which country has a strong hunting culture?

**Question 6**

What was New Zealand's only land mammal?

**Question 7**

What is New Zealand made of?

**Question 8**

Who brought game animals here?

**Question 9**

What was the result of the lack of natural predators for the animals introduced into the area?

**Question 10**

Which mammal was the only mammal that originally lived in Europe?

**Question 11**

What were bats originally used for in Europe?

**Question 12**

What kind of culture is Europe?

**Question 13**

Which group brought the pigs to Europe?

**Question 14**

What is the perception of bats in Europe by bat adaptation organisations?

**Text number 12**

During the feudal and colonial period of British India, hunting was considered a royal sport in many principalities, as many maharajas and nawabs, as well as British officers, maintained entire bands of shikaris (big game hunters) who were professional hunters by birth. They were led by a master hunter, who might be called a mir-shikari. Often they recruited local tribes, usually from low-ranking positions, because of their traditional knowledge of the environment and hunting techniques. Big game, such as Bengal tigers, might be hunted from the back of an elephant.

**Question 0**

What was hunting like in British India?

**Question 1**

What does the Indian word "shikaris" mean in English?

**Question 2**

Where did the British officers maintain whole armies?

**Question 3**

Why did the kings recruit low-ranking local tribes to hunt?

**Question 4**

What Bengal tiger could be hunted from the back?

**Question 5**

Where was hunting considered a royal sport?

**Question 6**

What do you hunt from the back of an elephant?

**Question 7**

Who were the British officers maintaining?

**Question 8**

Who led the Shikari?

**Question 9**

Why were local tribes recruited as low-ranking?

**Question 10**

What kind of shikari was practised in British India?

**Question 11**

What is the definition of the stomach limit?

**Question 12**

What two things were needed to make an elephant hunt successful?

**Question 13**

Which country had the largest elephant population in the world?

**Question 14**

With whom did the local tribes collaborate to bring down the Bengal tiger?

**Text number 13**

Regional social norms are generally against hunting, but some sects, such as the Bishnoi tribe, place particular emphasis on the protection of certain species, such as antelope. India's Wildlife Protection Act of 1972 prohibits the killing of all wild animals. However, the Chief Wildlife Warden may, if he is satisfied that a particular listed wild animal has become dangerous to human life or is so disabled or diseased that it cannot recover, authorise any person to hunt such an animal. In such a case, the carcass of the wild animal killed or wounded shall become the property of the State.

**Question 0**

Which standards are generally against hunting?

**Question 1**

Which sect places particular emphasis on the protection of certain species?

**Question 2**

What prohibits the killing of all wild animals in India?

**Question 3**

Who can give permission to hunt animals in India, even though it is forbidden?

**Question 4**

Who becomes the owner of the body of a wild animal that has been killed or injured?

**Question 5**

Who is placing particular emphasis on the protection of certain species?

**Question 6**

What prohibits the killing of all wild animals?

**Question 7**

In what year was this protection law introduced?

**Question 8**

Who can authorise the hunting of wild animals?

**Question 9**

What happens to the body of a killed wild animal?

**Question 10**

Which group of people was first discovered in 1972?

**Question 11**

What killing has been banned by the Bishnoi since 1972?

**Question 12**

What law was drafted to ban only the killing of antelope?

**Question 13**

What becomes of the bishnoi's property if it dies or is injured?

**Question 14**

In what year did the antelope population first start to decline?

**Text number 14**

Unarmed fox hunting on horseback with hounds is the form of hunting most closely associated with the United Kingdom; in fact, "hunting" means fox hunting without specification. What is called 'hunting' in other countries is 'shooting' (birds) or 'stalking' (deer) in the UK. Originally, fox-hunting became a popular social activity for the newly wealthy upper classes in the Victorian era, and a traditional rural pastime for both horse riders and foot soldiers alike. In many ways, fox-hunting resembles hare-hunting with hounds. Hares can be chased using pairs of greyhounds (or long dogs) such as greyhounds, which demonstrate their skill at chasing the hare (but are not intended to catch the hare), or the hare can be chased with scent hounds such as beagles or harriers. Other types of foxhounds can also be used to hunt deer or mink. Deer hunting with a rifle is done on foot, without dogs, by stealth.

**Question 0**

Which form of hunting is most closely associated with the UK?

**Question 1**

How do the English hunt foxes?

**Question 2**

What do they hunt in England when it comes to "shooting"?

**Question 3**

Why were foxes originally hunted?

**Question 4**

How is deer stalking with a rifle done?

**Question 5**

What hunting is done on horseback with dogs?

**Question 6**

Who is hunting on horseback with a hunting dog?

**Question 7**

A popular social activity in the Victorian era was?

**Question 8**

What to do on foot without dogs?

**Question 9**

What were the dogs used for?

**Question 10**

What was elk hunting with a rifle originally?

**Question 11**

What was deer hunting originally intended to protect?

**Question 12**

When did deer stalking become popular?

**Question 13**

Among which group did elk hunting become popular?

**Question 14**

What kind of activity was elk hunting considered to be for both riders and followers?

**Text number 15**

Hunting in the UK, unlike traditional hunting, requires little game hunting - around 35 million birds are released each year onto hunting farms, some of which are factory farmed. Shooting competitions can be complex, with guns placed in designated areas and assistants helping to load shotguns. Once in position, "hackers" pass through the protected areas waving sticks or flags to scare away game. Such events are often called "drives". In the UK, the grouse shooting season starts on 12 August, the so-called Glorious Twelfth. The definition of game in the UK is based on the Game Act 1831.

**Question 0**

What does shooting in the UK require a bit of searching?

**Question 1**

How many birds are released into shooting ranges in the UK each year?

**Question 2**

What kinds of things can shootings be?

**Question 3**

Who uses waving sticks or flags to scare away game?

**Question 4**

What is Glorious Twelfth in the UK?

**Question 5**

How many birds are released into shooting ranges each year?

**Question 6**

Who waves sticks or flags to drive the game out?

**Question 7**

When does the raptor hunting season start in the UK?

**Question 8**

What is the definition of a game in the UK?

**Question 9**

Why are assistants used?

**Question 10**

How many people have participated in shooting in the UK since 1831?

**Question 11**

On what date will assistants have to receive weapons safety training?

**Question 12**

What is the second name of the gambling law?

**Question 13**

In what year did factory farms first legally start production in the UK?

**Question 14**

What is another name for a weapon that is placed in position?

**Text number 16**

Hunting is primarily regulated by state law; additional provisions are provided by US environmental law for migratory birds and endangered species. Regulations vary widely from state to state, regulating the areas, time periods, techniques and methods by which certain game animals may be hunted. Some states distinguish between protected species and unprotected species (often vermin or parasites for which hunting is not regulated). In all states, hunters of protected species need a hunting licence, sometimes subject to completion of a hunting safety course.

**Question 0**

What is the primary law governing hunting?

**Question 1**

What other legislation applies to migratory birds and endangered species?

**Question 2**

What varies greatly from state to state?

**Question 3**

Between what do some countries make a distinction?

**Question 4**

What do hunters of protected species in all states demand?

**Question 5**

How is hunting regulated?

**Question 6**

What laws protect migratory birds and endangered species?

**Question 7**

Which hunters need a hunting licence in each state?

**Question 8**

What is sometimes a condition for obtaining a hunting permit?

**Question 9**

Which law regulates the eradication of pests?

**Question 10**

What other laws apply to vermin?

**Question 11**

What do pest hunters in all states have to have?

**Question 12**

What do you need to do before you can hunt vermin?

**Question 13**

What state regulations apply to pest hunting?

**Text number 17**

Big game hunting usually requires a "tag" for each animal caught. Tags must be purchased in addition to a hunting permit, and the number of tags issued to an individual is usually limited. If there are more potential hunters than the quota for the species concerned, tags are usually allocated by drawing lots. Tags may also be limited to a specific area or wildlife management unit. Hunting migratory waterfowl requires a state hunting license in addition to a Fish and Wildlife Service duck stamp.

**Question 0**

What is required for big game hunting?

**Question 1**

Tags are bought in addition to what?

**Question 2**

What is typically limited to a single person?

**Question 3**

A wildlife management unit is a place where what can be restricted?

**Question 4**

What kind of stamp is required to hunt migratory waterfowl?

**Question 5**

When hunting big game, what is usually required?

**Question 6**

What must be purchased for a hunting permit is there will be a limited number?

**Question 7**

How are the tags distributed if there are more hunters than game?

**Question 8**

What is required for hunting migratory waterbirds?

**Question 9**

Who grants a migratory bird hunting claim?

**Question 10**

What do you need for a fishing licence?

**Question 11**

How many people are recruited to the Fish and Wildlife Service each year?

**Question 12**

If the Fish and Wildlife Service has more applicants than jobs, how do they select future employees?

**Question 13**

Where do Fish and Wildlife staff usually work?

**Question 14**

What limits the number of people who can work for the Fish and Wildlife Service each year?

**Text number 18**

The use of weapons in hunting is generally regulated by game category, state territory and time period. Regulations on big game hunting often specify the minimum caliber or muzzle energy of firearms. The use of rifles is often prohibited for safety reasons in areas with high population density or low surface formation. Regulations may also restrict or prohibit the use of lead in ammunition for environmental reasons. Special hunting seasons are often set for bowhunting or muzzle-loading black powder guns in order to limit competition with hunters using more powerful weapons.

**Question 0**

How is the use of weapons generally regulated?

**Question 1**

Where is the minimum caliber or muzzle flash often defined for firearms?

**Question 2**

Why are rifles often banned?

**Question 3**

Why can the use of lead in ammunition be banned by legislation?

**Question 4**

Why have specific hunting seasons been set for bowhunting?

**Question 5**

Why is the use of rifles banned?

**Question 6**

How is the use of weapons regulated?

**Question 7**

What is the definition of big game hunting?

**Question 8**

By which category is bowhunting regulated?

**Question 9**

Why should the use of the bow in hunting be banned?

**Question 10**

In which areas is bow hunting prohibited?

**Question 11**

What are certain periods of use of rifles trying to limit?

**Question 12**

Why is the muzzle flash energy of firearms often limited?

**Text number 19**

Hunting in the United States is not associated with any particular class or culture; according to a 2006 poll, 78% of Americans supported legal hunting, even though relatively few Americans hunt. In the early 2000s, only 6% of Americans hunted. The proportion of Southerners living in the East Coast states was 5%, slightly below the national average, and while hunting was more common in the rest of the South (9%), these figures did not exceed those of the Plains states, where 12% of Midwesterners hunted. In the rest of the country, hunting was below the national average. Overall, between 1996 and 2006, the number of hunters over the age of sixteen declined by 10%, due to a number of factors, including habitat loss and changes in recreational habits.

**Question 0**

What does hunting not involve in the United States?

**Question 1**

What percentage of Americans supported legal hunting in 2006?

**Question 2**

What percentage of Americans were actually hunting in the early 2000s?

**Question 3**

What percentage of people in the Midwest hunt?

**Question 4**

By how much did the number of hunters aged over 16 decrease between 1996 and 2006?

**Question 5**

What percentage of Americans support legal hunting?

**Question 6**

What percentage of Americans were actually hunting in the early 2000s?

**Question 7**

At what pace did the South-Easterners hunt?

**Question 8**

Midwesterners hunted at what pace?

**Question 9**

In what years did hunting decline?

**Question 10**

What leisure activities are not associated with the United States?

**Question 11**

How many Americans were over sixteen in the 2000s?

**Question 12**

What percentage of Americans moved to the Midwest between 1996 and 2006?

**Question 13**

What percentage of Americans had visited the East Coast in 2006?

**Question 14**

What percentage of Midwestern states had lost habitat on farms?

**Text number 20**

The regulation of hunting in the United States dates back to the 19th century. Some modern hunters consider themselves conservationists and sportsmen, along the lines of Theodore Roosevelt and the Boone and Crockett Club. Local hunting clubs and national organizations provide education for hunters and help protect the future of the species by purchasing land for hunting. Some groups represent a specific hunting interest, such as Ducks Unlimited, Pheasants Forever or the Delta Waterfowl Foundation. Many hunting groups are also involved in lobbying federal and state governments.

**Question 0**

When are hunting regulations in force in the USA?

**Question 1**

How do some modern hunters see themselves?

**Question 2**

Which organisations provide hunter education and help protect the future of the species?

**Question 3**

Ducks Unlimited and Delta Waterfowl are examples of groups that represent what?

**Question 4**

What do many hunting groups do at the federal and state level?

**Question 5**

How do modern hunters see themselves?

**Question 6**

Who provides hunter education?

**Question 7**

What do hunting groups also participate in?

**Question 8**

What century do US regulations date back to?

**Question 9**

In what century was the Crockett Club founded?

**Question 10**

Which group did Theodore Roosevelt belong to in the 19th century?

**Question 11**

What was Boone involved in at federal and state level?

**Question 12**

How do lobbyists see themselves?

**Question 13**

When was the pheasant first hunted in the United States?

**Text number 21**

Each year, nearly $200 million from federal excise taxes on hunters is distributed to state agencies to support wildlife management programs, purchase of land open to hunters, and hunter education and safety courses. Since 1934, the sale of federal duck stamps, a mandatory purchase for waterfowl hunters over the age of sixteen, has raised more than $700 million to help purchase more than 5,200,000 acres (8,100,000 square meters; 21,000 km2) of habitat on National Wildlife Refuge System lands that are habitat for waterfowl and many other wildlife species and are often open to hunting. States also collect money from hunting licenses to assist in managing game animals under the Act. A key role of federal and state park rangers and game wardens is to enforce laws and regulations related to hunting, including species protection, hunting seasons and hunting bans.

**Question 0**

How much money is allocated each year to state agencies to support wildlife management programmes?

**Question 1**

How much money has been made from the sale of federal duck stamps since 1934?

**Question 2**

How many acres can be purchased with the money from the sale of federal duck stamps?

**Question 3**

Where do the states spend some of the money from hunting licences?

**Question 4**

What is the key role of state park rangers and game wardens?

**Question 5**

To whom are federal excise taxes distributed?

**Question 6**

What do taxes support?

**Question 7**

How much money has the federal duck stamps raised?

**Question 8**

What land has been acquired with federal duck stamp funds?

**Question 9**

Park rangers and game wardens enforce laws and regulations relating to what?

**Question 10**

In what year was the National Wildlife Refuge system established?

**Question 11**

How much money has been spent on hiring park rangers since 1934?

**Question 12**

What is the central role of government agencies since 1934?

**Question 13**

What is the annual budget of the National Wildlife Refuge system?

**Question 14**

How many acres of land were for sale in the United States in 1934?

**Text number 22**

Varmint hunting is an American term for the selective killing of non-game animals considered pests. Although not always an effective form of pest control, it allows selective control of pests while providing recreational opportunities and is much less regulated. Varmint species often have adverse effects on crops, livestock, landscaping, infrastructure and pets. Some animals, such as wild rabbits or squirrels, may be exploited for fur or meat, but often carcasses are not used. Which species are nuisance species depends on the conditions and the area. Common pests may include various rodents, coyotes, crows, foxes, feral cats and feral pigs. Some animals, such as wolves, which were previously considered nuisance animals, are now protected. In the US state of Louisiana, the alien rodent known as the nutria has become so destructive to the local ecosystem that the state has launched a reward programme to help control the population.

**Question 0**

What varmint hunting is an American expression?

**Question 1**

What does varmint-hunting achieve?

**Question 2**

What kind of harmful effects do pest species often cause?

**Question 3**

Where has the alien rodent known as the nutria become extremely destructive?

**Question 4**

What has the State of Louisiana done to combat nutria?

**Question 5**

What is called the selective killing of non-game animals.

**Question 6**

What was once considered a pest, but is now protected?

**Question 7**

What is an alien species in Louisiana?

**Question 8**

What is Louisiana doing to control the pest population?

**Question 9**

What has the State of Louisiana created to manage the wild rabbit population?

**Question 10**

What were crows once classified as, but are no longer considered crows?

**Question 11**

What is nutria often used for when hunting?

**Question 12**

What are the disadvantages of keeping livestock when you own a farm?

**Question 13**

What can livestock be used to manage?

**Text number 23**

When internet hunting was introduced in 2005, allowing people to hunt over the internet with remote-controlled weapons, it was widely criticised by hunters as being contrary to the principles of fair chase. A spokesperson for the National Rifle Association (NRA) explained that "the NRA has always maintained that fair chase, being in the field with a firearm or bow, is an important part of the hunting tradition. Sitting at a computer and clicking a mouse has nothing to do with hunting. "

**Question 0**

When was internet hunting introduced?

**Question 1**

How did internet hunting make it possible to hunt people?

**Question 2**

Who is criticising internet hunting practices?

**Question 3**

What did hunters find offensive about hunting over the internet?

**Question 4**

What has the NRA always claimed that being in the field with a firearm is?

**Question 5**

What allows people to hunt on the internet?

**Question 6**

When was this form of hunting introduced?

**Question 7**

How is this kind of hunting practised?

**Question 8**

What principle was said to be violated by this type of hunting?

**Question 9**

Who spoke about this infringement?

**Question 10**

What year was the NRA founded?

**Question 11**

What practice did the NRA adopt in 2005?

**Question 12**

You sit at your desk and you do what are the best ways to hunt according to the NRA?

**Question 13**

What do hunters consider remote-controlled weapons to be an important part of hunting?

**Question 14**

What year did hunters first become members of the NRA?

**Text number 24**

Trinidad and Tobago has a very active tradition of hunting small and medium-sized wild game. Hunting is carried out with firearms and dog harnesses, as well as the illegal use of traps, snares and trap nets. In recent years, some 12,000 sport hunters have applied for hunting licenses (in a very small country, about the size of the state of Delaware, with about 5,128 square kilometers and 1.3 million inhabitants), so there is some concern that the practice may not be sustainable. In addition, there are currently no bag limits and the open season is relatively long (5 months - October to February). Thus, the pressure on legal hunters to hunt is very high. In addition, the black market for poached wild game (eagerly sold and bought as expensive luxury delicacies) is thriving and very productive, and the number of commercial poachers is unknown but is expected to be quite high. As a result, the populations of the five main mammal species (red-tailed hawk, Dutch bluebird, nine-toed armadillo, collared peccary and red-tailed deer) are believed to be quite low (although scientific population studies have only recently been conducted, since 2013). It appears that the red-tailed deer population has disappeared from Tobago as a result of over-hunting. A variety of herons, ducks, pigeons, green iguanas, golden tegus, reed buntings and possums are also commonly hunted and poached. Poaching also targets "fully protected species" such as red howler monkeys and capuchin monkeys, southern tamanduas, Brazilian porcupines, yellow-legged turtles, Trinidadian piping plovers and even one of the national birds, the scarlet ibis. Legal hunters pay very small fees to obtain hunting permits and receive no formal training in conservation biology or basic hunting ethics. It is assumed that there is relatively little subsistence hunting in the country (most people hunt either for sport or for commercial gain). The local wildlife management authority is understaffed and underfunded, and as a result there is little enforcement of existing wildlife management laws, and hunting takes place both during and outside the hunting season and even in wildlife reserves. There are some indications that the government is starting to take wildlife management more seriously, and a well-drafted bill was presented to Parliament in 2015. It remains to be seen whether the current and future governments will fully accept and financially support the draft law, and whether the public will raise awareness of the importance of wildlife conservation and transform a culture of wasteful consumption into one of sustainable management.

**Question 0**

Where is the hunting tradition of small and medium-sized wild game very active?

**Question 1**

How many sport hunters have applied for a hunting licence in recent years?

**Question 2**

For what is there a highly productive and thriving black market?

**Question 3**

What causes hunting pressure?

**Question 4**

What is a very active tradition in Trinidad and Tabago?

**Question 5**

Which animal helps you hunt?

**Question 6**

Which population has disappeared?

**Question 7**

What do hunters pay to obtain a hunting permit?

**Question 8**

What is traded on the Delaware black market?

**Question 9**

How many poachers are there in Delaware?

**Question 10**

What training is required to obtain a hunting license in Delaware?

**Question 11**

What is the status of the Delaware Wildlife Authority?

**Question 12**

How often do you hunt in Delaware each year?

**Text number 25**

Hunting is claimed to provide resource managers with an important tool for managing populations that may be beyond the carrying capacity of their habitat and threaten the well-being of other species or, in some cases, harm human health or safety.[In most circumstances, however, carrying capacity is determined by a combination of habitat and food availability, and "population management" hunting has no effect on the annual population of a species.[citation needed] In some cases, it can increase the population of predators such as coyotes by eliminating range boundaries that would otherwise be established, resulting in additional neighbouring movements into the area, thus artificially increasing the population. Proponents of hunting[who?] argue that hunting reduces intraspecific competition for food and shelter, which reduces mortality among the remaining animals. Some environmentalists argue that (re)introducing predators would achieve the same goal more efficiently and with fewer negative effects, such as introducing significant amounts of free lead into the environment and food chain.

**Question 0**

What does hunting provide as an important tool for natural resource managers?

**Question 1**

What is the carrying capacity in most conditions?

**Question 2**

What do some environmentalists claim that the reintroduction of predators would achieve?

**Question 3**

How is hunting an important tool for managing natural resources?

**Question 4**

What happens if a population exceeds the carrying capacity of its habitat?

**Question 5**

How can hunting actually increase predator populations?

**Question 6**

What do some hunting advocates argue that competition between animals indirectly decreases as intra-species competition is reduced?

**Question 7**

What would environmentalists have done instead of hunting?

**Question 8**

What is an important tool for population management?

**Question 9**

On what basis is the carrying capacity determined?

**Question 10**

What can it do to increase the population?

**Question 11**

What does animal migration help resource managers do?

**Question 12**

Which animals' welfare is threatened by migration?

**Question 13**

Whose health could be affected by the movement of animals?

**Question 14**

Where does animal migration reduce competition?

**Question 15**

What is not affected by using migration to manage population growth?

**Text number 26**

In the 19th century, southern and central European sport hunters often hunted game simply to obtain a trophy, usually an animal head or pelt, which was then displayed as a sign of bravery. The rest of the animal was usually discarded. In some cultures, however, such wastefulness was frowned upon. In the Nordic countries, hunting for trophies was - and still is - frowned upon. In North America, hunting in the 19th century was mainly for food, although today it is mainly for sport. Safari hunting was an evolution of sport hunting, with sophisticated travel to Africa, India and elsewhere in search of trophies. In modern times, trophy hunting still continues, and in some areas it is a major source of livelihood[citation needed].

**Question 0**

What did sport hunters in the 19th century poach game for?

**Question 1**

How was the animal's head shown?

**Question 2**

What happened to the rest of the animal?

**Question 3**

What did some churches disapprove of?

**Question 4**

Which countries disapproved of this hunting?

**Question 5**

What was the sole aim of many European sport hunters in the 19th century?

**Question 6**

What kind of trophies did hunters keep as hunting souvenirs that they could display as a sign of their bravery?

**Question 7**

In which countries was trophy hunting frowned upon in the past and in the present?

**Question 8**

What hunting in North America in the 1800s was used to supplement?

**Question 9**

Where did sport hunting travel to in search of trophies?

**Question 10**

In which century was game hunted as a trophy?

**Question 11**

In which countries is trophy hunting frowned upon?

**Question 12**

What was the primary game hunted in North America?

**Question 13**

Which hunting species are in Africa?

**Question 14**

What did hunters in the Nordic countries in the 19th century show as a sign of hunting proficiency?

**Question 15**

What did the Nordic hunters do with the rest of the animals after they had secured the trophy?

**Question 16**

Why was hunting generally practised in the Nordic countries in the 19th century?

**Question 17**

Why is hunting practised in the Nordic countries today?

**Question 18**

In which two countries did the Norse hunt for trophies?

**Text number 27**

A scientific study published in the journal Biological Conservation concludes that trophy hunting is "of great importance for conservation in Africa because it creates economic incentives for conservation in large areas, including areas that may not be suitable for alternative wildlife-based land uses such as ecotourism". However, another study finds that less than 3% of spending on trophy hunters goes to the local level, meaning that the economic incentive and benefit is "minimal, especially given the vast areas of land occupied by hunting concessions".

**Question 0**

According to which continent's biological conservation, trophy hunting is of high conservation importance?

**Question 1**

What does hunting create economic incentives for?

**Question 2**

What another study showed that less than 3% reached the local level?

**Question 3**

What kind of studies does Biological Conservation magazine publish?

**Question 4**

Why is trophy hunting important for African conservation?

**Question 5**

Trophy hunting may involve areas that are unlikely to be suitable for any other type of ecotourism?

**Question 6**

How much of trophy hunters' spending actually ends up at the local level, according to another study?

**Question 7**

So what is the level of economic incentive and benefit?

**Question 8**

What is particularly important in Africa?

**Question 9**

What is trophy hunting doing in Africa?

**Question 10**

How much of trophy hunters' spending actually ends up at the local level?

**Question 11**

What percentage of people read Biological Conservation magazine each year?

**Question 12**

What is the role of photographic tourism in Africa?

**Question 13**

How does photographic ecotourism help protect Africa's wildlife?

**Question 14**

Which group funded the Biological Conservation study?

**Question 15**

According to another study, less than 3% were used to attach trophies?

**Text number 28**

Various industries benefit from hunting and support hunting for economic reasons. In Tanzania, it is estimated that a safari hunter spends fifty to a hundred times more money than the average eco-tourist. The average photographic tourist may seek luxury accommodation, but the average safari hunter usually stays in tented camps. Safari hunters are also more likely to use remote areas that are not attractive to the typical eco-tourist. Proponents argue that these hunters enable anti-poaching activities and income generation for local communities [referred ].

**Question 0**

What are the benefits for different sectors?

**Question 1**

Where does a hunter spend an estimated 50-100 times more money than the average eco-tourist?

**Question 2**

Where does the average safari hunter live?

**Question 3**

Supporters argue that these hunters enable what kind of activity?

**Question 4**

What are the benefits for different sectors?

**Question 5**

In which country does a safari hunter spend an estimated 50-100 times more money than the average eco-tourist?

**Question 6**

What kind of accommodation does the average photographer look for on a trip around Tanzania?

**Question 7**

Where does the typical safari hunter hang his hat at night?

**Question 8**

Where can safari hunters go that won't attract less hardcore eco-tourists?

**Question 9**

How much does a safari hunter spend compared to the average eco-tourist?

**Question 10**

What is a photo tourist looking for?

**Question 11**

Where does a safari hunter usually stay?

**Question 12**

Which hunters allow anti-poaching activities?

**Question 13**

What kind of camps do eco-tourists usually stay in?

**Question 14**

What are the benefits of tented camps?

**Question 15**

Why do tent camps support hunting?

**Question 16**

How many times a day do local communities stop poaching?

**Question 17**

Which country has the most areas that are difficult to reach by car?

**Text number 29**

Hunting also has a significant economic impact in the US, with many companies specialising in hunting equipment or specialised tourism. Many different technologies have been created to help hunters, even iPhone apps. Today's hunters come from many different economic, social and cultural backgrounds. In 2001, more than thirteen million hunters hunted for an average of eighteen days and spent more than 20.5 billion dollars on their sport. In the United States, hunting license revenues are used for state game management programs, including wildlife habitat protection.

**Question 0**

In which countries does hunting have a significant economic impact?

**Question 1**

What do many companies specialise in when it comes to hunting?

**Question 2**

"There's an app for that!", what have different technologies been created to do?

**Question 3**

What backgrounds do today's hunters come from?

**Question 4**

How much money did thirteen million hunters spend on their sport in 2001?

**Question 5**

What is the economic impact of hunting in the US?

**Question 6**

What has been developed in the US to help hunters?

**Question 7**

One technique available to hunters in the United States is?

**Question 8**

How much money did hunters spend in 2001?

**Question 9**

What are the proceeds from hunting used for?

**Question 10**

In which country was the iPhone first developed?

**Question 11**

How much did consumers spend on the iPhone in 2001?

**Question 12**

What is the one thing that iPhone users were most in favour of in 2001?

**Question 13**

How many people owned an iPhone in 2001?

**Question 14**

How many different technologies have been used to create the iPhone?

**Text number 30**

However, excessive hunting and poachers have also greatly affected the markhor of many animals, including the quagga, big-tailed deer, Steller's sea lion, Steller's sea lion, steller sea lion, mallard, mallard duck, Arabian oryx, Caspian and Javanese tiger, Sumatran rhinoceros, buffalo, North American mountain lion, alta argali, Asian elephant and many other animals, to endangerment, extinction and extinction, mainly for commercial sale or sport. All of these animals have been hunted to endangered or extinct status.

**Question 0**

What has been strongly affected by excessive hunting?

**Question 1**

What do the Steller sea lion, mallard duck and Javanese tiger have in common?

**Question 2**

Why have endangered animals been killed by poachers?

**Question 3**

How have the North American cougar and the Asian elephant been hunted?

**Question 4**

How is excessive hunting linked to species extinction?

**Question 5**

What contributes to vulnerability?

**Question 6**

What have poachers contributed to hunting?

**Question 7**

What is the main predator of the quagga?

**Question 8**

What animal did the Javanese tigers mainly hunt?

**Question 9**

What animal can you usually find with a markhor?

**Question 10**

What animal does thylacine usually try to avoid?

**Question 11**

Which animal resembled a North American cougar?

**Text number 31**

On March 16, 1934, President Franklin D. Roosevelt signed the Migratory Bird Hunting Stamp Act into law, requiring all hunters over the age of sixteen to purchase a stamp annually. The stamps are produced on behalf of the US Postal Service program and feature wildlife artwork selected through an annual contest. They play an important role in habitat conservation, as 98 percent of the funds raised from their sale go directly to purchase or lease wetland habitat for protection in the National Wildlife Refuge System.In addition to waterfowl, an estimated one-third of the nation's endangered species seek food and shelter in areas protected with Duck Stamp funds.

**Question 0**

Who signed the Migratory Bird Hunting Stamp Act?

**Question 1**

When did Roosevelt sign the Migratory Bird Hunting Stamp Act?

**Question 2**

What does the law require of all hunters over 16?

**Question 3**

Where does 98% of all money from stamp sales go?

**Question 4**

What is the estimated proportion of the country's endangered species that will benefit from the protection offered by the Duck Stamp Fund?

**Question 5**

Which law was signed in 1934?

**Question 6**

Which President signed this law?

**Question 7**

What is the legal requirement?

**Question 8**

What do stamps represent?

**Question 9**

What percentage of endangered species seek food and shelter in areas protected by Duck Stamp funds.

**Question 10**

In what year was the US Postal Service founded?

**Question 11**

Which President founded the US Postal Service?

**Question 12**

On what date was the National Wildlife Refuge System established?

**Question 13**

How many waterfowl in the United States were endangered in 1934?

**Question 14**

What is the minimum age required to enter the US Postal Service stamp art contest?

**Text number 32**

Since 1934, the sale of federal duck stamps has generated $670 million in revenue and has been used to buy or lease 5 200 000 hectares (8 100 square metres; 21 000 km2) of habitat. The stamps serve as a permit to hunt migratory birds, as an entry ticket to all National Wildlife Refuge areas, and are also considered collectibles, often purchased for aesthetic reasons outside the hunting and birding communities. Although non-hunters purchase a significant number of Duck Stamps, 87% of their sales come from hunters, which makes sense since hunters are required to purchase them. The Migratory Bird Conservation Commission (MBCC) is responsible for distributing the funds.

**Question 0**

How much money has the sale of federal duck stamps generated since 1934?

**Question 1**

How many acres have been bought or leased through the sale of federal duck stamps since 1934?

**Question 2**

What do the stamps allow the buyer to do?

**Question 3**

Who accounts for 87% of duck stamp sales?

**Question 4**

Who is responsible for distributing the money raised from the sale of stamps?

**Question 5**

How much money has been raised thanks to the Duck Stamp Act?

**Question 6**

How much land has the Duck Stamp Act been able to buy?

**Question 7**

What are Duck Stamps?

**Question 8**

What percentage of sales comes from hunters?

**Question 9**

Who manages the distribution of funds?

**Question 10**

In what year was the MBCC founded?

**Question 11**

What is needed to access MBCC areas?

**Question 12**

What does MBCC buy in significant quantities?

**Question 13**

What percentage of hunters belong to the MBCC?

**Question 14**

What does it take to work at the MBCC?

**Text number 33**

The Arabian oryx, a large antelope species, once inhabited much of the desert regions of the Middle East. However, the species' striking appearance made it (along with its close relatives the sabre-horned oryx and addax) popular prey for sport hunters, especially foreign executives of oil companies operating in the region. The use of cars and high-powered rifles destroyed the species' only advantage: speed, and it became extinct in the wild solely because of sport hunting in 1972. The taxidermy followed suit, and the addax became critically endangered. However, the Arabian oryx has now made a comeback and is classified as an endangered species after becoming extinct in the wild, due to conservation measures such as captive breeding.

**Question 0**

Which large antelope species once lived in the desert regions of the Middle East?

**Question 1**

Why did sport hunters consider Arabian oryx worth hunting?

**Question 2**

When did the Arabian oryx disappear from the wild because of sport hunting?

**Question 3**

How did hunters destroy the evolutionary advantage of the oryx?

**Question 4**

Which animal has made a miraculous comeback and been classified as "vulnerable" from "extinct in the wild"?

**Question 5**

What is a large antelope species?

**Question 6**

Where did large antelope species once live?

**Question 7**

What destroyed the Arabian oryx's only advantage of speed.

**Question 8**

When did the Arabian horse become extinct?

**Question 9**

What has contributed to the rise of the Arabian horse from extinct to endangered?

**Question 10**

In what year was oil first drilled in the Middle East?

**Question 11**

Why has the saber-horned oryx made a comeback?

**Question 12**

What status has the Saxon oryx been elevated to?

**Question 13**

To what status was Addax elevated in 1972?

**Question 14**

What was the first feature of the Middle East that attracted foreign oil executives?

**Text number 34**

The American bison is a large bovine species that inhabited much of western North America before the 1800s, living on the prairies in large herds. However, large herds of bison attracted market hunters, who killed dozens of bison just for their hides and left the rest to rot. Thousands of these hunters quickly wiped out the bison herds, bringing the population down from several million in the early 1800s to a few hundred by 1880. Conservation efforts have allowed the population to grow, but bison remain near threatened.

**Question 0**

What kind of creature is my American bison?

**Question 1**

Where did American bison live before the 1800s?

**Question 2**

What parts of the bison did the market hunters leave behind that they didn't need?

**Question 3**

What was the population of buffalo herds before they were wiped out by thousands of market hunters?

**Question 4**

What is the current status of bison?

**Question 5**

What attracted the large herds of bison?

**Question 6**

In which part of North America did the bison live?

**Question 7**

Why were bison killed?

**Question 8**

What did the hunter do with the rest of the bison?

**Question 9**

What bison are left?

**Question 10**

Where did the market hunters come from in the 1880s?

**Question 11**

How much did bison leather cost in the 19th century?

**Question 12**

What was the population of the United States in 1880?

**Question 13**

Which areas of the United States were first settled in 1880?

**Question 14**

What were the buildings exposed to when they were built in a forest area?

**Text number 35**

Botswana, on the other hand, was recently forced to ban trophy hunting because of a sharp decline in wildlife. Antelope numbers collapsed across Botswana, resulting in a decline in predators, while elephant numbers remained stable and hippo numbers increased. According to the Botswana government, trophy hunting is at least partly to blame, but many other factors such as poaching, drought and habitat loss are also to blame. Uganda recently did the same, claiming that "the benefits of sport hunting were one-sided and unlikely to deter poaching or improve [Uganda's] capacity to manage wildlife reserves".

**Question 0**

Why has Botswana been forced to ban trophy hunting altogether?

**Question 1**

What caused the collapse in the number of this species and the decline in the number of predators?

**Question 2**

Which species increased in number while the number of elephants remained stable?

**Question 3**

What factors other than trophy hunting are responsible for the decline of Botswana's wildlife?

**Question 4**

Which other African country has also recently banned trophy hunting?

**Question 5**

What did Botswana have to do recently?

**Question 6**

Which animal declined in Botswana?

**Question 7**

Which animal numbers have increased in Botswana?

**Question 8**

Which animal numbers remain stable in Botswana?

**Question 9**

What else is responsible for the decline in animal numbers in Botswana and Uganda?

**Question 10**

What happened to the Ugandan antelope?

**Question 11**

What happened in Uganda when the number of antelope declined?

**Question 12**

What was the elephant population like in Uganda?

**Question 13**

Which animal population grew in Uganda?

**Question 14**

What did Botswana claim about not being able to stop sport hunting?

**Document number 439**

**Text number 0**

Kathmandu (/ˌkɑːtmɑːnˈduː/; Nepali pronunciation: [kɑʈʰmɑɳɖu]) is the capital and largest municipality of Nepal. It is also the headquarters of the South Asian Association for Regional Cooperation (SAARC). It is the only city in Nepal with the administrative status of Mahanagar (metropolitan city) as opposed to Upa-Mahanagar (sub-metropolitan city) or Nagar (city). Kathmandu is the nucleus of Nepal's largest agglomeration in the Kathmandu Valley, which includes Lalitpur, Kirtipur, Madhyapur Thimi, Bhaktapur and a number of smaller communities. Kathmandu is also informally known as "KTM" or "tri-city". According to the 2011 census, Kathmandu metropolis has a population of 975,453 and an area of 49.45 km2.

**Question 0**

Which country is the capital of Kathmandu?

**Question 1**

What does Upa-Mahanagar mean in English?

**Question 2**

What is Kathmandu's other nickname besides KTM?

**Question 3**

How many people lived in Kathmandu in 2011?

**Question 4**

How many square kilometres is Kathmandu?

**Text number 1**

The city has a rich history dating back almost 2,000 years, as can be seen from the inscriptions found in the valley. Religious and cultural festivals are an important part of life for the people of Kathmandu. The majority of Kathmandu's inhabitants follow Hinduism and many others follow Buddhism. There are also people of other religions in Kathmandu, which gives Kathmandu a cosmopolitan culture. Nepali is the most widely spoken language in the city. English is understood by the educated residents of Kathmandu. Historic areas of Kathmandu were destroyed in the 7.8 magnitude earthquake of 25 April 2015.

**Question 0**

How long has Kathmandu been around?

**Question 1**

What suggests that Kathmandu is as old as it is?

**Question 2**

What is the majority religion in Kathmandu?

**Question 3**

What do most people in Kathmandu speak?

**Question 4**

What is the second language spoken by educated people in Kathmandu?

**Text number 2**

The city of Kathmandu is named after the Kasthamandap temple in Durbar Square. Kastha (काष्ठ) means "tree" in Sanskrit and Mandap (/मण्डप) means "covered shelter". This temple, also known as Maru Satal in Newar, was built in 1596 by King Laxmi Narsingh Malla. The two-storey building was made entirely of wood, with no iron nails or logs. Legend has it that all the timber used to build the pagoda came from a single tree. The building collapsed during a major earthquake on 25 April 2015.

**Question 0**

What does काष्ठ mean in English?

**Question 1**

What is the English translation of the word Mandap?

**Question 2**

What do Newar speakers call the Kasthamandap temple?

**Question 3**

Who was responsible for building the Kasthamandap temple?

**Question 4**

On what day was Maru Satal destroyed?

**Text number 3**

In ancient manuscripts dating back to the 20th century, colophons refer to Kathmandu as Kasthamandap Mahanagar in Nepal Mandala. Mahanagar means 'great city'. The city is called 'Kasthamandap' in a vow still recited by Buddhist priests to this day. Thus Kathmandu is also known as Kasthamandap. In medieval times, the city was sometimes called Kantipur (कान्तिपुर), a name derived from two Sanskrit words - Kanti and pur. 'Kanti' is one of the names of the goddess Lakshmi, and 'pur' means place.

**Question 0**

What is the ancient name of Kathmandu?

**Question 1**

How to transliterate कान्तिपुर into English?

**Question 2**

Who is also known as Kanti?

**Question 3**

How do you say place in Sanskrit?

**Question 4**

What is the English translation of the word Mahanagar?

**Text number 4**

Kathmandu's ancient history is described in its traditional myths and legends. According to Swayambhu Purana, present-day Kathmandu was once a huge and deep lake called "Nagdaha" because it was full of snakes. Bodhisatwa Manjusri cut the lake empty with his sword and the water drained out of it, and he founded a city called Manjupattan and made Dharmakar the ruler of the valley land. After some time, a demon called Banasur blocked the drain and the valley was once again a lake. Then Lot Krishna came to Nepal, killed Banasur and drained the water again. He brought some gopis with him and made Bhuktaman king of Nepal.

**Question 0**

Which water body is said to have been located in Kathmandu?

**Question 1**

What animals in particular lived in Nagdaha?

**Question 2**

Who was the founder of Manjupattan?

**Question 3**

What kind of creature was Banasur?

**Question 4**

Who was the murderer of Banasur?

**Text number 5**

There is very little historical information about the period before the medieval Licchavis rulers. According to Gopalraj Vansawal, a genealogy of Nepalese rulers, the rulers of the Kathmandu Valley before the Licchavis were the Gopalas, Mahispalas, Aabhirs, Kirants and Somavanshes. The Kirata dynasty was founded by Yalamber. During the Kirata period, a settlement called Yambu was located north of old Kathmandu. In some Sino-Tibetan languages, Kathmandu is still called Yambu. Another smaller settlement called Yengal was located in the south of old Kathmandu, near Manjupattan. During the reign of Jitedast, the seventh Kirata ruler, Buddhist monks arrived in the Kathmandu Valley and established a forest monastery at Sankhu.

**Question 0**

Who was the founder of the Kirata dynasty?

**Question 1**

In which geographical area of Kathmandu did Yambu once live?

**Question 2**

Which languages do speakers of Kathmandu sometimes call Yambu?

**Question 3**

Where in Kathmandu was Yengal located?

**Question 4**

To which religion did Sankhu Monastery belong?

**Text number 6**

The Licchavi, from the Indo-Gangetic plain, migrated north and defeated the Kiratas, establishing the Licchavi dynasty. During this period, following the genocide of the Shakya by Virudhaka at Lumbin, the survivors migrated north and entered the Sankhu forest monastery disguised as koliyo. From Sankhu they migrated to Yambu and Yengali (Lanjagwal and Manjupattan) and established the first permanent Buddhist monasteries in Kathmandu. This laid the foundation for Newar Buddhism, the world's only surviving Sanskrit-based Buddhist tradition. With their migration, Yambu was called Koligram and Yengal Dakshi Koligram for most of the Licchavi era.

**Question 0**

Who won the war between the Licchaves and the Kiratas?

**Question 1**

Who were the wandering Shakyas pretending to be?

**Question 2**

Which sect of Buddhism is the only remaining sect based on the Sanskrit language?

**Question 3**

Who killed Shakya?

**Question 4**

What name during the Licchavi dynasty was typically used to refer to Yengal?

**Text number 7**

Eventually, the Licchav ruler Gunakamadeva merged Koligram and Dakshi Koligram and founded the city of Kathmandu. The city was designed in the shape of Manjushri's sword, Chandrahrasa. The city was surrounded by eight barracks guarded by Ajimat. One of these barracks is still in use at Bhadrakal (in front of Singha Durbar). The city served as an important transit point for trade between India and Tibet, which led to a huge growth in architecture. Descriptions of buildings such as Managriha, Kailaskut Bhawan and Bhadradiwas Bhawan have been found in the surviving diaries of travellers and monks of this period. For example, the famous 7th century Chinese traveller Xuanzang described Kailaskut Bhawan, the palace of the Licchavi king Amshuverma. The trade route also led to cultural exchanges. The artworks of the Newar people - the indigenous people of the Kathmandu Valley - were highly sought after at the time, both in the valley and throughout the Himalayas. Newar artists travelled widely throughout Asia, creating religious art for their neighbours. Araniko, for example, led a group of his compatriots across Tibet and China. Princess Bhrikuti of Nepal, who married the Tibetan ruler Songtsän Gampo, was instrumental in bringing Buddhism to Tibet.

**Question 0**

Kathmandu was born from the merger of which two settlements?

**Question 1**

Who is the historical founder of Kathmandu?

**Question 2**

Who did Chandrahrasa belong to?

**Question 3**

How many barracks guarded ancient Kathmandu?

**Question 4**

Which two countries usually traded through ancient Kathmandu?

**Text number 8**

The era of Licchav was followed by the era of Malla. The Tirhut rulers fled after the Muslim invasion of the Kathmandu Valley in the north. They intermarried with Nepalese royalty, leading to the Malla period. The early years of the Malla period were turbulent, with attacks by Khas and Turkic Muslims. There was also a devastating earthquake that claimed the lives of a third of Kathmandu's population, including King Abhaya Malla. These disasters led to the destruction of most of the architecture of the Licchav era (such as Mangriha and Kailashkut Bhawan) and the loss of literature collected in various monasteries in the city. Despite the initial difficulties, Kathmandu again rose to prominence and dominated trade between India and Tibet for most of the Malla period. Nepalese currency became the standard currency for trade across the Himalayas.

**Question 0**

Who ruled Nepal after Licchav?

**Question 1**

Who attacked Nepal alongside Khas at the beginning of the Malla season?

**Question 2**

How much of Kathmandu's population died in the ancient earthquake?

**Question 3**

Apart from Mangriha, which building of the Licchavi period was destroyed in an ancient earthquake?

**Question 4**

Which important Nepali person died in the Kathmandu earthquake?

**Text number 9**

Towards the end of the Malla period, there were four fortified cities in the Kathmandu Valley: Kantipur, Lalitpur, Bhaktapur and Kirtipur. These served as the capitals of the Malla League of Nepal. These states competed with each other in art, architecture, aesthetics and trade, leading to tremendous development. The kings of this period directly contributed to or participated in the construction of public buildings, plazas and temples, as well as the development of water troughs, the institutionalisation of trusts (called guths), the codification of laws, the writing of dramas and the staging of plays in town squares. Evidence of ideas coming from India, Tibet, China, Persia and Europe, among other places, can be found in stone inscriptions from the time of King Pratap Malla. Books from this period have been found describing the Tantric tradition (e.g. Tantrakhyan), medicine (e.g. Haramekhala), religion (e.g. Mooldevshashidev), law, morality and history. In addition, the Amarkosh, a Sanskrit-Nepali Bhasa dictionary dating back to 1381 AD, was found. Architecturally significant buildings from this period include Kathmandu Durbar Square, Patan Durbar Square, Bhaktapur Durbar Square, the former Durbar in Kirtipur, Nyatapola, Kumbheshwar, Krishna Temple and others.

**Question 0**

How many cities were there in the Kathmandu Valley in the late Malla period?

**Question 1**

What were the fortified cities in the Kathmandu Valley in the late Malla Dynasty?

**Question 2**

Which cultures influenced Nepal in the later Malla period?

**Question 3**

What is an example of a medical book from the Malla period?

**Question 4**

When is Amarkosh scheduled?

**Text number 10**

The Gorkha Kingdom ended the Malla alliance after the Battle of Kathmandu in 1768. This marked the beginning of Kathmandu's modern era. The Battle of Kirtipur was the beginning of the Gorkha conquest of the Kathmandu Valley. Kathmandu was adopted as the capital of the Gorkha Empire, and the empire itself was named Nepal. In the early part of this era, Kathmandu retained its distinctive culture. During this period, buildings with typical Nepali architecture were constructed, such as the nine-storey Basantapur Tower. However, trade declined due to the constant wars with neighbouring countries. Bhimsen Thapa supported France against Great Britain, which led to the development of modern military structures such as the modern barracks in Kathmandu. The nine-storey Dharahara Tower was originally built during this period.

**Question 0**

Who won the battle of Kathmandu?

**Question 1**

What battle did the Gorkha forces use to conquer the Kathmandu Valley?

**Question 2**

How many storeys high was the Basantapur Tower?

**Question 3**

Which European country did Bhimsen Thapa oppose?

**Question 4**

How many floors were there in the Dharahara Tower?

**Text number 11**

Kathmandu is located in the north-western part of the Kathmandu Valley, north of the Bagmati River, and covers an area of 50.67 km2, with an average elevation of 1 400 m above sea level. The city is directly bordered by several other municipalities in the Kathmandu Valley: to the south of Bagmati, Lalitpur Sub-Metropolitan City (Patan), with which it now forms a single urban area surrounded by a ring road; to the south-west, Kirtipur Municipality; and to the east, Madyapur Thimi Municipality. In the north, the urban area extends to several village development committees. However, the urban agglomeration extends well beyond neighbouring municipalities, for example to Bhaktapur, and covers almost the entire Kathmandu Valley.

**Question 0**

Which river is south of Kathmandu?

**Question 1**

In which geographical part of the Kathmandu Valley is Kathmandu located?

**Question 2**

How many metres above sea level is Kathmandu?

**Question 3**

How big is Kathmandu in square kilometres?

**Question 4**

Where is Lalitpur Sub-Metropolitan City located in relation to the Bagmati River?

**Text number 12**

Kathmandu is crossed by eight rivers, the Bagmati, the main river of the valley, and its tributaries, of which the Bishnumati, Dhobi Khola, Manohara Khola, Hanumant Khola and Tukucha Khola are the most important. The mountains from which these rivers originate are between 1 500 and 3 000 m above sea level and have gorges that provide access to and from Kathmandu and its valley. From Nagarjuna Hill, an ancient canal once ran via Balaju to Kathmandu; this canal has now disappeared.

**Question 0**

How many rivers run through Kathmandu?

**Question 1**

Where did the canal that once ended in Kathmandu originate?

**Question 2**

How many metres high are the mountains from which the Bagmati flows?

**Text number 13**

The Kathmandu agglomeration has not yet been officially defined. The Kathmandu Valley urban area is divided into three different districts (local government units), which extend very little beyond the valley rim, except for the relatively sparsely populated southern mountainous areas. They have the three highest population densities in the country. The districts have VDCs (villages), three municipalities (Bhaktapur, Kirtipur, Madhyapur Thimi), one metropolitan city (Lalitpur) and one metropolitan town (Kathmandu). Some parts of the district are still legally villages but are still densely populated, such as the Gonggabu VDC, which has a population density of over 20,000 people per km2 (2011 census). The following table describes the districts considered as urban:

**Question 0**

How many districts are included in the Kathmandu Valley Urban Area?

**Question 1**

What are Madhyapur Thimi, Kirtipur and Bhaktapur?

**Question 2**

How many metropolitan sub-cities are there in the districts of Kathmandu Valley?

**Question 3**

How many people live per square kilometre in Gonggabu VDC?

**Question 4**

What is another term for VDC?

**Text number 14**

Nepal has five major climate zones. Of these, the Kathmandu Valley is part of the warm temperate zone (altitude 1 200-2 300 m), which has a relatively temperate climate, atypical for the region. This zone is followed by the cool temperate zone, with altitudes ranging from 2 100 to 3 300 m. According to Köppen's climate classification, the lower areas of the city have a humid subtropical climate (Cwa), while the higher areas tend to have a subtropical highland climate. In the Kathmandu Valley, which represents the climate of the Kathmandu Valley, the average summer temperature ranges from 28-30 °C (82-86 °F). The average winter temperature is 10.1 °C (50.2 °F).

**Question 0**

What is the average winter temperature in the Kathmandu Valley in degrees Fahrenheit?

**Question 1**

Which climate classification does Kathmandu fall under, apart from subtropical highland?

**Question 2**

What is Köppen's abbreviation for humid subtropical climate?

**Question 3**

How many metres upwards is the cool temperate zone?

**Question 4**

How many major climate zones are there in Nepal?

**Text number 15**

The city's climate is usually warm, followed by cool nights and mornings. The weather is unpredictable, as temperatures can drop to 1°C or below in winter. During the 2013 cold front, winter temperatures in Kathmandu dropped to -4°C, with the lowest recorded on 10 January 2013, when it was -9.2°C. Rainfall is mostly monsoonal (about 65% of the total is concentrated in the monsoon months from June to August), with a significant decrease (100-200 cm) from eastern Nepal to western Nepal. Precipitation in the Kathmandu valley averages about 1 400 mm and in Kathmandu city 1 407 mm. The average humidity is 75%. The graph below is based on data from the 2005 edition of Weather Meteorology published by the Nepal Institute of Standards and Meteorology. The chart shows the minimum and maximum temperatures for each month. The annual rainfall was 1 124 mm (44.3 inches) in 2005 according to the monthly data in the table above. During the decade 2000-2010, Kathmandu experienced highly variable and unprecedented rainfall anomalies. This was mainly due to the annual variation of the southwest monsoon. For example, 2003 was the wettest year on record in Kathmandu with more than 2 900 mm of rainfall due to an exceptionally strong monsoon season. In contrast, 2001 saw only 356 mm (14 inches) of rainfall due to an exceptionally weak monsoon season.

**Question 0**

What is the typical morning temperature in Kathmandu?

**Question 1**

How much of Kathmandu's annual rainfall occurs in the monsoon months?

**Question 2**

On what day in 2013 was it 15.4 degrees Celsius in Kathmandu?

**Question 3**

In which months does the monsoon occur in Nepal?

**Question 4**

In which year did Kathmandu receive the most rain in history?

**Text number 16**

Kathmandu's location and terrain have contributed significantly to the development of a stable economy that has lasted for millennia. The city is located in an ancient lake basin with fertile soil and flat terrain. This geography helped to create a society based on agriculture. This, combined with its location between India and China, helped make Kathmandu an important trading centre for centuries. Trading in Kathmandu is an ancient profession that flourished along the Silk Road branch connecting India and Tibet. For centuries, Kathmandu's Lhasa Newar traders have traded across the Himalayas and helped spread the arts and Buddhism to Central Asia. Other traditional occupations include farming, metal casting, wood carving, painting, weaving and ceramics.

**Question 0**

Which religion spread throughout Central Asia thanks in part to the Newar traders of Lhasa?

**Question 1**

The existence of which two countries contributed to Kathmandu becoming a trading centre?

**Question 2**

What was the traditional basis of Kathmandu's economy apart from trade?

**Text number 17**

Economic output in the metropolitan area alone is worth more than a third of national GDP about $6.5 billion in nominal GDP about $550 billion per year about $2,200 per capital income about three times the national average. Kathmandu exports handicrafts, works of art, garments, carpets, pashmina, paper; trade accounts for 21% of its economy [what?] Manufacturing is also important, accounting for 19% of Kathmandu's income. Clothing and wool carpets are the most important manufactured products. Other sectors of Kathmandu's economy include agriculture (9%), education (6%), transport (6%) and hotels and restaurants (5%). Kathmandu is famous for its lokta paper and pashmina scarves.

**Question 0**

Approximately how much of Nepal's GDP is generated in the Kathmandu metropolitan area?

**Question 1**

What do Kathmandu residents earn per capita per year?

**Question 2**

What is Kathmandu's GDP?

**Question 3**

How much of Kathmandu's economy is trade?

**Question 4**

What part of Kathmandu's economy consists of agriculture?

**Text number 18**

Tourism is considered the second most important economic activity in Nepal. This sector started around 1950, when the country's political structure changed and its isolation from the rest of the world ended. In 1956, air transport was introduced and the Tribhuvan highway was opened between Kathmandu and Raxaul (on the Indian border). In Kathmandu, separate organisations were set up to promote this activity, some of which include the Tourism Development Board, the Department of Tourism and the Civil Aviation Department. Nepal also became a member of several international tourism organisations. The establishment of diplomatic relations with other countries further enhanced this activity. The hotel industry, travel agencies, training of tourist guides and targeted advertising campaigns are the main reasons for the significant growth of the sector in Nepal and especially in Kathmandu.

**Question 0**

Approximately when did Nepal's tourism industry start?

**Question 1**

Which city was connected to Kathmandu via the Tribhuvan highway?

**Question 2**

When did construction of the Tribhuvan highway start?

**Text number 19**

Since then, Nepal's tourism industry has boomed; it is the country's most important economic activity.Tourism is a major source of income for most of the city's inhabitants, with several hundred thousand tourists visiting the city every year. Hindu and Buddhist pilgrims from all over the world visit Kathmandu's religious sites such as Pashupatinath, Swayambhunath, Boudhanath and Budhanilkantha. In 1961/62, the number of tourists was only 6,179, but in 1999/2000 it rose to 491,504. After the end of the Maoist insurgency, the number of tourists increased significantly to 509,956 in 2009. Since then, tourism has improved as the country became a democratic republic. In economic terms, foreign exchange was 3.8% of GDP in 1995/96, but then it started to fall [why?]. The high level of tourism is due to the natural splendour of the Himalayas and the country's rich cultural heritage.

**Question 0**

What is the most important industry in Nepal?

**Question 1**

Which religion is visited in Kathmandu, apart from Buddhism?

**Question 2**

How many tourists visited Kathmandu in 1961-62?

**Question 3**

Which event led to an increase in tourism in 2009?

**Question 4**

Which Nepalese mountains are said to attract tourists?

**Text number 20**

Thamel district is Kathmandu's main "tourist ghetto", full of guesthouses, restaurants, shops and bookshops catering to tourists. Another increasingly popular district is Jhamel, a name rhyming with Thamel for Jhamsikhel. Jhochhen Tol, also known as Freak Street, is Kathmandu's original passenger street popularised by the hippies of the 1960s and 1970s; it remains a popular alternative to Thamel. Asan is a bazaar and ceremony square on the old trade route to Tibet, and is a fine example of a traditional district.

**Question 0**

Which district of Kathmandu is known for being a tourist hotspot?

**Question 1**

Which district is also known as Jhamel?

**Question 2**

What is the traditional name for Freak Street?

**Question 3**

Which tourists first brought attention to the Jhocchen Toli?

**Text number 21**

When the tourism industry opened up after the political situation in Nepal changed in 1950, the hotel sector developed considerably. Now Kathmandu has several luxury hotels, including the Hyatt Regency, Dwarika's, TheYak & Yeti, The Everest Hotel, Hotel Radisson, Hotel De L'Annapurna, The Malla Hotel, Shangri-La Hotel (not operated by the Shangri-La Hotel Group) and The Shanker Hotel. There are several 4-star hotels, including Hotel Vaishali, Hotel Narayani, The Blue Star and Grand Hotel. The Garden Hotel, Hotel Ambassador and Aloha Inn are three-star hotels in Kathmandu. Hotels such as the Hyatt Regency, De L'Annapurna and Hotel Yak & Yeti are among the five-star hotels that also offer casinos.

**Question 0**

How many stars are there in Kathmandu Grand Hotel?

**Question 1**

What type of hotel is the Aloha Inn?

**Question 2**

De L'Annapurna is an example of what kind of hotel?

**Question 3**

What attractions does Hotel Yak & Yeti and Hyatt Regency have to offer?

**Text number 22**

The Kathmandu metropolitan area is divided into five sectors: the central sector, the eastern sector, the northern sector, the core centre and the western sector. The city is further divided into 35 administrative districts. The Council administers the Kathmandu Metropolitan Area through 177 elected representatives and 20 appointed members. It meets every six months to review, discuss and approve the annual budget and take important policy decisions. The 35 district profile documents prepared by the Kathmandu Metropolitan Area Council are detailed and provide information on the population, structure and condition of houses, types of roads, education, health and financial facilities, entertainment services, parking facilities, security arrangements, etc. for each district. It also includes a list of completed, ongoing and planned development projects, as well as information on cultural heritage, festivals, historical sites and local residents. Section 16 is the largest, covering 437.4 hectares, and Section 26 is the smallest, covering 4 hectares.

**Question 0**

How many sectors make up the Kathmandu metropolitan area?

**Question 1**

Which sector in Kathmandu does not have the word "sector" in its name?

**Question 2**

Why is Kathmandu divided into 35 districts?

**Question 3**

How many members of the Council have been nominated rather than elected?

**Question 4**

How many hectares is Kathmandu's 26th district?

**Text number 23**

The fire brigade, known as Barun Yantra Karyalaya, opened its first station in Kathmandu in 1937 with a single vehicle. An iron tower was erected to control the city and guard against fires. As a precautionary measure, firemen were sent to areas designated as accident-prone areas. In 1944, the fire brigade was extended to the neighbouring towns of Lalitpur and Bhaktapur. In 1966, the fire brigade was established at Kathmandu airport. In 1975, a donation from the West German government added seven fire engines to the Kathmandu Fire Brigade. The city's fire brigade is also supervised by an international NGO, the Firefighters Volunteer Association of Nepal (FAN), which was established in 2000 to raise public awareness of fire and improve safety.

**Question 0**

What is the name of the Kathmandu Fire Brigade?

**Question 1**

In what year was the Kathmandu Fire Brigade founded?

**Question 2**

When did Bhaktapur get fire service coverage?

**Question 3**

How many fire engines did West Germany donate to Kathmandu?

**Question 4**

What is the role of a FAN?

**Text number 24**

Over the years, people of different ethnicities have lived in the city, resulting in different traditions and cultural practices. In one decade, the city's population grew from 427 045 in 1991 to 671 805 in 2001. The population was projected to reach 915,071 in 2011 and 1,319,597 in 2021. With the population growth, the 5,076.6 hectares (12,545 acres) of land under KMC's control has increased to 8,214 hectares (20,300 acres) in 2001. In this new area, the population density, which was 85 in 1991, is still 85 in 2001, and is expected to increase to 111 in 2011 and 161 in 2021.

**Question 0**

What was the population of Kathmandu in 1991?

**Question 1**

How many people are likely to be living in Kathmandu in 2021?

**Question 2**

How dense was Kathmandu's population in 1991?

**Question 3**

How many hectares of land did KMC control in 2001?

**Text number 25**

The largest ethnic groups are Newar (29.6%), Matwali (25.1% Sunuwar, Gurung, Magars, Tamang, etc.), Khas Brahmins (20.51%) and Chettris (18.5%). Tamangs from the surrounding mountainous districts can be seen in Kathmandu. More recently, other ethnic groups from the hill districts and the Terai caste groups have also formed a significant part of the city's population. The main languages are Nepali and Nepali Bhasa, and many understand English, especially in the service sector. The main religions are Hinduism and Buddhism.

**Question 0**

What percentage of Kathmandu's population are Chetrians?

**Question 1**

What is the third largest ethnic group in Kathmandu?

**Question 2**

What are the main religions in Kathmandu?

**Question 3**

Which sector in Kathmandu is particularly well-known to English speakers?

**Question 4**

What is the main language of Kathmandu besides Nepali?

**Text number 26**

The ancient trade route between India and Tibet through Kathmandu enabled the integration of the artistic and architectural traditions of other cultures with local art and architecture. Over the centuries, Hindu and Buddhist religious practices have influenced the monuments in the city of Kathmandu. The architectural treasures of the Kathmandu Valley are classified under the seven categories of known heritage monuments and buildings. In 2006, Unesco declared these seven groups of monuments a World Heritage Site. The seven monument zones cover 188.95 hectares (466.9 acres), while the buffer zone extends to 239.34 hectares (591.4 acres). The seven monument zones, originally demarcated in 1979 and slightly modified in 2006, include the Durbar squares of Hanuman Dhokan, Patan and Bhaktapur, the Hindu temples of Pashupatinath and Changunarayan, and the Buddhist stupas of Swayambhu and Boudhanath.

**Question 0**

What religion is Changunarayan?

**Question 1**

What are the Buddhist monuments in Boudhanath?

**Question 2**

How many hectares are the Kathmandu Valley Monument areas?

**Question 3**

How large is the buffer zone of the Kathmandu Valley Monument in hectares?

**Question 4**

When did the monuments in the Kathmandu Valley receive WHS status?

**Text number 27**

The literal meaning of Durbar Square is "place of palaces". There are three surviving Durbar squares in the Kathmandu Valley and one surviving in Kirtipur. Kathmandu's Durbar Square is located in the old city and contains heritage buildings representing the four kingdoms (Kantipur, Lalitpur, Bhaktapur, Kirtipur), the earliest dating back to the Licchavi dynasty. The complex has 50 temples and is divided into two quadrangles of Durbar Square. The outer square contains Kasthamandap, Kumari Ghar and Shiva-Parvati temple; the inner square contains Hanuman Dhoka Palace. The squares were badly damaged in the April 2015 Nepal earthquake.

**Question 0**

Where is Durban Square, which has not been preserved?

**Question 1**

What is the oldest dynasty represented by the buildings in Kathmandu's Durbar Square?

**Question 2**

How many temples are there in Kathmandu's Durbar Square?

**Question 3**

When was the major earthquake that damaged Kathmandu's Durbar Square?

**Question 4**

How many kingdoms have buildings in Kathmandu's Durbar Square?

**Text number 28**

Kumari Ghar is a palace in the centre of Kathmandu city, next to Durbar Square, where the royal Kumari, chosen from among several Kumaris, lives. Kumari or Kumari Devi is a tradition in South Asian countries to worship young, pre-pubescent girls as manifestations of divine feminine energy or devi. In Nepal, the selection process is very strict. Kumari is believed to be the bodily incarnation of the goddess Taleju (Nepali name for Durga) until the girl's menstruation begins, after which the goddess is believed to leave her body. Serious illness or great blood loss due to injury are also reasons for her return to normal. The current royal Kumari, four-year-old Matina Shakya, was installed in October 2008 by the Maoist government that replaced the monarchy.

**Question 0**

What is the name of Durga in Nepali?

**Question 1**

How long is Kumar believed to be incarnated in Taleju?

**Question 2**

Who was the royal Kumari at the end of 2008?

**Question 3**

What kind of government did Nepal have after the monarchy?

**Text number 29**

Pashupatinath Temple is a famous 5th century Hindu temple dedicated to Lord Shiva (Pashupati). The Pashupatinath Temple is located on the banks of the Bagmati River in the eastern part of Kathmandu and is the oldest Hindu temple in Kathmandu. It served as the home of the national god, Lord Pashupatinath, until Nepal was secularised. However, the Mughal invaders destroyed a significant part of the temple in the 13th century, and little remains of the original 5th century exterior of the temple. The present temple was built in the 19th century, although the bull image and the black four-headed image of Pashupati are at least 300 years old. The temple is a UNESCO World Heritage Site. Shivaratri or Lord Shiva's Night is the main festival held here, attracting thousands of devotees and sadhus[1].

**Question 0**

When was the Pashupatinath temple built?

**Question 1**

What religion does the Pashupatinath Temple serve?

**Question 2**

What is another name for Pashupati?

**Question 3**

Who was Nepal's national god before secularisation?

**Question 4**

Who damaged the Pashupatinath temple in the 13th century?

**Text number 30**

Pashupatinath believers (mainly Hindus) are allowed to enter the temple premises, but non-Hindus can only view the temple from across the Bagmati River. The priests performing the services at this temple have been Brahmins from Karnataka in South India since the time of Malla King Yaksha Malla. This tradition is believed to have started at the request of Adi Shankaracharya, who sought to unite the Bharatam (Unified India) states by encouraging cultural exchange. This practice is also followed in other temples sanctified by Adi Shankaracharya across India.

**Question 0**

Which people make up the majority of Pashupatinath's followers?

**Question 1**

Which part of India are the priests of Pashupatinath from?

**Question 2**

To which dynasty did Yaksha Malla belong?

**Question 3**

Who supposedly encouraged the use of Karnataka Brahmin priests in the Pashupatinath temple?

**Question 4**

What is another term for Bharatam?

**Text number 31**

Boudhanath (also Bouddhanath, Bodhnath, Baudhanath or Khāsa Chaitya) is one of the holiest Buddhist sites in Nepal, along with Swayambhu. It is a very popular tourist destination. Boudhanath is known as Khāsti to Newaris and Bauddha or Bodhnāth to Nepalis. The stupa is located about 11 km from the centre and north-eastern edge of Kathmandu, and its massive mandala makes it one of the largest spherical stupas in Nepal. Boudhanath became a UNESCO World Heritage Site in 1979.

**Question 0**

To which religion is Boudhanath sacred?

**Question 1**

What do the Newars call Boudhanath?

**Question 2**

What is the name of Boudhanath in Nepali?

**Question 3**

How far is Boudhanath from Kathmandu in kilometres?

**Question 4**

When did UNESCO make Boudhanath a World Heritage Site?

**Text number 32**

At the bottom of the stupa are 108 small images of Dhyani Buddha Amitabha. It is surrounded by a brick wall with 147 recesses, each with four or five prayer wheels inscribed with the mantra om mani padme hum. At the northern entrance, past which visitors must pass, is a shrine dedicated to Ajima, the goddess of smallpox. Every year the stupa attracts many Tibetan Buddhist pilgrims who pray and pray, pray and pray. Thousands of prayer flags are hoisted up from the top of the stupa to the bottom, circling the perimeter of the complex. Thanks to Tibetan refugees from China, more than 50 Tibetan gompas (monasteries) have been built around Boudhanath.

**Question 0**

Who is pictured on the tripod?

**Question 1**

Which deity is Ajima?

**Question 2**

What are gompas?

**Question 3**

Which religion regularly visits the stupa?

**Question 4**

What mantra is engraved on the prayer wheels of the stupa?

**Text number 33**

Swayambhu is a Buddhist stupa on a hill in the northwest of the city. It is one of the oldest religious sites in Nepal. Although the site is considered Buddhist, it is revered by both Buddhists and Hindus. The stupa consists of a dome with a dome at the base; above the dome is a cubic structure with the eyes of the Buddha looking in all four directions. Above the 4 sides are pentagonal torans with statues carved on them. Behind and above the torans are thirteen levels. Above all the levels is a small space with a gajur above it.

**Question 0**

In which part of Kathmandu is Swayambhu located?

**Question 1**

Which religion does Swayambhu belong to?

**Question 2**

Who other than Buddhists worship at Swayambhu?

**Question 3**

How many directions does Swayambhu Buddha look?

**Question 4**

What is in the small area above the levels in Swayambhu?

**Text number 34**

The Kathmandu Valley is described as a "vast treasure trove of art and sculpture" made of wood, stone, metal and terracotta, which abounds in temples, shrines, stupas, gompas, chaityas and palaces. Artifacts can also be seen on street corners, alleys, private yards and open spaces. Most of the artworks are in the form of icons of gods and goddesses. The Kathmandu Valley has had this art scene for a very long time, but it only gained worldwide recognition after the country opened up to the outside world in 1950.

**Question 0**

The Kathmandu Valley is home to art made of metal, terracotta, wood and what other materials?

**Question 1**

What is the most typical art form in the Kathmandu Valley?

**Question 2**

In what year can Nepal be said to have come to the attention of the outside world?

**Text number 35**

The religious art of Nepal, especially Kathmandu, consists of iconic symbolism depicting the Mother Goddess, such as Bhavani, Durga, Gaja-Lakshmi, Hariti-Sitala, Mahsishamardini, Saptamatrika (seven mother goddesses) and Sri-Lakshmi (goddess of wealth). In addition to the Hindu gods and goddesses from the 3rd century BC onwards, Buddhist monuments from the Ashokan period (Ashokan is said to have visited Nepal in 250 BC) have adorned Nepal in general and the valley in particular. These artistic and architectural constructions span three major periods of development: the Licchavi or Classical period (500-900 AD), the post-Classical period (1000-1400 AD), which was strongly influenced by Palla art, and the Malla period (from 1400 onwards), which had clear Tantric influences combined with Tibetan demonology art.

**Question 0**

What kind of deities are Bhavani and Durga?

**Question 1**

What is the deity of Sri Lakshmi?

**Question 2**

Which important person arrived in Nepal 250 years before the birth of Christ?

**Question 3**

When did Licchav's season end?

**Question 4**

What is the second name for Licchav's season?

**Text number 36**

Kathmandu has several museums and art galleries, including the Nepal National Museum and the Nepal Natural History Museum. Nepal's art and architecture is a combination of two ancient religions, Hinduism and Buddhism. These are widely reflected in the many temples, shrines, stupas, monasteries and palaces located in the seven well-defined monument zones of the Kathmandu Valley, which are part of the UNESCO World Heritage Sites. This combination is also reflected in the design and exhibitions of museums and art galleries throughout Kathmandu and its sister cities of Patan and Bhaktapur. The museums display unique artefacts and paintings from the 5th century AD to the present day, including archaeological exports.

**Question 0**

Which other major Nepali museum is located in Kathmandu besides the Nepal National Museum?

**Question 1**

What period are the oldest objects in Kathmandu's museums from?

**Question 2**

Which religion, apart from Buddhism, has had a significant impact on Nepal?

**Question 3**

Which area of the Kathmandu Valley has been designated a UNESCO World Heritage Site?

**Question 4**

How many monument zones are there in the Kathmandu Valley?

**Text number 37**

The National Museum is located in a historic building in the western part of Kathmandu, near the Swayambhunath stupa. The building was built in the early 19th century by General Bhimsen Thapa. It is the country's most important museum, with a large collection of historically and culturally significant weapons, art and antiquities. The museum was established in 1928 as a collection centre for war trophies and weapons, and was originally named Chhauni Silkhana, meaning 'Stone House of Arms and Ammunition'. Because of the museum's focus, it houses a large number of weapons, including locally made firearms used in wars, leather guns from the 1700s and 1900s, and medieval and modern wood, bronze, stone and paintings.

**Question 0**

In which area of Kathmandu is the National Museum located?

**Question 1**

Which stupa is near the National Museum?

**Question 2**

Who built the building that houses the National Museum?

**Question 3**

When was the National Museum founded?

**Question 4**

What does Chhauni Silkhana mean?

**Text number 38**

The Tribhuvan Museum contains artefacts related to King Tribhuvan (1906-1955). The museum contains a variety of artefacts, including his personal belongings, letters and papers, memorabilia relating to events in which he was involved, and a rare collection of photographs and paintings of members of the royal family. The Mahendra Museum is dedicated to King Mahendra of Nepal (1920-1972). Like the Tribhuvan Museum, it contains his personal belongings, such as decorative objects, stamps, coins and personal notes and manuscripts, but also structural reconstructions of his cabinet room and office room. Hanumandhoka Palace, a luxurious medieval palace complex in Durbar, has three separate museums of historical interest. These museums include the Birendra Museum, which contains artefacts related to the penultimate ruler of Nepal, Birendra.

**Question 0**

When did Tribhuvan die?

**Question 1**

What was the year of King Mahendra's birth?

**Question 2**

How many museums are there in Hanumandhoka Palace?

**Question 3**

Who was the penultimate king of Nepal?

**Question 4**

During which period was Hanumandhoka Palace built?

**Text number 39**

The Narayanhity Palace Museum enclosure is located in the north-central part of Kathmandu. 'Narayanhity' comes from the words Narayana, a form of the Hindu god Lord Vishnu, and Hiti, meaning 'water trough' (Vishnu's temple is opposite the palace, and the water trough is located east of the main entrance to the district). Narayanhity was a new palace in front of the old palace built in 1915, and was rebuilt in 1970 as a modern pagoda. It was built on the occasion of the marriage of the then heir to the throne, King Birenda Bir Bikram Shah. The south gate of the palace is at the junction of Prithvipath and Darbar Marg roads. The palace covers an area of 30 hectares (74 acres) and is fully protected by gates on all sides. This palace was the site of the Royal Nepalese Massacre. After the fall of the monarchy, it was converted into a museum.

**Question 0**

Where in Kathmandu is the Narayanhity Palace Museum located?

**Question 1**

What year was Narayanhity built?

**Question 2**

Whose marriage led to the construction of Narayanhity?

**Question 3**

How many hectares is Narayanhity Palace?

**Question 4**

Which god is Narayana?

**Text number 40**

The Taragaon Museum presents the modern history of the Kathmandu Valley. It aims to document 50 years of research and heritage conservation in the Kathmandu Valley and to document what artists from abroad, photographers, architects, architects and anthropologists have done in the second half of the 20th century. The actual structure of the museum will showcase restoration and rehabilitation efforts to preserve Kathmandu's architectural heritage. The museum was designed by Carl Pruscha (chief architect of the Kathmandu Valley) in 1970 and built in 1971. Restoration work began in 2010 to renovate the Taragaon Hostel into the Taragaon Museum. The design uses local brick and modern architectural elements such as circular, triangular and square shapes. The museum is a short walk from the Boudhnath stupa, which is visible from the museum tower.

**Question 0**

What is the Taragaon Museum dedicated to?

**Question 1**

Who is the designer of the Taragaon Museum?

**Question 2**

In what year was the Tarragon Museum built?

**Question 3**

Which stupa is located near the Taragaon Museum?

**Question 4**

What was the Taragaon Museum before it was a museum?

**Text number 41**

Kathmandu is Nepal's centre for art, showcasing the work of the country's contemporary artists as well as collections of historic artists. Patan in particular is an ancient city renowned for its fine arts and crafts. Kathmandu's art is vibrant, combining traditional and modern art from a wide range of national, Asian and global influences. Nepalese art is generally divided into two distinct strands: the idealistic traditional painting known in Nepal as Paubhas and perhaps more commonly in Tibet as Thangkas, closely linked to the country's religious history, and the contemporary Western style of painting, which includes nature-based compositions or abstract works based on tantric elements and social themes, for which Nepalese painters are well known. The Kathmandu Centre for Contemporary Art, a UK-based charity, promotes art internationally in Kathmandu.

**Question 0**

Kathmandu's contemporary art combines traditional influences with what kind of art?

**Question 1**

How many types of Nepalese artworks are typically divided into?

**Question 2**

What do Tibetans call traditional idealistic paintings?

**Question 3**

Which British charity works for the arts in Kathmandu?

**Question 4**

What do Nepalis call thangkas?

**Text number 42**

The Srijana Contemporary Art Gallery, located in the Bhrikutimandap Fairgrounds, features works by contemporary artists and sculptors and regularly hosts exhibitions. It also organises morning and evening classes for art schools. Also noteworthy is the Moti Azima Gallery in a three-storey building in Bhimsenthan, which houses an impressive collection of traditional utensils and handmade dolls, as well as objects typical of the medieval Newar house, providing an important insight into Nepal's history. The J Art Gallery is also located in Kathmandu, near the Durbarmarg Royal Palace in Kathmandu, and features works by renowned, established Nepali painters. The Nepal Art Council Gallery, located at the Babar Mahal, which leads to Tribhuvan International Airport, houses works by both local and international artists and regularly hosts art exhibitions in its large halls.

**Question 0**

Where can you find Srijana Contemporary Art Gallery?

**Question 1**

The Moti Azima gallery contains objects that could be found in a Nepalese house from which period?

**Question 2**

Which art gallery is located near the Royal Palace of Durbarmarg?

**Question 3**

Where is the Nepal Arts Council gallery located?

**Question 4**

Where can you take an art course in Nepalese art galleries?

**Text number 43**

The National Library of Nepal is located in Patan. It is the largest library in the country, with over 70 000 books. You can find books in English, Nepali, Sanskrit, Hindi and Nepal Bhasa. The library has rare Sanskrit and English scientific books from the 17th century AD onwards. Kathmandu also has the Kaiser Library, located in the Kaiser Mahal on the ground floor of the Ministry of Education building. This collection of some 45 000 books comes from the personal collection of Emperor Shamsher Jang Bahadur Rana. It covers a wide range of subjects, including history, law, art, religion and philosophy, as well as a Sanskrit-language Tantra manual believed to be more than 1 000 years old. The 2015 earthquake caused severe damage to the Ministry of Education building and the contents of the Kaiser Library have been temporarily relocated.

**Question 0**

How many volumes does the National Library of Nepal have?

**Question 1**

In addition to Hindi, Sanskrit, Nepali and English, the National Library has books in which languages?

**Question 2**

Which ministry is located in the same building as the Kaiser Library?

**Question 3**

How many volumes are there in the Kaiser library?

**Question 4**

Who used to own the books in the Emperor's Library?

**Text number 44**

Kathmandu is the home of Nepali cinema and theatres. The city has several theatres, including the National Dance Theatre on Kanti Path, the Ganga Theatre, the Himalayan Theatre and the Aarohan Theatre Group, founded in 1982. M. Art Theater is located in the city. The Gurukul Theatre School organises the Kathmandu International Theatre Festival, which attracts artists from all over the world. Hanumandhoka's Durbar Square is also home to a mini theatre, established by the Durbar Preservation and Promotion Committee.

**Question 0**

Where can you find the National Dance Theatre in Kathmandu?

**Question 1**

What year did the Aarohan Theatre Group start?

**Question 2**

What is the work of the Gurukul Theatre School?

**Question 3**

Who built the theatre in Hanumandhoka Durbar Square?

**Text number 45**

Most of Kathmandu's cuisines are non- vegetarian. However, vegetarianism is not uncommon, and vegetarian food can be found all over the city. The consumption of beef is very rare and is considered taboo in many places. Buff (water buffalo meat) is very common. In Kathmandu, especially among the Newars, there is a strong tradition of eating buff, which is not found elsewhere in Nepal. Consumption of pork was considered taboo until a few decades ago. Thanks to a mix with Kirat cuisine in eastern Nepal, pork has found its place in Kathmandu's cuisine. It is considered taboo by a fringe population of devout Hindus and Muslims. Muslims forbid the eating of pork according to the Koran, while Hindus eat all varieties except cow meat because they consider the cow a goddess and a symbol of purity. The main breakfast for locals and visitors is usually Momo or Chowmein.

**Question 0**

What meat is very rarely eaten in Kathmandu?

**Question 1**

What animal is the buff from?

**Question 2**

Which people are particularly known for buff-eating?

**Question 3**

Which cuisine uses pork in particular?

**Question 4**

What do Kathmandu residents usually eat for breakfast?

**Text number 46**

In 1955, there was only one Western restaurant in Kathmandu. Since then, numerous restaurants have opened in Kathmandu, serving Nepali, Tibetan, Chinese and Indian cuisine. Many other restaurants have been opened for locals, expatriates and tourists. The growth of tourism in Kathmandu has led to culinary creativity and the development of hybrid cuisine to cater to tourists, such as the American chop suey, a sweet and sour milk sauce with crunchy noodles, commonly topped with a fried egg, and other variations on traditional Western dishes. Continental food can be found in selected places. International chain restaurants are rare, but some Pizza Hut and KFC outlets have recently opened. There are also several outlets of the international ice cream chain Baskin-Robbins.

**Question 0**

How many Western restaurants were there in Kathmandu around 1955?

**Question 1**

What restaurant chains are there in Kathmandu?

**Question 2**

How is an egg prepared in the American chop suey?

**Question 3**

Who eats in Kathmandu's restaurants besides locals and tourists?

**Question 4**

Besides Nepalese, Indian and Chinese cuisine, which cuisine has been the focus of Kathmandu restaurants?

**Text number 47**

There are more tea drinkers than coffee drinkers in Kathmandu. Tea is widely served, but it is very poor by Western standards. It is richer and contains tea leaves brewed with milk, sugar and spices. Alcohol is widely consumed, and there are numerous local variations of alcoholic drinks. Drink-driving is illegal and the authorities have a zero-tolerance policy. Ailaa and thwon (alcohol made from rice) are Kathmandu's alcoholic beverages, found in all local bhattis (places serving alcohol). Chhyaang, tongba (fermented millet or barley) and rakshi are alcoholic drinks from other parts of Nepal that can be found in Kathmandu. However, shops and bars in Kathmandu sell a wide range of Western and Nepali beers.

**Question 0**

Which drink is more popular in Kathmandu, coffee or tea?

**Question 1**

How would a Western tourist feel about the tea served in Kathmandu?

**Question 2**

What is used to make thwon?

**Question 3**

What are bhattis?

**Question 4**

What goes through the fermentation process to create a tongba?

**Text number 48**

Most of Kathmandu's fairs and festivals date back to the Malla period or earlier. Traditionally, these festivals are celebrated by the Newars. In recent years, these festivals have also been attended more widely by other Kathmandu people. As the capital of the Republic of Nepal, Kathmandu celebrates various national festivals. With the mass migration to the city, the Khas of the West, the Kirats of the East, the Bon/Tibetan culture of the North and the Mithila culture of the South meet and blend harmoniously in the capital. All Hindu and Buddhist communities in Kathmandu celebrate festivals such as Ghode Jatra (Horse Jatra), Indra Jatra, Dashain Durga Puja festivals, Shivratri and many others with devotion and enthusiasm. The social regulation is in line with Hindu traditions and ethics. Shah kings and previous kings followed them as devout Hindus and protectors of the Buddhist religion.

**Question 0**

From which era do most of Kathmandu's festivals date back?

**Question 1**

Who celebrated Kathmandu festivals before modern times?

**Question 2**

From which direction in Kathmandu does Khas originate?

**Question 3**

What does Ghode mean?

**Question 4**

As for Kathmandu, where do Tibetans live?

**Text number 49**

Both Hindus and Buddhists regard the Bagmati River, which flows through Kathmandu, as a sacred river, and many Hindu temples are located on its banks. The Bagmati is also important because Hindus are cremated on its banks and grenades are buried in the hills along its banks. According to Nepali Hindu tradition, the body must be dipped three times in the Bagmati before cremation. The chief mourner (usually the first son), who lights the funeral fire, must bathe in the holy river water immediately after the cremation. Many relatives participating in the funeral procession also bathe in the Bagmati River or sprinkle holy water on their bodies at the end of the cremation, as the Bagmati is believed to purify people spiritually.

**Question 0**

Who besides Hindus considers the Bagmati River sacred?

**Question 1**

What is done with Hindus after their death?

**Question 2**

What is done with the bodies of churchmen after death?

**Question 3**

Who is typically the main mourner at Hindu funerals?

**Question 4**

How many times will their bodies be put in Bagmat before the Hindus are cremated?

**Text number 50**

The legendary princess Bhrikut (7th century) of the Kathmandu Valley and the artist Araniko (1245-1306 AD) played a major role in spreading Buddhism to Tibet and China. Kathmandu has more than 108 traditional monasteries (Bahals and Bahis) based on Newar Buddhism. Kathmandu's permanent Tibetan Buddhist population has grown significantly since the 1960s, and there are now more than fifty Tibetan Buddhist monasteries in the area. With the modernisation of Newar Buddhism, various Theravada biharis have also been established.

**Question 0**

In which century is Bhrikuti said to have lived?

**Question 1**

When did Araniko die?

**Question 2**

Which religion did Araniko help evangelise?

**Question 3**

How many Newar Buddhist monasteries are there in Kathmandu?

**Question 4**

How many monasteries run by Tibetan Buddhists are there in the Kathmandu area?

**Text number 51**

Kirant Mundhum is one of the original animistic practices of Nepal. It is practiced by the Kirat people. Some animistic aspects of Kirant beliefs, such as ancestor worship (Ajima worship), are also found among Newars of Kirant origin. Ancient religious sites believed to be worshipped by the ancient Kirats, such as Pashupatinath, Wanga Akash Bhairabh (Yalambar) and Ajima, are today worshipped in Kathmandu by members of all Dharma religions. Kirats who migrated to Kathmandu from other parts of Nepal practice Mundhum in the city.

**Question 0**

What kind of religion is Kirant Mundhum?

**Question 1**

Who follows the Kirant Mudhum faith?

**Question 2**

Who worshipped at Wanga Akash Bhairabh in ancient times?

**Question 3**

What is another name for ancestor worship?

**Text number 52**

Sikhism is mainly practised in the Kupundole Gurudwara. There is also a former Sikh temple in Kathmandu, which is now defunct. Jainism is practised by a small community. There is a Jain temple in Gyaneshwar where Jains practice their faith. According to the Nepal Baha'i Spiritual Assembly, there are about 300 Baha'is in the Kathmandu Valley. They have a national office in Shantinagar, Baneshwor. Baha'is also teach children at the National Centre and other places in Kathmandu. Islam is practised in Kathmandu, but Muslims are a minority, accounting for about 4.2% of Nepal's population. There are reportedly 170 Christian churches in Kathmandu alone. There are also Christian mission hospitals, charities and schools. Nepalis who served as soldiers in the Indian and British armies and converted to Christianity during their service continue to practise their faith after returning to Nepal. They have contributed to the spread of Christianity and the building of churches in Nepal, especially in Kathmandu.

**Question 0**

Where to find the temple of Jain faith?

**Question 1**

How many Baha'is live in the Kathmandu Valley?

**Question 2**

Where is the Baha'i National Office in Nepal?

**Question 3**

What percentage of the population of Nepal is Muslim?

**Question 4**

How many Christian houses of worship are there in Kathmandu?

**Text number 53**

Tribhuwan University Medical Institute is Nepal's first medical college, located in Maharajgunj, Kathmandu. It was established in 1972 and started teaching medicine in 1978. Several medical colleges are also located in or around Kathmandu, including Kathmandu Medical College, Nepal Medical College, KIST Medical College, Nepal Army Institute of Health Sciences, National Academy of Medical Sciences (NAMS) and Kathmandu University School of Medicine (KUSMS).

**Question 0**

To which university does the Institute of Medicine belong?

**Question 1**

In which part of Kathmandu is the Institute of Medicine located?

**Question 2**

When did the Institute of Medicine start offering medical training?

**Question 3**

What is KUSMS?

**Question 4**

Which higher education institution is known as NAMS?

**Text number 54**

Football and cricket are the most popular sports among Nepal's younger generation, and there are several stadiums in the city. The sport is managed by the All Nepal Football Association (ANFA), which has its headquarters in Kathmandu. The city's only international football stadium is the Dasarath Rangasala Stadium, a multi-purpose stadium in Tripureshwor district, mainly used for football matches and cultural events. It is the largest stadium in Nepal with a capacity of 25 000 spectators and was built in 1956. It is also the venue of the annual Martyrs' Memorial League. The stadium was renovated with Chinese assistance before the 8th South Asian Games in Kathmandu and floodlights were installed. Kathmandu is home to Nepal's oldest football clubs, including RCT, Sankata and NRT. Other well-known clubs include MMC, Machhindra FC, Tribhuwan Army Club (TAC) and MPC.

**Question 0**

Besides cricket, which sport is very popular among young people in Nepal?

**Question 1**

Which body controls football in Nepal?

**Question 2**

How many people can fit in Dasarath Rangasala Stadium?

**Question 3**

In which part of Kathmandu is Dasarath Rangasala Stadium located?

**Question 4**

Who helped Nepal to renovate the Dasarath Rangasala Stadium?

**Text number 55**

The total length of Nepal's roads was recorded as (17 182 km (10 676 mi)) in 2003-2004. This fairly extensive road network has contributed to the economic development of the country, particularly in the agricultural, horticultural, vegetable, industrial and tourism sectors. Due to the hilly terrain, transport in Kathmandu is mainly by road and air. Kathmandu is connected to the Tribhuvan Highway to the south, the Prithvi Highway to the west and the Araniko Highway to the north. The BP Highway linking Kathmandu to eastern Nepal is under construction.

**Question 0**

How many kilometres of roads were there in Nepal in 2004?

**Question 1**

Why do people mainly travel to Kathmandu by car or plane?

**Question 2**

Which highway linking Kathmandu to the rest of Nepal is currently under construction?

**Question 3**

Which direction is the Prithvi Highway from Kathmandu?

**Question 4**

If someone wanted to travel north from Kathmandu, which highway would be used?

**Text number 56**

The main international airport serving Kathmandu and thus Nepal is Tribhuvan International Airport, located about 6 kilometres from the city centre. It is operated by the Civil Aviation Authority of Nepal and has two terminals, one domestic and one international. Currently, some 22 international airlines connect Nepal to other destinations in Europe, Asia and the Middle East, including Istanbul, Delhi, Kolkata, Singapore, Bangkok, Kuala Lumpur, Dhaka, Islamabad, Paro, Lhasa, Chengdu and Guangzhou. The recent expansion of the international terminal has reduced the distance to aircraft and in October 2009 it became possible to fly direct to Kathmandu from Amsterdam with Arkefly. Since 2013, Turkish Airlines has connected Istanbul to Kathmandu. Regionally, several Nepali airlines, including Agni Air, Buddha Air, Cosmic Air, Nepal Airlines and Yeti Airlines, operate services from the city to other major cities in Nepal.

**Question 0**

What is Nepal's main international airport?

**Question 1**

How many kilometres is it from Kathmandu city centre to Tribhuvan International Airport?

**Question 2**

How many airlines use Tribhuvan International Airport for international flights?

**Question 3**

From which city does Arkefly offer non-stop flights to Kathmandu?

**Question 4**

Who operates services between Kathmandu and Istanbul?

**Text number 57**

The Kathmandu Metropolitan City (KMC) has established an International Relations Secretariat (IRC) to promote international relations. KMC's first international relations were established in 1975 in Eugene, Oregon, USA. This activity has been further enhanced by the establishment of formal relations with 8 other cities: the city of Motsumoto in Japan, Rochester in the USA, Yangon (formerly Rangoon) in Myanmar, Xi'an in the People's Republic of China, Minsk in Belarus and Pyongyang in the Democratic Republic of Korea. KMC is continuously seeking to increase interaction with SAARC countries, other international agencies and many other major cities around the world to improve Kathmandu's urban governance and development programmes.

**Question 0**

In which US state did Kathmandu first enter into an international relationship?

**Question 1**

What was Yangon known as in the past?

**Question 2**

Which Belarusian city does Kathmandu have a relationship with?

**Question 3**

In what year did Kathmandu establish its first international relations?

**Question 4**

What is the first word in KMC?

**Document number 440**

**Text number 0**

Myocardial infarction (MI) or acute myocardial infarction (AMI), commonly known as a heart attack, occurs when blood flow to a part of the heart stops and the heart muscle is damaged. The most common symptom is chest pain or discomfort that can spread to the shoulder, arm, back, neck or chin. The pain is often in the middle or left side of the chest and lasts for more than a few minutes. The discomfort can sometimes feel like heartburn. Other symptoms may include shortness of breath, nausea, weakness, cold sweats or a feeling of tiredness. Around 30% of people have atypical symptoms, and women are more likely to have atypical symptoms than men. Around 5% of people over 75 have had a stroke with few or no symptoms. Myocardial infarction can cause heart failure, irregular heartbeat or cardiac arrest.

**Question 0**

What is the scientific name of the circulatory system?

**Question 1**

What percentage of women have had a heart attack?

**Question 2**

How many people have chest pain during a heart attack?

**Question 3**

What is heartburn commonly known as?

**Question 4**

How long does heartburn last?

**Text number 1**

Most heart attacks are caused by coronary heart disease. Risk factors include high blood pressure, smoking, diabetes, lack of exercise, obesity, high blood cholesterol, poor diet and excessive alcohol consumption. The mechanism of myocardial infarction often involves complete blockage of the coronary artery due to rupture of the atherosclerotic plaque. Myocardial infarctions are less commonly caused by coronary artery spasms, which can be due to cocaine, significant emotional stress and extreme cold, among other things. Several tests such as ECGs, blood tests and coronary angiography help to make the diagnosis. An ECG can confirm ST-segment elevation myocardial infarction if ST elevation is present. Commonly used blood tests are troponin and, less commonly, creatine kinase MB.

**Question 0**

What is used to strengthen an arterial spasm?

**Question 1**

Which test contains cocaine?

**Question 2**

What kind of rupture helps prevent MI?

**Question 3**

What causes extreme cold?

**Question 4**

What does coronary angiography look for?

**Text number 2**

Aspirin is the appropriate immediate treatment for suspected myocardial infarction. Nitroglycerin or opioids can be used to treat chest pain, but they do not improve the overall outcome. Supplemental oxygen should be used for those with low oxygen levels or shortness of breath. In ST-elevation myocardial infarction, treatments to try to restore blood flow to the heart are typically recommended and include angioplasty, in which the arteries are pushed open, or thrombolysis, in which the blockage is removed with drugs. For people who have had a non-ST-segment elevation myocardial infarction (NSTEMI), the blood thinner heparin is often used, and for those at high risk, angioplasty may also be performed. For people with multiple coronary artery blockages and diabetes, bypass surgery (CABG) may be recommended instead of angioplasty. After a heart attack, lifestyle changes and long-term treatment with aspirin, beta-blockers and statins are usually recommended.

**Question 0**

Which pharmacy product is a bad treatment for MI?

**Question 1**

An extra cupboard does not improve what?

**Question 2**

What medicine is used to remove blockages?

**Question 3**

Which surgery is designed to slow down blood flow?

**Question 4**

What blood thinner is used in ST-elevation therapies?

**Text number 3**

Symptoms of a heart attack usually start gradually, within several minutes, and rarely immediately. Chest pain is the most common symptom of acute myocardial infarction and is often described as a feeling of tightness, pressure or squeezing. Chest pain caused by myocardial ischaemia (lack of blood and therefore lack of oxygen) is called angina pectoris. The pain most often radiates to the left arm, but it can also radiate to the lower jaw, neck, right arm, back and upper abdomen, where it may resemble heartburn. The Levine sign, where a person localises chest pain by clenching their fist on the sternum, has traditionally been thought to predict cardiac chest pain, although a prospective observational study showed that its positive predictive value is weak.

**Question 0**

What type of heart problem typically starts immediately?

**Question 1**

How is left arm pain often described?

**Question 2**

What is a good way to predict a heart attack?

**Question 3**

What is the term for left arm pain?

**Question 4**

What causes oxygen deficiency?

**Text number 4**

Shortness of breath occurs when damage to the heart limits the efficiency of the left ventricle, causing left ventricular failure and resulting pulmonary oedema. Other symptoms include diaphoresis (excessive sweating), weakness, dizziness, nausea, vomiting and palpitations. These symptoms are probably due to a massive increase in catecholamines in the sympathetic nervous system caused by pain and circulatory abnormalities due to myocardial dysfunction. In myocardial infarction, loss of consciousness (due to insufficient cerebral blood flow and cardiogenic shock) and sudden death (often due to the development of ventricular fibrillation) may occur.

**Question 0**

What is excessive weakness?

**Question 1**

Diaphoresis causes a massive rise in what hormones?

**Question 2**

Which nervous system is responsible for breathlessness?

**Question 3**

What is left ventricular failure?

**Question 4**

What kind of shock can cause sudden death?

**Text number 5**

Atypical symptoms are more common in women, the elderly and diabetics than in men and younger people. Women also report more symptoms than men (average 2.6 vs. 1.8 symptoms in men). The most common symptoms of myocardial infarction in women are shortness of breath, weakness and fatigue. Fatigue, sleep disturbance and shortness of breath have been reported as frequent symptoms, which can occur months before the actual clinically manifest ischaemic event. In women, chest pain may be less predictive of coronary ischaemia than in men. Women may also experience back or jaw pain during an attack.

**Question 0**

How many symptoms do people with diabetes typically report?

**Question 1**

What are the most common symptoms in men?

**Question 2**

How long after the ischaemic event do the symptoms appear?

**Question 3**

What better predicts coronary ischaemia in women?

**Text number 6**

At least a quarter of all heart attacks are silent, with no chest pain or other symptoms. These cases can be detected later by ECG, blood enzyme tests or autopsy, without any previous history of related conditions. Estimates of the prevalence of silent myocardial infarctions range from 22-64%. Silent myocardial infarction is more common in the elderly, in people with diabetes mellitus and after heart transplantation, probably because the donor heart is not fully innervated by the recipient's nervous system. In people with diabetes, differences in pain threshold, autonomic neuropathy and psychological factors have been cited as possible explanations for asymptomatic heart failure.

**Question 0**

What percentage of silent cases are later detected by ECG?

**Question 1**

People with which disease are least likely to have a silent heart attack?

**Question 2**

Why is the donor heart more sensitive to the pain of a heart attack?

**Question 3**

What has been ruled out as possible explanations for silent myocardial infarctions in diabetics?

**Question 4**

What percentage of myocardial infarctions are detected by blood enzyme tests?

**Text number 7**

Smoking (including passive smoking) and short-term exposure to air pollutants such as carbon monoxide, nitrogen dioxide and sulphur dioxide (but not ozone) have been linked to heart attack. Other factors that increase the risk of stroke and are associated with worse outcomes after stroke include lack of physical activity and psychosocial factors such as low socioeconomic status, social isolation and negative emotions. Shift work is also associated with a higher risk of MI. Acute and long-term consumption of large amounts of alcohol (3-4 or more) increases the risk of MI.

**Question 0**

What kind of air pollution does tobacco smoking cause?

**Question 1**

How many cigarettes a day increase the risk of a heart attack?

**Question 2**

Increased physical activity is bad for what?

**Question 3**

Short-term exposure to 3-4 doses what is dangerous?

**Text number 8**

For saturated fat, the evidence is unclear. Some suggest that there is evidence that reducing saturated fat is beneficial, in particular eating polyunsaturated fats instead of saturated fat. Others say that there is little evidence that reducing saturated fat in the diet or increasing the intake of polyunsaturated fat has an effect on heart attack risk. Dietary cholesterol does not appear to have a significant effect on blood cholesterol levels, so recommendations on its consumption may not be needed. Trans fats appear to increase the risk.

**Question 0**

Which product has been shown to be unequivocally dangerous?

**Question 1**

Research suggests that polyunsaturated fat should be replaced with what?

**Question 2**

What are the main factors that affect blood cholesterol?

**Question 3**

What kind of cholesterol requires cautious restrictions?

**Question 4**

What reduces the risk?

**Text number 9**

Genome-wide association studies have identified 27 genetic variants associated with an increased risk of myocardial infarction. The strongest association with MI has been found for the 9p21 gene locus, which contains the CDKN2A and 2B genes, although the individual nucleotide polymorphisms implicated are located in the non-coding region. Most of these variants are in regions not previously associated with coronary artery disease. The following genes are associated with MI: PCSK9, SORT1, MIA3, WDR12, MRAS, PHACTR1, LPA, TCF21, MTHFDSL, ZC3HC1, CDKN2A, 2B, ABO, PDGF0, APOA5, MNF1ASM283, COL4A1, HHIPC1, SMAD3, ADAMTS7, RAS1, SMG6, SNF8, LDLR, SLC5A3, MRPS6, KCNE2.

**Question 0**

How many gene variants have been shown to reduce the risk of myocardial infarction?

**Question 1**

PCSK9 is found in which locus?

**Question 2**

How many genetic variants are there in the 9p21 gene locus?

**Question 3**

What has been observed in the 9p21 coding region?

**Question 4**

SORT1 is associated with a lower risk of getting what?

**Text number 10**

Acute myocardial infarction refers to the two subtypes of acute coronary syndrome, namely non-ST-elevation and ST-elevation myocardial infarctions, which are most often (but not always) a manifestation of coronary artery disease. The most common triggering event is rupture of atherosclerotic plaque in the epicardial coronary artery, leading to a coagulation cascade that sometimes results in complete occlusion of the artery. Atherosclerosis is the gradual accumulation of cholesterol and fibrous tissue in plaques in the wall of arteries (in this case coronary arteries), usually over decades. The angiographic irregularities in the blood flow column reflect the narrowing of the arterial lumen as a result of decades of atherosclerosis. Plaques can become unstable, rupture and also contribute to the formation of a blood clot that blocks the artery; this can happen within minutes. When a sufficiently severe plaque rupture occurs in the coronary arteries, it leads to myocardial infarction (myocardial necrosis). It is estimated that in a typical myocardial infarction, one billion heart cells are lost.

**Question 0**

How many subtypes of ST-elevation myocardial infarction are there?

**Question 1**

What are always the manifestations of arterial disease?

**Question 2**

How long will MI last?

**Question 3**

How many plaques become unstable in a typical heart attack?

**Question 4**

How long does the angiography take?

**Text number 11**

If the heart's impaired blood supply lasts long enough, it triggers a process called an ischaemic cascade; the heart cells in the blocked coronary artery die (mainly through necrosis) and do not grow back. They are replaced by a collagen scar. Recent studies show that another form of cell death, apoptosis, also plays a role in the development of tissue damage after myocardial infarction. As a result, a person's heart is permanently damaged. Scarring of the myocardium also poses a risk of potentially life-threatening cardiac arrhythmias (arrhythmias) and can lead to the formation of a ventricular aneurysm, which can rupture with catastrophic consequences.

**Question 0**

What is triggered by necrosis?

**Question 1**

What is a collagen scar?

**Question 2**

What is another name for a ventricular aneurysm?

**Question 3**

Apoptosis is the death of which artery?

**Question 4**

What is impaired circulation called?

**Text number 12**

Damaged heart tissue conducts electrical impulses more slowly than normal heart tissue. The difference in conduction velocity between injured and undamaged tissue can trigger a reconnection or feedback loop, which is thought to be the cause of many fatal arrhythmias. The most serious of these arrhythmias is ventricular fibrillation (V-Fib/VF), a very fast and chaotic heart rhythm that is the leading cause of sudden cardiac death. Another life-threatening arrhythmia is ventricular tachycardia (V-tach/VT), which can cause sudden cardiac death. However, VT usually leads to a fast heart rate, which prevents the heart from pumping blood efficiently. Cardiac output and blood pressure can fall to dangerous levels, which can lead to coronary ischaemia and the expansion of an infarct.

**Question 0**

Normal heart tissue is slower than what?

**Question 1**

What is the name of a slower than normal arrhythmia?

**Question 2**

V-tach is the leading cause of what?

**Question 3**

What do electrical impulses trigger?

**Question 4**

Rising blood pressure can cause more what?

**Text number 13**

Myocardial infarction in plaque is caused by underlying atherosclerosis. Inflammation is known to be an important step in the process of atherosclerotic plaque formation. C-reactive protein (CRP) is a sensitive but non-specific marker of inflammation. Elevated blood levels of CRP, especially when measured by high-sensitivity assays, can predict the risk of developing cerebral infarction, stroke and diabetes. In addition, some MI drugs may also lower CRP levels. High-sensitivity CRP assays are not recommended for use in population screening, but may be used optionally at the discretion of the physician for those with other risk factors or known coronary artery disease. It remains uncertain whether CRP plays a direct role in atherosclerosis.

**Question 0**

What is called plaque placement?

**Question 1**

CRP is known to play a direct role in what?

**Question 2**

What specific marker indicates inflammation?

**Question 3**

MI drugs usually raise what?

**Question 4**

What kind of screening is usually recommended?

**Text number 14**

For a person to have STEMI, there must be a new ST elevation in two or more contiguous ECG leads in addition to the angina pectoris detected on the ECG. This must be greater than 2 mm (0.2 mV) in men and greater than 1.5 mm (0.15 mV) in women if it is in leads V2 and V3 of the ECG, or greater than 1 mm (0.1 mV) if it is in other leads of the ECG. The new left bundle branch block used to be thought of as ST elevation, but this is no longer the case. In early STEMI, there may be only T wave peaks, and ST elevation develops later.

**Question 0**

How many cases of angina must a person report to have STEMI?

**Question 1**

What can ST elevation develop into?

**Question 2**

The ECG must show less than how many mV for a man to be considered to have STEMI?

**Question 3**

What are the newly added qualifications for STEMI?

**Question 4**

Which two named conductors must be greater than 1 mm to be counted?

**Text number 15**

In stable patients whose symptoms have resolved at the time of assessment, nuclear medicine may use technetium (99mTc) sestamibi (aka "MIBI imaging") or thallium-201 chloride to visualise areas of reduced blood flow in response to physiological or pharmacological stress. Thallium can also be used to determine tissue viability, distinguishing whether a non-functioning heart muscle is truly dead or merely dormant or stunned. Medical associations and professional guidelines recommend that a doctor confirms that a person is at high risk of myocardial infarction before performing imaging studies to make a diagnosis. Patients with normal ECGs who are able to exercise, for example, do not deserve routine imaging. Imaging studies such as stress radionuclide myocardial perfusion imaging or stress echocardiography can confirm the diagnosis when the patient's history, physical examination, ECG and cardiac biomarkers suggest the likelihood of a problem.

**Question 0**

What is used to investigate blood clots in unstable patients?

**Question 1**

What is another name for thallium-201?

**Question 2**

What is technetium used for in tissue identification?

**Question 3**

What needs to be determined after an imaging study?

**Question 4**

The patient does not need routine imaging when they have what kind of biomarker?

**Text number 16**

There is some controversy about the effect of dietary fat on the development of cardiovascular disease. People are often advised to follow a diet in which less than 30% of energy intake comes from fat, less than 7% of energy intake is in the form of saturated fat and cholesterol is less than 300 mg/day. Replacing saturated fat with mono-unsaturated fat is also recommended, as consumption of polyunsaturated fat instead of saturated fat may reduce the risk of coronary heart disease. Olive oil, rapeseed oil and similar products should be used instead of saturated fat.

**Question 0**

How many mg of fat is recommended in a healthy person's diet?

**Question 1**

What percentage of polyunsaturated fats should be in a person's daily energy intake?

**Question 2**

What is a good substitute for olive oil?

**Question 3**

Nutritionists recommend a diet with more than 30% of what?

**Question 4**

What controversy have nutritionists largely settled?

**Text number 17**

Aspirin has been extensively studied in people at increased risk of heart attack. Based on numerous studies in different groups (e.g. diabetics and people with diabetes), the benefit does not appear to be so great that it outweighs the risk of excessive bleeding. Despite this, many clinical guidelines still recommend aspirin for primary prevention, and some researchers believe that those at very high risk of cardiovascular disease but low risk of bleeding should continue to receive aspirin.

**Question 0**

Which medicine has been shown to have significant benefits for people at risk of having a heart attack?

**Question 1**

Most studies tend to focus on people with which disease?

**Question 2**

What side effects are people with diabetes more likely to experience?

**Question 3**

Based on the lack of benefits, what has largely stopped asprin from being recommended?

**Question 4**

Aspirin is recommended for people at high risk of both cardiovascular disease and what?

**Text number 18**

The main treatments for myocardial infarction with ST elevation on the ECG (STEMI) are thrombolysis and percutaneous coronary intervention. Primary percutaneous coronary intervention (PCI) is the preferred treatment for STEMI if it can be performed in time. If PCI cannot be performed within 90-120 minutes, thrombolysis is recommended, preferably within 30 minutes of arrival at the hospital. If the person has had symptoms for 12-24 hours, thrombolysis is less justified and if symptoms have been present for more than 24 hours, it is not recommended.

**Question 0**

What is an abbreviated way to refer to thrombolysis?

**Question 1**

PCI and which treatment should be performed within 90-120 minutes?

**Question 2**

How long does the PCI procedure take?

**Question 3**

What treatment is recommended after 24 hours?

**Question 4**

When should ECG evidence be taken?

**Text number 19**

Thrombolysis is the administration of a medication that activates enzymes that normally destroy blood clots. Thrombolytic agents include streptokinase, reteplase, alteplase and tenecteplase. In the absence of contraindications (such as a high risk of bleeding), thrombolysis can be given as a pre-hospital or in-hospital treatment. When given to people suspected of having STEMI within 6 hours of symptom onset, thrombolytic therapy saves one in 43 lives who receive it. The risks were severe bleeding (1 in 143 patients) and brain haemorrhage (1 in 250 patients). It is unclear whether pre-hospital thrombolysis reduces deaths in people with STEMI compared to in-hospital thrombolysis. Pre-hospital thrombolysis reduces the time to thrombolytic treatment based on studies in higher income countries.

**Question 0**

Which enzymes in the body typically destroy blood clots?

**Question 1**

What is an example of a contraindication that must be present in thrombolysis?

**Question 2**

How many people are given thrombolytic medicines?

**Question 3**

If thrombolytic drugs are given 6 hours after starting, what is the likelihood of bleeding?

**Question 4**

How many hours have passed since the onset of symptoms before thrombolysis was administered?

**Text number 20**

People with acute non-ST-elevation coronary syndrome (non-ST-elevation ACS or NSTEACS) should receive aspirin. Clopidogrel is added in many cases, particularly if the risk of cardiovascular events is considered high and early PCI is being considered. Depending on whether early PCI is planned, a factor Xa inhibitor or an antithrombin booster (fondaparinux or low molecular weight heparin) may be added. In very high-risk situations, platelet glycoprotein αIIbβ3a receptor inhibitors such as eptifibatide or tirofiban may be used.

**Question 0**

When is clopidogrel removed?

**Question 1**

What is the abbreviation for NSTEACS?

**Question 2**

Clopidogrel is a kind of what kind of blocker?

**Question 3**

Which inhibitors are used in low-risk scenarios?

**Question 4**

What is the molecular weight of eptifibatide?

**Text number 21**

Cardiac rehabilitation is beneficial for many people who have had a heart attack, even if the heart is severely damaged and the left ventricle is failing; ideally, other conditions that could hinder participation should be optimally treated. Rehabilitation should start soon after discharge from hospital. The programme may include lifestyle advice, exercise, social support and recommendations on driving, flying, sports participation, stress management and sexual intercourse.

**Question 0**

Cardiac rehabilitation is not an option in what circumstances?

**Question 1**

In cardiac rehabilitation, it is often recommended to stop which activities?

**Question 2**

What should you start doing as soon as you are admitted to hospital?

**Question 3**

When are other diseases treated?

**Text number 22**

Some risk factors for death include age, haemodynamic parameters (such as heart failure, cardiac arrest on hospital admission, systolic blood pressure or Killip's class two or higher), ST segment depression, diabetes, serum creatinine, peripheral vascular disease and elevated cardiac markers. Assessment of left ventricular ejection fraction may increase predictive power. The prognosis is worse if a mechanical complication such as papillary muscle or myocardial free wall rupture occurs. The morbidity and mortality of myocardial infarction has improved over the years due to improvements in treatment.

**Question 0**

How many ST segmentation classes are there?

**Question 1**

After which complication does the prognosis improve?

**Question 2**

What has decreased over the years?

**Question 3**

What are some examples of deviations in the ST segment?

**Question 4**

What are the risk factors?

**Text number 23**

Complications can appear immediately after a heart attack (acute phase) or take some time to develop (chronic problem). Acute complications can include heart failure, where the damaged heart can no longer pump enough blood around the body, left ventricular myocardial aneurysm, rupture of the ventricular septum or rupture of the free wall, mitral regurgitation, especially if the infarction causes papillary muscle dysfunction, Dressler's syndrome and abnormal heart rhythm such as ventricular fibrillation, ventricular tachycardia, atrial fibrillation and cardiac arrest. Long-term complications include heart failure, atrial fibrillation and an increased risk of a second heart attack.

**Question 0**

What is Dressler syndrome?

**Question 1**

What does a left ventricular aneurysm lead to?

**Question 2**

What causes mitral regurgitation?

**Question 3**

Atrial fibrillation can be just what kind of problem?

**Text number 24**

In contrast, IHD is becoming a more common cause of death in developing countries. In India, for example, IHD had become the leading cause of death by 2004, accounting for 1.46 million deaths (14% of all deaths), and deaths from IHD were expected to double between 1985 and 2015. Globally, the proportion of disability-adjusted life years (DALYs) lost due to ischaemic heart disease is projected to be 5.5% of all DALYs in 2030, making it the second leading cause of disability (after unipolar depressive disorder) and the leading cause of death by that date.

**Question 0**

What proportion of deaths is caused by unipolar depressive disorder?

**Question 1**

How many people died from IHD between 1985 and 2015?

**Question 2**

What is the world's leading cause of death?

**Question 3**

What proportion of deaths will be caused by IHD in 2030?

**Question 4**

When did IHD start to be a bigger problem in developing countries?

**Text number 25**

In common law, a heart attack is usually a disease, but sometimes it can also be an injury. This can create coverage problems in the administration of excess insurance schemes such as workers' compensation. In general, a heart attack is not covered by insurance, but it can be a work-related injury if it is caused by, for example, unusual mental stress or unusual strain. In addition, in some jurisdictions, heart attacks suffered by people in certain professions, such as police officers, may be classified as work-related injuries under the law or insurance. In some countries or states, a person who has had a heart attack may be prevented from engaging in activities that endanger the lives of others, such as driving a car or flying an airplane.

**Question 0**

What myocardial infarction is always considered?

**Question 1**

In which occupations can a heart attack not be classified as work-related?

**Question 2**

What is typically covered by MI?

**Question 3**

When is a stroke not considered a work-related injury?

**Question 4**

What usually treats MI as a disability?

**Document number 441**

**Text number 0**

Before the 1900s, the term 'matter' referred to ordinary matter made up of atoms, and did not include other energy phenomena such as light or sound. This concept of matter can be generalised from atoms to include all bodies that have mass even at rest, but this is vague because the mass of a body can arise from the motion and interaction energies of its (possibly massless) constituents. Thus, there is no universal definition of matter and it is not a fundamental concept in physics today. Matter is also used loosely as a general concept of the substance that makes up all observable physical objects.

**Question 0**

What did the term "thing" mean after the 20th century?

**Question 1**

What are atoms made of?

**Question 2**

What are two examples of a substance?

**Question 3**

Where can the mass of an object not come from?

**Question 4**

What is the current concept of matter?

**Text number 1**

All the everyday objects we can come across, touch or squeeze are made of atoms. This atomic material is in turn made up of interacting subatomic particles - usually a nucleus of protons and neutrons and a cloud of orbiting electrons. In general, science considers these combined particles to be matter because they have both rest mass and volume. In contrast, massless particles such as photons are not considered matter because they have neither rest mass nor volume. However, not all particles with rest mass have a classical volume, since fundamental particles such as quarks and leptons (sometimes equated with matter) are considered to be 'point particles', which have no effective size or volume. However, quarks and leptons together form 'ordinary matter' and their interactions contribute to the effective volume of the composite particles that form ordinary matter.

**Question 0**

What orbits around the electrons?

**Question 1**

What are protons and neutrons made of?

**Question 2**

What is the volume of all particles with a resting mass?

**Question 3**

What cannot affect the effective volume?

**Question 4**

What size or volume are the point particles?

**Text number 2**

A substance usually has four states (or phases): solid, liquid, gas and plasma. However, advances in experimental techniques have revealed other previously theoretical phases, such as Bose-Einstein condensates and fermion condensates. The focus on the elementary particle aspect of matter is also leading to new phases of matter, such as the quark-gluon plasma. Throughout the history of science, the exact nature of matter has been a subject of debate. The Greek philosophers Leucippus (~490 BC) and Democritus (~470-380 BC) were the first to propose the idea that matter is made up of discrete building blocks, the so-called particle theory.

**Question 0**

How many solids are there?

**Question 1**

According to which theory can a substance exist in four different states?

**Question 2**

Who proposed the Bose-Einstein theory?

**Question 3**

What new form of plasma did Democritus find?

**Question 4**

How long have researchers focused on the elementary particle perspective?

**Text number 3**

Matter should not be confused with mass, because in modern physics they are not quite the same thing. For example, mass is a conserved quantity, which means that its value remains constant over time in closed systems. However, matter is not conserved in such systems, although this is not obvious under the normal conditions on Earth, where matter is approximately conserved. Yet special relativity shows that matter can be lost by being converted into energy even in closed systems, and can also be created from energy in such systems. However, since mass (like energy) cannot be created or destroyed, the amount of mass and energy remains the same when matter (representing a given amount of energy) is converted into immaterial (i.e., non-material) energy. This is also true for the reverse transformation of energy into matter.

**Question 0**

What is considered the same as a substance?

**Question 1**

What does special relativity show that mass can do?

**Question 2**

What can be created or destroyed?

**Question 3**

What changes during the transformation of matter?

**Question 4**

What does not change in an open system?

**Text number 4**

Different disciplines use the term "matter" in different and sometimes incompatible ways. Some of these are based on loose historical meanings that date back to a time when there was no reason to distinguish between mass and matter. Thus, there is no single universally agreed scientific meaning for the word 'matter'. Scientifically, the term 'mass' is well defined, but the term 'matter' is not. Sometimes in physics, 'matter' is simply equated with particles that have rest mass (i.e. cannot move at the speed of light), such as quarks and leptons. However, in both physics and chemistry, matter has both wave-like and particle-like properties, the so-called wave-particle duality.

**Question 0**

What is always used in the same way in different sectors?

**Question 1**

What is ill-defined besides matter?

**Question 2**

What does a substance do in chemistry that it doesn't do in physics?

**Question 3**

What is the combination of mass and matter in chemistry?

**Question 4**

At what speed does matter move in physics?

**Text number 5**

In the context of relativity, mass is not additive in the sense that the rest masses of the particles in a system can be added together to give the total rest mass of the system. Thus, the more common view in relativity is that the amount of matter is not measured by the sum of the rest masses, but by the energy-momentum tensor. This tensor gives the total rest mass of the system. Thus, "matter" is sometimes taken to be everything that contributes to the energy-momentum of a system, i.e. everything that is not purely gravitational. This view is common in general relativity fields such as cosmology. According to this view, light and other massless particles and fields are part of matter.

**Question 0**

What is mass?

**Question 1**

What do you get by adding up the rest masses of the particles in the system?

**Question 2**

What can't the energy momentum sensor do?

**Question 3**

What does gravity do to the system?

**Question 4**

In which area is matter not considered to contribute to the energy momentum?

**Text number 6**

This is because, in this definition, electromagnetic radiation (such as light) and the energy of electromagnetic fields contribute to the mass of the systems and thus appear to add matter to them. For example, light radiation (or thermal radiation) trapped inside a box would add to the mass of the box, as would any energy trapped inside the box, including the kinetic energy of particles trapped inside the box. However, isolated individual particles of light (photons) and the isolated kinetic energy of massive particles are not usually considered to be matter.

**Question 0**

What kind of radiation does not produce mass?

**Question 1**

What is another name for electromagnetic radiation?

**Question 2**

What is another name for the isolated kinetic energy of massive particles?

**Text number 7**

The definition of relativity is complicated by two commonly used definitions of mass, one formally equivalent to total energy (and thus observer-dependent) and the other called rest mass or invariant mass, which is observer-independent. Only 'rest mass' is loosely equated with matter (because it can be weighed). Invariant mass in physics is usually used for unbound particle systems. However, the energies acting on an invariant mass can also be weighed in special circumstances, such as when a system with invariant mass is closed and has no net momentum (as in the box example above). Thus, a photon with no mass can (confusingly) still add mass to a system in which it is trapped. The same is true for the kinetic energy of particles, which by definition is not part of their rest mass, but which nevertheless adds rest mass to the systems in which these particles are trapped (for example, the added mass of the motion of gas molecules in a gas cylinder, or the thermal energy of any hot object).

**Question 0**

How much difficulty is there in determining the mass?

**Question 1**

What does the invariant mass correspond to?

**Question 2**

To which schemes does the resting mass apply?

**Question 3**

An unchanging mass cannot be weighed when the system has no what?

**Question 4**

Kinetic energy cannot add what kind of mass to a system?

**Text number 8**

Since such mass (kinetic energies of particles, energy of trapped electromagnetic radiation and stored potential energy of repulsive fields) is measured as part of the mass of ordinary matter in complex systems, the role of "massless particles" and "matter" of force fields remains unclear in such systems. These problems contribute to the lack of a rigorous definition of matter in science, although mass is more easily defined as the total stress energy mentioned above (this is also what is weighed on the scales, and what is the source of gravity)[citation needed].

**Question 0**

Where is electromagnetic radiation stored?

**Question 1**

The mass of kinetic energy particles is not considered part of what?

**Question 2**

What is usually clear in complex systems?

**Question 3**

Which sector has a clear definition of a substance?

**Question 4**

Mass is harder to define what?

**Text number 9**

A finer definition of 'matter' than the definition of atoms and molecules is: matter consists of what atoms and molecules are made of, i.e. everything that consists of positively charged protons, neutral neutrons and negatively charged electrons. However, this definition goes beyond atoms and molecules to include substances composed of these building blocks that are not just atoms or molecules, such as white dwarf matter - typically carbon and oxygen nuclei in a sea of degenerate electrons. At the microscopic level, the 'particles' of matter, such as protons, neutrons and electrons, obey the laws of quantum mechanics and exhibit wave-particle duality. At an even deeper level, protons and neutrons are composed of quarks and the force fields (gluons) that bind them together (see definition of quarks and leptons below).

**Question 0**

What is made up of negatively charged protons?

**Question 1**

What charge do atoms have?

**Question 2**

What type of substance is not included in this definition?

**Question 3**

What lies in the sea of protons?

**Question 4**

What are leptons made of?

**Text number 10**

Leptons (of which the electron is the best known) and quarks (which make up baryons, such as protons and neutrons) combine to form atoms, which in turn form molecules. Since atoms and molecules are said to be matter, it is natural to formulate the definition as follows: ordinary matter is anything that is made of the same things that atoms and molecules are made of (note, however, that these building blocks can also be used to make matter that is not an atom or molecule). Since electrons are leptons and protons and neutrons are made up of quarks, this definition in turn leads to matter being defined as quarks and leptons, which are two types of elementary fermions. Carithers and Grannis state.

**Question 0**

What is the most famous electron?

**Question 1**

What are quarks made of?

**Question 2**

Who defined that electrons are leptons?

**Question 3**

How many generation particles are there?

**Question 4**

What types of fermions are protons and neutrons?

**Text number 11**

However, the quark-lepton definition of ordinary matter does not only define the basic building blocks of matter, but also includes composites of constituents (e.g. atoms and molecules). Such composites contain interaction energy that holds the building blocks together and can constitute the bulk of the mass of the composite. For example, much of the mass of an atom is simply the sum of the masses of the protons, neutrons and electrons that make it up. However, at a deeper level, protons and neutrons are composed of quarks bound together by gluon fields (see quantum chromodynamics), and these gluon fields have a significant effect on the mass of hadrons. In other words, most of the 'mass' of ordinary matter is due to the binding energy of the quarks inside protons and neutrons. For example, the sum of the masses of the three quarks in a nucleon is about 700112525000000000000000000000000♠12.5 MeV/c2, which is small compared to the mass of a nucleon (about 70029380000000000000000000000000000♠938 MeV/c2). The upshot is that most of the mass of an everyday object comes from the interaction energy of its elementary components.

**Question 0**

What are the elementary forms of atoms and molecules?

**Question 1**

What holds the building blocks together?

**Question 2**

What is the mass of a proton?

**Question 3**

What binds an atom together?

**Question 4**

Most of the mass of binding energy is due to what?

**Text number 12**

In the Standard Model, matter particles are grouped into three generations, each consisting of two quarks and two leptons. The first generation consists of upward and downward quarks, the electron and the electron neutrino; the second generation consists of quarks that are quirky and strange, the muon and the muon neutrino; the third generation consists of quarks that are upward and downward and the tau and tau neutrino. The most natural explanation for this would be that the quarks and leptons of the higher generations are the excited states of the first generations. If this is the case, it would mean that quarks and leptons are compound particles rather than elementary particles.

**Question 0**

Which model has two generations?

**Question 1**

Which generation has the upward and downward myon and the neutrino of the myon?

**Question 2**

What kind of particles are tau and tau-neutrinos?

**Question 3**

Which generation is the charming and strange muse?

**Question 4**

How many electrons are there in a generation?

**Text number 13**

Baryonic matter is the part of the universe that consists of baryons (including all atoms). This part of the universe does not include dark energy, dark matter, black holes or various forms of decayed matter such as white dwarf stars and neutron stars. The microwave light detected by the Wilkinson Microwave Anisotropy Probe (WMAP) suggests that only about 4.6% of the part of the Universe that is within the range of the best telescopes (i.e. the matter that can be seen because light can reach us from it) is composed of baryonic matter. About 23% is dark matter and about 72% is dark energy.

**Question 0**

What does dark energy consist of?

**Question 1**

Which probe saw white dwarf stars?

**Question 2**

What percentage of the universe is made up of black holes?

**Question 3**

What percentage of the universe can be seen through a telescope?

**Question 4**

What type of light makes up 72% of the universe?

**Text number 14**

In physics, degenerate matter refers to the ground state of a fermionic gas at a temperature close to absolute zero. Paul's exclusion principle requires that there can only be two fermions in a quantum state, one spin-up and one spin-down. Thus, at zero temperature, fermions fill enough levels to accommodate all available fermions - and if there are many fermions, the maximum kinetic energy (called the Fermi energy) and pressure of the gas becomes very large and depends on the number of fermions rather than on temperature, unlike normal states of matter.

**Question 0**

What is the name of the principle of the gas ground state?

**Question 1**

What depends on the temperature of absolute zero?

**Question 2**

What is the lowest kinetic energy?

**Question 3**

What shrinks to fit into fermions?

**Question 4**

What is gas pressure?

**Text number 15**

Strange matter is a special form of quark matter, usually thought of as a liquid of up, down and strange quarks. Contrast this with nuclear matter, which is a liquid of neutrons and protons (themselves composed of up and down quarks), and non-random quark matter, which is a liquid of quarks containing only up and down quarks. At a sufficiently high density, the strange matter is expected to be colour superconducting. The strange matter is expected to exist in the core of neutron stars or, more speculatively, as individual droplets, which can range in size from femtometres (stranglets) to kilometres (quark stars).

**Question 0**

What is quark generally considered to be?

**Question 1**

What does nuclear matter look like?

**Question 2**

What do you expect from a strange substance at low density?

**Question 3**

What kind of nucleus does nuclear matter exist in?

**Question 4**

What is the definitive proof of the presence of the Strange substance?

**Text number 16**

In bulk, a substance can exist in a number of different forms or states of aggregation, called phases, which depend on the pressure, temperature and volume of the environment. A phase is a form of matter with a relatively uniform chemical composition and physical properties (such as density, specific heat, refractive index, etc.). These phases include the three familiar phases (solids, liquids and gases) as well as more exotic forms of matter (such as plasmas, superfluids, superfluids, superfluids, Bose-Einstein condensates, ...). A fluid can be a liquid, a gas or a plasma. There are also paramagnetic and ferromagnetic phases of magnetic materials. As conditions change, a substance can move from one phase to another. These phenomena are called phase transitions and are studied in the field of thermodynamics. In nanomaterials, the greatly increased ratio of surface area to volume means that a substance can have properties that are completely different from those of a bulk material and are not well described by any bulk phase (see the section on nanomaterials for more information).

**Question 0**

What are the steps called?

**Question 1**

What is the phase not dependent on?

**Question 2**

How many steps are there in total?

**Question 3**

What are examples of paramagnetic phases?

**Question 4**

In which field are nanomaterials being researched?

**Text number 17**

In particle physics and quantum chemistry, an antimatter is a substance composed of antiparticles of ordinary matter. If a particle and its antiparticle come into contact with each other, they annihilate, i.e. they can both become another particle with the same energy according to Einstein's equation E = mc2. These new particles can be high-energy photons (gamma rays) or other particle-antiparticle pairs. The resulting particles have a kinetic energy equal to the difference between the rest mass of the annihilation products and the rest mass of the original particle-antiparticle pair, which is often quite large.

**Question 0**

What consists of antimatter?

**Question 1**

What happens when two antiparticles collide?

**Question 2**

What are particle-antiparticle pairs that are not high-energy called?

**Question 3**

What kind of energy do particle-antiparticle pairs have more than they originally had?

**Question 4**

Who discovered quantum chemistry?

**Text number 18**

Antimatter does not occur naturally on Earth, except for very short periods and in very small amounts (due to radioactive decay, lightning or cosmic rays). This is because antimatter created on Earth outside a suitable physics laboratory would almost immediately encounter the ordinary matter of which the Earth is made and be destroyed. Antiparticles and some stable antimatter (such as antihydrogen) can be produced in small quantities, but not in sufficient quantities to test only some of its theoretical properties.

**Question 0**

Where does antimatter occur in large quantities in nature?

**Question 1**

What does antimatter annihilate?

**Question 2**

Where is ordinary matter created?

**Question 3**

What is an example of an antiparticle?

**Question 4**

What can be created in large quantities for testing?

**Text number 19**

There is much speculation, both in science and in science fiction, about why the observable universe appears to be almost entirely matter and whether other places are instead almost entirely antimatter. In the early universe, matter and antimatter were thought to be equally represented, and the disappearance of antimatter implies an asymmetry in the laws of physics called a violation of charge parity (or CP symmetry). The CP symmetry violation can be obtained using the Standard Model, but currently the apparent asymmetry of matter and antimatter in the visible universe is one of the great unsolved problems of physics. The possible processes by which it has arisen are discussed in more detail in the section on baryogenesis.

**Question 0**

What does the disappearance of the substance involve?

**Question 1**

When was there more antimatter than substance?

**Question 2**

What problem has physics solved?

**Question 3**

Where can you find a standard model?

**Question 4**

In which scientific discipline is science fiction speculating?

**Text number 20**

In astrophysics and cosmology, dark matter is matter of unknown composition that does not emit or reflect enough electromagnetic radiation to be detected directly, but whose existence can be inferred from gravitational effects on visible matter. Observational evidence of the early stages of the universe and Big Bang theory imply that this matter has energy and mass, but is not composed of fermions (as above) OR gauge bosons. The generally accepted view is that most dark matter is non-baryonic in nature. Thus, it consists of particles that have not yet been observed in the laboratory. Perhaps they are supersymmetric particles, which are not Standard Model particles, but remnants formed at very high energies in the early universe and still floating around.

**Question 0**

What does dark matter emit in order to be seen?

**Question 1**

What effect on other matter allows electromagnetic radiation to be seen?

**Question 2**

What in nature is a baryon?

**Question 3**

What is dark matter?

**Question 4**

Supersymmetric particles are part of what model?

**Text number 21**

The pre-Socratics were the first recorded speculators to ponder the ultimate nature of the visible world. Thales (c. 624 BC - 546 BC) considered water to be the basic material of the world. Anaximander (c. 610 BC - 546 BC) proposed that the basic material was completely unnatural or infinite: infinite (apeiron). Anaximenes (b. 585 BC, d. 528 BC) proposed that the basic substance was pneuma, or air. Heraclitus (c. 535-475 BC) seems to say that the basic element is fire, although he may mean that everything is change. Empedocles (c. 490-430 BC) spoke of four elements from which everything is made: earth, water, air and fire. At the same time, Parmenides argued that there is no change, and Democritus argued that everything is made up of small, inert bodies of all shapes, called atoms, a philosophy called atomism. There were deep philosophical problems with all these ideas.

**Question 0**

When did Socrates live?

**Question 1**

What did Parmenides consider to be the basic material of the world?

**Question 2**

What is the name of the philosophical problems involved in understanding the nature of the world?

**Question 3**

How many elements did Democritus name?

**Question 4**

What did Parmenides say everything was made of?

**Text number 22**

For example, a horse eats grass: the horse changes the grass itself; the grass itself is not preserved in the horse, but some part of it - its substance - is preserved. Matter is not specifically described (as atoms, for example), but consists of what remains in the substance that changes from grass to horse. Matter, in this understanding, does not exist independently (i.e. as substance), but exists as interdependent (i.e. as 'principle') with form, and only insofar as it underlies change. It may be useful to think of the relationship between substance and form as being very similar to the relationship between parts and whole. For Aristotle, matter as such can only derive its actuality from form; it has no activity or actuality in itself, in the same way that parts have existence only in the whole (otherwise they would be independent wholes).

**Question 0**

What exists independently?

**Question 1**

Who said that matter has reality in itself?

**Question 2**

Aristotle said that parts exist outside of what?

**Question 3**

How does grass change a horse?

**Text number 23**

According to Descartes, matter has only the property of expansion, so its only function apart from movement is to exclude other bodies: this is a mechanical philosophy. Descartes makes an absolute distinction between mind, which he defines as un-expanded, thinking matter, and matter, which he defines as unthinking, expanded matter. They are independent of each other. In contrast, Aristotle defines matter and the principle of form/shape as complementary principles which together form one independent thing (substance). In short, Aristotle defines matter (roughly speaking) as that of which things are actually composed (and which has a potential independent existence), but Descartes elevates matter as an actual independent thing in itself.

**Question 0**

What philosophy did Aristotle describe?

**Question 1**

What did Aristotle define as separate from matter?

**Question 2**

How did Aristotle emphasise matter?

**Question 3**

What is the activity of movement?

**Question 4**

How does Descartes use matter and the principle of form?

**Text number 24**

Isaac Newton (1643-1727) inherited Descartes' mechanical conception of matter. In the Third Rule of Philosophical Reasoning, Newton lists the universal properties of matter as 'extension, hardness, impermeability, mobility and retardation'. Similarly, in his Optics, he speculates that God created matter as 'solid, massive, hard, impermeable, mobile particles' which were 'even so very hard that they never wear out or break into pieces'. The 'primary' properties of a substance were mathematically describable, unlike 'secondary' properties such as colour or taste. Like Descartes, Newton rejected the essential nature of secondary properties.

**Question 0**

When was Descartes born?

**Question 1**

What did Descartes write?

**Question 2**

What did Newton reject that Descartes did not?

**Question 3**

What did Descartes say were the universal properties of matter?

**Question 4**

Which description format is suitable for both primary and secondary features?

**Text number 25**

"There is a whole literature on 'matter structure', ranging from the 'electronic structure' of the early 20th century to the more recent 'quark structure', which is now presented with a note: In this context, physicists refer to matter fields and particles as 'quantum grains of matter field mode'. And here is a quote from de Sabbata and Gasperini: "By "matter" in this context we mean sources of interactions, i.e. spinor fields (such as quarks and leptons), which are believed to be the fundamental components of matter, or scalar fields, such as Higgs particles, which are used to represent mass in gauge theory (and which may, however, be composed of more fundamental fermion fields)."[further clarification needed].

**Question 0**

When did de Sabbata and Gasperini write?

**Question 1**

Which theory came after the quark structure of matter?

**Question 2**

Understanding the electronic architecture has led to major advances in which area?

**Question 3**

Who described the particles as quantum dots?

**Question 4**

Which theory uses spinor fields?

**Text number 26**

When the electron was discovered in the late 19th century, and when the atomic nucleus was discovered in the early 20th century and particle physics was born, matter was thought to be made up of electrons, protons and neutrons, which interacted with each other to form atoms. Today we know that even protons and neutrons are not indivisible, but can be split into quarks, while electrons are part of a family of particles called leptons. Both quarks and leptons are elementary particles and are now considered to be the basic components of matter.

**Question 0**

Which branch of physics began in the 19th century?

**Question 1**

What do atoms make up?

**Question 2**

What are the quarks divided into?

**Question 3**

What do they consist of?

**Question 4**

We now know that quarks and leptons are not what?

**Text number 27**

These quarks and leptons interact through four basic forces: gravity, electromagnetism, weak interaction and strong interaction. The Standard Model of particle physics is currently the best explanation of all physics, but despite decades of effort, gravity cannot yet be explained at the quantum level and is only described by classical physics (see quantum gravity and graviton). Interactions between quarks and leptons are the result of the exchange of force-carrying particles (such as photons) between quarks and leptons. The force-carrying particles are not themselves building blocks. It follows that mass and energy (which cannot be created or destroyed) cannot always be related to matter (which can be created from immaterial particles such as photons, or even pure energy such as kinetic energy). Force carriers are generally not considered to be matter: electric force carriers (photons) have energy (see Planck's relation) and weak force carriers (W and Z bosons) are massive, but neither is considered to be matter. Although these particles are not considered matter, they do contribute to the total mass of atoms, subatomic particles and all systems containing them.

**Question 0**

How many quarks and leptons are there?

**Question 1**

Which model satisfactorily explains gravity?

**Question 2**

The interactions between quarks and leptons are what?

**Question 3**

Mass and energy can always be compared to what?

**Question 4**

What relationship explains the carriers of electrical power?

**Text number 28**

The term 'matter' is used throughout physics in a bewildering variety of contexts: for example, 'condensed matter physics', 'elementary matter', 'partonic' matter, 'dark' matter, 'anti' matter, 'strange' matter and 'nuclear matter'. In his discussions of matter and antimatter, Alfvén has called normal matter 'coinomatter' (Gk. common matter). It is fair to say that there is no broad consensus in physics on a general definition of matter, and the term 'matter' is usually used in conjunction with a more specific definition.

**Question 0**

Physics has largely agreed on a definition of what?

**Question 1**

Who invented the term "razor substance"?

**Question 2**

What's another name for the generic material?

**Question 3**

Matter does not usually need to be used in combination with what?

**Question 4**

Which disciplines have different unusual contexts?

**Document number 442**

**Text number 0**

The Normans (Norman: Nourmands, French Normands, Latin Normanni) were a people who in the 10th and 11th centuries gave their name to the region of Normandy in France. They were descended from Norwegians ('Normans' comes from 'Norwegian'), raiders and pirates from Denmark, Iceland and Norway who, under their leader Rollo, agreed to swear allegiance to Charles III, King of the West of France. Their descendants gradually assimilated into the Carolingian-based cultures of West Francia over generations, mixing with the original Frankish and Romano-Gallic populations, and their descendants gradually assimilated into the Carolingian cultures of West Francia. The distinct cultural and ethnic identity of the Normans first emerged in the first half of the 10th century and continued to evolve over the following centuries.

**Question 0**

In which country is Normandy located?

**Question 1**

When were the Normans in Normandy?

**Question 2**

Which countries were the Norwegians from?

**Question 3**

Who was the Norwegian leader?

**Question 4**

In which century did the Normans first acquire their own identity?

**Question 5**

Who named Normandy in the 1000s and 1100s?

**Question 6**

What is the French territory?

**Question 7**

To whom did King Charles III swear allegiance?

**Question 8**

When was the Frankish identity born?

**Text number 1**

The Norman dynasty had a major political, cultural and military impact on medieval Europe and even the Middle East. Famous for their warlike spirit and, eventually, for their Christian piety, the Normans became the representatives of the Catholic orthodoxy into which they merged. They adopted the Gallo-Romanic language of the Frankish region they inhabited, and their dialect became an important literary language known as Norman, Normanund or Norman French. The Duchy of Normandy, which they formed by treaty with the French crown, was the great fiefdom of medieval France, and under Richard I, Normandy became a unified and powerful feudal principality. The Normans are known both for their culture, such as their unique Romanesque architecture and musical tradition, and for their outstanding military achievements and innovations. The Norman adventurers, under Roger II, founded the Kingdom of Sicily after conquering southern Italy from the Saracens and Byzantines, and their campaign led by their duke William the Conqueror led to the Norman conquest of England at the Battle of Hastings in 1066. Norman cultural and military influence spread from these new European centres to the Crusader states of the Middle East, where their Prince Bohemond I established the Principality of Antioch in the Levant, Scotland and Wales in Britain, Ireland, and the coasts of North Africa and the Canary Islands.

**Question 0**

Who was the Duke of Hastings at the Battle of Hastings?

**Question 1**

Who ruled the Duchy of Normandy?

**Question 2**

What religion were the Normans

**Question 3**

What major impact did the Norman dynasty have on modern Europe?

**Question 4**

Who was famous for his Christian spirit?

**Question 5**

Who adopted the Roman language?

**Question 6**

Who ruled the land of Normandy?

**Question 7**

Which principality was founded by William the Conqueror?

**Text number 2**

The English name "Normans" comes from the French words Normans/Normanz, plural Normant, modern French Normand, itself borrowed from the Old Low Franconian Nortmann "man of the North" or directly from the Old Norse Norðmaðr, variously Latinized as Nortmannus, Normannus or Nordmannus (recorded in medieval Latin in the 9th century) meaning "Norseman, Viking".

**Question 0**

What is the original meaning of the word Norman?

**Question 1**

When was the Latin version of the word Norman first recorded?

**Question 2**

What name comes from the English words Normans/Normanz?

**Question 3**

When was the French version of the word Norman first recorded?

**Text number 3**

As the tenth century progressed, the initially disastrous raids by Norwegian troops on French rivers became more permanent camps, involving local women and personal property. The Duchy of Normandy, which began in 911 as a fiefdom, was established by the Treaty of Saint-Clair-sur-Epte between King Charles III of West Francia and the famous Viking ruler Rollo, and was located in the former Frankish kingdom of Neustria. The treaty offered Rollo and his men French lands between the River Epte and the Atlantic coast in exchange for protection against Viking raids. The territory covered the northern part of what is now Upper Normandy up to the Seine, but the duchy eventually extended westwards across the Seine. The region roughly corresponded to the old province of Rouen, and was similar to the administrative structure of the Roman Gallia Lugdunensis II (part of the former Gallia Lugdunensis).

**Question 0**

When was the Duchy of Normandy created?

**Question 1**

With whom did Rollo sign the Saint-Clair-sur-Epte contract?

**Question 2**

Which river originally bordered the duchy

**Question 3**

When did the Norwegian camps turn into devastating attacks?

**Question 4**

Which treaty was signed in the 9th century?

**Question 5**

Who made the treaty with King Charles III of France?

**Question 6**

What did the French promise to protect Rollo and his men from?

**Text number 4**

Before Rollo's arrival, its population was no different from that of Picardy or Île-de-France, which were considered 'francophone'. The earlier Viking settlers had begun to arrive in the 880s, but they were divided into colonies in the east (Roumois and Pays de Caux) around the low valley of the Seine and in the west on the Cotentin peninsula, separated by traditional paghs, where the population remained more or less the same with almost no foreign settlers. Rollo's forces, which raided and eventually settled Normandy and parts of the Atlantic coast, included Danes, Norwegians, Norwegian Gaels, Orkney Vikings, possibly Swedes and Anglo-Danishes from the Norwegian-controlled Danelaw of England.

**Question 0**

Who gave the original Vikings a common identity when they arrived?

**Question 1**

When did Rollo start arriving in Normandy?

**Question 2**

Which groups of Vikings did Rollo conquer?

**Text number 5**

The descendants of the Rollo Vikings and their Frankish wives replaced the Norwegian religion and the old Norwegian language with Catholicism (Christianity) and the Gallo-Roman language of the local people, mixing their native Frankish heritage with old Norwegian traditions and customs to synthesize a unique "Norman culture" in northern France. The Norman language was born when the original langue d'oïl branch of Romansh was adopted by the Norwegian-speaking ruling class, and developed into a regional language that has survived to the present day.

**Question 0**

What was the Norman religion?

**Question 1**

In which part of France were the Normans located?

**Question 2**

What will replace Norwegian religion?

**Question 3**

Where did the Old Norwegian traditions of the mother tongue merge?

**Question 4**

Which language replaced the Gallo-Romantian language?

**Text number 6**

The Normans then adopted the feudal doctrines that were spreading elsewhere in France and developed them into a functioning hierarchical system in both Normandy and England. The new Norman rulers were culturally and ethnically distinct from the old French aristocracy, most of whom were descended from the Franks of the Carolingian dynasty. Most Norman knights remained poor and landless, and by 1066 Normandy had been ruled by fighting horsemen for more than a generation. Many Italian, French and English Normans eventually served as enthusiastic crusaders under the Italian Norman Prince Bohemund I and the Anglo-Norman King Richard the Lionheart.

**Question 0**

What was one of the main exports of the Normans?

**Question 1**

Who adopted the Norman fuedel doctrines?

**Question 2**

What was one of the main imports for the Normans?

**Question 3**

Whose arristocracy eventually acted as enthusiastic crusaders?

**Text number 7**

Soon after the Normans began to invade Italy, they also invaded the Byzantine Empire and then Armenia, where they fought against the Byzantines, Bulgarians and especially the Seljuk Turks. The Norman mercenaries were first encouraged by the Lombards to come south to fight the Byzantines, but soon they were fighting in Sicily in the service of the Byzantines. They featured prominently alongside Varangian and Lombard troops in George Maniaces' Sicilian campaign of 1038-40. It has been disputed whether the Normans in Greek service were actually from Norman Italy, and it now seems likely that only a few of them were from there. It is also not known how many 'Franks', as the Byzantines called them, were Normans and not other French.

**Question 0**

Who was the main enemy of the Normans in Italy, the Byzantine Empire and Armenia?

**Question 1**

Who came to Italy soon after the Byzantine Empire?

**Question 2**

Who did the Normans fight in Italy?

**Question 3**

Who did the Normans encourage to come south?

**Question 4**

During which campaign did the Vargians and Lombards fight?

**Text number 8**

One of the first Norman mercenaries to serve as a Byzantine general was Hervé in the 1050s. By then, however, there were already Norman mercenaries serving as far afield as Trebizond and Georgia. They were stationed in Malatya and Edessa under the Byzantine Duke Isaac Komnenos of Antioch. In 1060 Robert Crispin led the Norman forces of Edessa against the Turks. Roussel de Bailleul even tried to create an independent state in Asia Minor with the support of the local population, but he was stopped by the Byzantine general Alexius Komnenos.

**Question 0**

When did Herve serve as a Byzantine general?

**Question 1**

When did Robert Crispin take on the Turks?

**Question 2**

Who ruined Roussel de Bailleul's plans for an independent state?

**Question 3**

Who was the first Byzantine mercenary to serve with the Normans?

**Question 4**

When did Herve serve as a Norman general?

**Question 5**

Who ruined Alexius Komnenos' plans for an independent state?

**Question 6**

When did Herve go against the Turks?

**Text number 9**

Some Normans joined the Turkish forces to help destroy the Armenian vassal states of Sassoun and Taron in far eastern Anatolia. Later, many went on to serve the Armenian state further south in Cilicia and the Taurus Mountains. A Norman named Oursel led 'Frankish' troops into the Euphrates valley in northern Syria. Between 1073 and 1074, 8 000 of the 20 000 soldiers of the Armenian general Philaretus Brachamius were Normans - formerly Ourselians - under the command of Raimbaud. They even gave their ethnic origin to the name of their castle: Afranji, meaning 'Franks'. The well-known trade between Amalfi and Antioch and Bari and Tarsus may be linked to the presence of the Italo-Normans in these cities when Amalfi and Bari were under Norman rule in Italy.

**Question 0**

What was the name of the Norman castle?

**Question 1**

Who was the leader when the Franks arrived in the Euphrates Valley?

**Question 2**

Who did the Normans ally with in Anatolia?

**Question 3**

Who joined the Norman forces in the extermination of the Armenians?

**Question 4**

Who were the Turks working for?

**Question 5**

Which Frank led Norman's troops?

**Question 6**

Where did Oursel lead the Franks?

**Text number 10**

Several Byzantine Greek families were Norman mercenaries during the Komnian Restoration, when Byzantine emperors were looking for Western European warriors. The Raouli were descended from an Italian Norman named Raoul, Petraliphae from Pierre d'Aulps, and an Albanian clan group called the Maniakates were descended from Normans who served under George of Maniace in the Sicilian campaign of 1038.

**Question 0**

Where did the Raouliii family originate?

**Question 1**

Where did many Norman mercenary families come from?

**Question 2**

Who were the Normans serving under in the 10th century?

**Question 3**

Which expedition was led by George Maniaces in the 10th century?

**Text number 11**

Robert Guiscard, another Norman adventurer who had already risen to the rank of Count of Apulia thanks to his military successes, finally drove the Byzantines out of southern Italy. After obtaining the consent of Pope Gregory VII and acting as his vassal, Robert continued his campaign to conquer the Balkan peninsula as a base for Western feudal lords and the Catholic Church. After joining Croatia and the Catholic cities of Dalmatia, in 1081 he led an army of 30,000 men on 300 ships that landed on the southern coast of Albania, conquered Valona, Kanina, Jericho (Orikum) and reached Butrint after numerous raids. They joined the fleet that had earlier conquered Corfu and attacked Dyrrachium from land and sea, destroying everything along the way. Under these harsh conditions, the locals accepted the invitation of Emperor Alexius I Comnenus to join the Byzantine forces against the Normans. The Albanian troops could not take part in the next battle, as it had begun before their arrival. Immediately before the battle, the Venetian fleet had won a victory on the coast around the city. Forced to retreat, Alexius handed over command to a high Albanian official in Byzantine service named Comiscortes. The garrison of the city resisted until February 1082, when Venetian and Amalfi merchants who had settled there betrayed Dyrrachium into Norman hands. The Normans were now free to invade inland; they took Ioannina and some smaller towns in south-west Macedonia and Thessaly before arriving at the gates of Thessaloniki. Disagreements among high officials forced the Normans to retreat into Italy. They lost Dyrrachium, Valona and Butrint in 1085, after Robert's death.

**Question 0**

What was the name of the Count of Apulia?

**Question 1**

When did Dyrrachium come under Norman control?

**Question 2**

How many men were in Robert's army?

**Question 3**

Who finally drove the Byzantines out of Europe?

**Question 4**

Which Pope opposed the Roberts campaign?

**Question 5**

What fell to the Normans in the 10th century?

**Question 6**

How many men did Roberts' army face?

**Text number 12**

A few years after the First Crusade, in 1107, the Normans, under the command of Robert's son Bohemond, landed in Valona and laid siege to Dyrrachium using the most advanced military equipment of the time, but to no avail. In the meantime they took Petrela, the fortress of Mill on the banks of the Deabolis, Gllavenica (Ballsh), Kanina and Jericho. This time the Albanians sided with the Normans, dissatisfied with the heavy taxes imposed on them by the Byzantines. With their help, the Normans secured the passes of Arbanon and opened the way to Dibra. Lack of supplies, disease and Byzantine resistance forced Bohemond to withdraw from his campaign and sign a peace treaty with the Byzantines at Deabolis.

**Question 0**

Where did the Normans and Byzantines sign the peace treaty?

**Question 1**

Who was Robert's son?

**Question 2**

On which river was Petrela located?

**Question 3**

Who were the Normans besieging in the 1100s?

**Question 4**

Who did Robert lead against Dyrrachium in 1107?

**Question 5**

Who was Bohemond's son?

**Text number 13**

The further deterioration of the Byzantine situation paved the way for a third invasion in 1185, when a large Norman army invaded Dyrrachium following the betrayal of senior Byzantine officials. Some time later, Dyrrachium - one of the most important naval bases on the Adriatic - fell again into Byzantine hands.

**Question 0**

When did the Normans attack Dyrrachium?

**Question 1**

What was the name of the naval base?

**Question 2**

Where was Dyrrachium located?

**Question 3**

Who invaded Dyrrachium in the 1100s?

**Question 4**

Who betrayed the Normans?

**Question 5**

Which naval base fell to the Normans?

**Text number 14**

The Normans had early contact with England. Not only were their original Viking brethren still raiding the English coasts, but they also occupied most of the important ports on the opposite side of the English Channel from England. This relationship eventually led to closer blood relations through the marriage of Emma, sister of Richard II, Duke of Normandy, and Ethelred II, King of England. As a result, Ethelred fled to Normandy in 1013 when Sweyn Forkbeard forced him from his kingdom. His stay in Normandy (until 1016) affected him and his sons through Emma, who remained in Normandy after Cnut the Great conquered the island.

**Question 0**

Who did Emma marry?

**Question 1**

Who was Emma's brother?

**Question 2**

Where did Ethelred run to?

**Question 3**

Who kicked Ethelred out?

**Question 4**

Who married Cnut the Great?

**Question 5**

When did Richard II flee to Normandy?

**Question 6**

Whose major ports were controlled by the English?

**Text number 15**

When Edward the Confessor finally returned from his father's exile in 1041 at the invitation of his half-brother Harthacnut, he brought with him a mind trained by the Normans. He also brought with him many Norman advisers and warriors, some of whom founded the English cavalry. This concept never took root, but it is typical of Edward's attitudes. He appointed Robert of Jumièges as Archbishop of Canterbury and made Ralph the Timid Earl of Hereford. He invited his brother-in-law Eustace II, Earl of Boulogne, to his court in 1051, which led to the greatest early conflict between Saxons and Normans and eventually to the expulsion of the Earl of Wessex, Godwin.

**Question 0**

Who was Edward the Confessor's half-brother?

**Question 1**

When did Edward return?

**Question 2**

Who did Edward make Archbishop of Canterbury?

**Question 3**

When did the son of Edward the Confessor return from his father's protection?

**Question 4**

What kind of force did Harthacnut create?

**Question 5**

Who made Robert of Jumieges Earl of Hereford?

**Text number 16**

In 1066, William II, Duke of Normandy, conquered England and killed King Harold II at the Battle of Hastings. The invading Normans and their descendants replaced the Anglo-Saxons as the ruling class of England. The English nobility were part of a coherent Norman culture, and many had lands on both sides of the English Channel. The early Norman kings of England, as Dukes of Normandy, owed the King of France a tribute for their lands on the continent. They regarded England as their most important estate (it carried with it the title of King - an important status symbol).

**Question 0**

Where did Harold II die?

**Question 1**

Who killed Harold II?

**Question 2**

When was the Battle of Hastings fought?

**Question 3**

Who was the ruling class before the Normans?

**Question 4**

When did King Harold II conquer England?

**Question 5**

Which battle was fought in the 10th century?

**Question 6**

Who replaced the Normans as the ruling class?

**Question 7**

Who considered their land on the mainland to be their most important space?

**Text number 17**

Eventually, the Normans merged with the natives, combining languages and traditions. During the Hundred Years' War, the Norman aristocracy often identified themselves as English. The Anglo-Norman language became distinct from Latin, which was the subject of Geoffrey Chaucer's humour. The Anglo-Norman language eventually merged with the Anglo-Saxon language of their subjects (see Old English) and contributed to what (together with the Norwegian language of the earlier Anglo-Norman settlers and the Latin used by the Church) helped to develop Middle English. This in turn developed into modern English.

**Question 0**

What was the final form of the Anglo-Norman language?

**Question 1**

Who identified themselves as French during the Hundred Years' War?

**Question 2**

What was adopted into the Anglo-Norman language?

**Question 3**

Who mocked the Latin language?

**Text number 18**

The Normans had a profound impact on Irish culture and history after their invasion of Bannow Bay in 1169. Initially, the Normans maintained a distinct culture and ethnicity. Over time, however, they assimilated into Irish culture to such an extent that it has been said that they became 'more Irish than the Irish themselves'. The Normans settled mostly in the area in the east of Ireland, later known as the Pale, and also built many fine castles and settlements, such as Trim Castle and Dublin Castle. The two cultures intermingled and borrowed each other's language, culture and outlook on life. The descendants of the Normans are now recognised by their surnames. Names such as French, (De) Roche, Devereux, D'Arcy, Treacy and Lacy are particularly common in the south-east of Ireland, especially in the south of County Wexford, where the first Norman settlements were established. Other Norman names such as Furlong also occur there. Another common Norman-Irish name was Morell (Murrell), derived from the French Norman name Morel. Other names beginning with Fitz (from the Norman word for 'son') suggest a Norwegian ancestry. These included Fitzgerald, FitzGibbons (Gibbons) dynasty, Fitzmaurice. Other families with surnames such as Barry (de Barra) and De Búrca (Burke) are also of Norwegian origin.

**Question 0**

What year did the Normans attack Bannow Bay?

**Question 1**

Which country did the Normans invade in 1169?

**Question 2**

Which culture did the Normans merge with in Ireland?

**Question 3**

Where did the Normans invade in the 1100s?

**Question 4**

Who was profoundly influenced by Irish culture?

**Question 5**

What castles did the Irish build?

**Text number 19**

One of the English pretenders to the throne who opposed William the Conqueror, Edgar Atheling, eventually fled to Scotland. King Malcolm III of Scotland married Edgar's sister Margaret and was confronted by William, who was already in dispute over Scotland's southern borders. William invaded Scotland in 1072, riding as far as Abernethy, where he met his fleet. Malcolm submitted, paid tribute to William and handed his son Duncan over as a hostage, starting a series of disputes over whether the Scottish crown was loyal to the King of England.

**Question 0**

Who was Margaret's brother?

**Question 1**

Who was Margaret's husband?

**Question 2**

When did William invade Scotland?

**Question 3**

Who was the hostage?

**Question 4**

Who does Edgar marry?

**Question 5**

Who invaded Scotland in the 10th century?

**Question 6**

Who was taken hostage by a Scottish king?

**Text number 20**

The Normans came to Scotland, built castles and established noble families that became some of the future kings, such as Robert the Bruce, and established a significant number of Scottish clans. King David I of Scotland, whose elder brother Alexander I had married Sybilla of Normandy, was instrumental in bringing the Normans and Norman culture to Scotland in what some scholars call the 'Davidic Revolution'. Because David had spent time at the court of Henry I of England (who was married to David's sister Maud) and needed them to wrest the kingdom from his half-brother Máel Coluim mac Alaxandair, he had to reward many with lands. The process continued under David's successors, most intensely under William the Lion. The Norman feudal system was applied, to varying degrees, to most of Scotland. The Scottish families of Bruce, Gray, Ramsay, Fraser, Ogilvie, Montgomery, Sinclair, Pollock, Burnard, Douglas and Gordon, to name but a few, and the later royal house of Stewart included, can all be traced back to the Norman line.

**Question 0**

Who did Alexander I marry?

**Question 1**

Which culture's arrival in Scotland is known as the 'Davidic revolution'?

**Question 2**

Who did King David I of Scotland marry?

**Question 3**

What did Normandy's Sybilla bring to Scotland?

**Text number 21**

Even before the Norman conquest of England, the Normans had been in contact with Wales. Edward the Confessor had made the aforementioned Ralph Earl of Hereford and charged him with defending the Marches and waging war against the Welsh. In these initial attempts, the Normans failed to make any headway in Wales.

**Question 0**

Where was Ralph the Earl?

**Question 1**

Who was Ralph at war with?

**Question 2**

Who made Ralph Earl?

**Question 3**

Who came into contact with Wales after the conquest of England?

**Question 4**

Who made Edward the Confessor Earl?

**Text number 22**

After the conquest, however, Marches came under the full control of William's most trusted Norman barons, such as Bernard de Neufmarché, Roger of Montgomery in Shropshire and Hugh Lupus in Cheshire. These Normans began a long period of slow conquest, during which almost all of Wales was at one point under Norman rule. Norman words such as baron (barwn) first entered the Welsh language at this time.

**Question 0**

Which country was under Norman baronial rule?

**Question 1**

What was under Williams' rule before the conquest?

**Question 2**

Which Welsh lords did William conquer?

**Text number 23**

The legendary religious zeal of the Normans manifested itself in religious warfare long before the First Crusade created the Norman principality of Antioch. They were major foreign participants in the reconquest of the Iberian Peninsula. In 1018, Roger de Tosny travelled to the Iberian Peninsula to create a state for himself from the Moorish lands, but failed. In 1064, during the Barbastro War, William of Montreuil led the papal army and took a huge booty.

**Question 0**

What year did Roger de Tosny fail to do what he set out to do?

**Question 1**

Who led the Pope's army in the Barbastro war?

**Question 2**

Where did the Normans establish their principality before the First Crusade?

**Question 3**

What were the Normans involved in in the 10th century?

**Question 4**

Who created a state for themselves from Moorish lands?

**Question 5**

Which war was fought in the 1st century?

**Text number 24**

In 1096, Taranton Bohemond and his nephew Tancred joined the crusaders who bypassed the siege of Amalfi with an army of Italian Normans. Bohemond was the de facto leader of the crusade as it passed through Asia Minor. After the successful siege of Antioch in 1097, Bohemond began to create an independent principality around the city. Tancred was instrumental in the conquest of Jerusalem, and worked to extend the Crusader empire into the Transjordan and the Galilee[1].

**Question 0**

When did the siege of Antioch take place?

**Question 1**

What was the name of Bohemond's nephew?

**Question 2**

Which major conquest was Tancred involved in?

**Question 3**

When did Tancred lay siege to Antioch?

**Question 4**

What was the name of Tancred's nephew?

**Text number 25**

The conquest of Cyprus by the Anglo-Norman forces of the Third Crusade opened a new chapter in the history of the island, which was under Western European rule for the next 380 years. Although not part of the planned operation, the conquest had far more lasting consequences than originally anticipated.

**Question 0**

How long was Cyprus ruled by Western Europe?

**Question 1**

Who defeated the Anglo-Norman forces during the Third Crusade?

**Question 2**

Who ruled Western Europe for 380 years?

**Text number 26**

In April 1191, Richard the Lionhearted left Messina with a large fleet for Acre. However, a storm scattered the fleet. After some searching, it was discovered that the ship carrying his sister and fiancée Berengaria was anchored off the southern coast of Cyprus, along with the wrecks of several other ships, including the ship of the Ark. The island's despot Isaac Komnenos had taken the survivors from the wrecks as prisoners. Richard's fleet arrived in the port of Limassol in Cyprus on 1 May 1191. He ordered Isaac to release the prisoners and the treasure. Isaac refused, so Richard landed his troops and took Limassol.

**Question 0**

What ruined Richard's plans to reach Acre?

**Question 1**

Who was Richard's fiancée?

**Question 2**

What year did the storm hit Richard's fleet?

**Question 3**

Who ruled Cyprus in 1191?

**Question 4**

Who left Messina in the 1100s?

**Question 5**

What year did Richards' fleet avoid the storm?

**Question 6**

Who ruled Cyprus in the 12th century?

**Text number 27**

Several princes of the Holy Land arrived in Limassol at the same time, notably Guy de Lusignan. All declared their support for Richard on condition that he backed Guy against his rival Conrad of Montferrat. The local barons rejected Isaac, who was considering making peace with Richard, joining him on a crusade and offering his daughter in marriage to a person named by Richard. However, Isaac changed his mind and tried to escape. Richard then set out to conquer the whole island, his forces led by Guy de Lusignan. Isaac surrendered and was bound in silver chains because Richard had promised not to put him in irons. By 1 June, Richard had conquered the entire island. His feat was well publicised and boosted his reputation; he also made considerable financial gains from his conquest of the island. On 5 June, Richard and his allies set off for Aksos. Before leaving, he appointed two of his Norman generals, Richard de Camville and Robert de Thornham, as governors of Cyprus.

**Question 0**

Who was Guy's rival?

**Question 1**

What were Isaac's chains made of?

**Question 2**

Who led Richard's troops when Cyprus was conquered?

**Question 3**

Whose chains were made of copper?

**Question 4**

Who led Issac's troops into Cyprus?

**Question 5**

Who offered Isaac his daughter?

**Text number 28**

Between 1402 and 1405, an expedition led by the Norman nobleman Jean de Bethencourt and the Witch Gadifer de la Salle conquered the Canary Islands of Lanzarote, Fuerteventura and El Hierro on the Atlantic coast of Africa. Their forces were gathered from Normandy and Gascony, and were later reinforced by Castilian colonists.

**Question 0**

On which continent is the Canary Islands located?

**Question 1**

Who conquered the Canary Islands in the 1300s?

**Question 2**

Which islands are off the coast of Asia?

**Text number 29**

Bethencourt took the title of King of the Canary Islands, as he was a vassal of Henry III of Castile. In 1418, Jean's nephew Maciot de Bethencourt sold the rights to the islands to Enrique Pérez de Guzmán, 2nd Count de Niebla.

**Question 0**

Who became King of the Canary Islands?

**Question 1**

Who bought the rights?

**Question 2**

Who sold the rights?

**Question 3**

What title did Henry II take in the Canary Islands?

**Question 4**

Who sold the rights to the island in the 13th century?

**Text number 30**

Normandy's customary law developed between the 10th and 13th centuries and is still in force in the legal systems of Jersey and Guernsey in the Channel Islands. Two judges wrote the Norman customary law in two Latin customaries which they and their colleagues used: the Très ancien coutumier (Very old customary law), written between 1200 and 1245, and the Grand coutumier de Normandie (Grand customary law of Normandy, originally Summa de legibus Normanniae in curia laïcali), written between 1235 and 1245.

**Question 0**

Where Jersey and Guernsey are located

**Question 1**

How many customary rights are there in Norman customary law?

**Question 2**

Which Norman law was developed between 1000 and 1300?

**Question 3**

Where in the law are there three customers?

**Question 4**

What was written in the 13th century?

**Text number 31**

Norman architecture typically stands out as a new phase in the architectural history of the regions they conquered. They spread their unique Romanesque style to England and Italy, and the fortification of these regions with their North Frankish style forts profoundly changed the military landscape. Their style was characterised by rounded arches, especially above windows and doorways, and massive proportions.

**Question 0**

What is the Norman architectural idiom?

**Question 1**

What kind of arches are there in Norman architecture?

**Question 2**

What kind of arc did the Normans invent?

**Text number 32**

In England, the period of Norman architecture immediately follows Anglo-Saxon architecture and precedes the early Gothic period. In southern Italy, the Normans incorporated elements of Islamic, Lombard and Byzantine architecture into their own building techniques, creating a unique style in the Kingdom of Sicily known as Norman-Arabic architecture.

**Question 0**

Which type of architecture came after the Normans in England?

**Question 1**

What type of architecture was there in England before the Norman period?

**Question 2**

Where was the Norman-Arab architectural style?

**Question 3**

What precedes Anglo-Saxon architecture?

**Question 4**

What type of architecture came after the early Gothic?

**Question 5**

Who adopted Islamic, Lombard and Byzantine building techniques in England?

**Text number 33**

In the visual arts, the Normans did not master the rich and distinctive traditions of the cultures they conquered. However, in the early 1100s, the dukes embarked on a programme of ecclesiastical reform to promote the Cluniac monastic reform and to encourage intellectual activity, in particular the proliferation of scriptoria and the recovery of the lost collection of illuminated manuscripts. The dukes used the church as a unifying force in their fragmented duchy. The main monasteries that participated in this 'Renaissance' of Norman art and learning were Mont-Saint-Michel, Fécamp, Jumièges, Bec, Saint-Ouen, Saint-Evroul and Saint-Wandrille. These centres were linked to the so-called Winchester school, which transmitted to Normandy a pure Carolingian artistic tradition. Normandy enjoyed a golden age of illustrated manuscripts in the last decade of the 12th century and the first decade of the 12th century, but it was brief and the main Normandy scriptoria ceased to exist after the middle of the century.

**Question 0**

When did the reform of the Church begin?

**Question 1**

Who used the church to unite?

**Question 2**

What kind of art was the Norman tradition rich in?

**Question 3**

Who started the church reform programme in the 1100s?

**Question 4**

Who did the church divide?

**Question 5**

Who experienced the golden age in the 1100s and 1200s?

**Text number 34**

The French Wars of Religion in the 1500s and the French Revolution in the 1700s successively destroyed much of the architectural and artistic remains of this Norman creativity. The former, in its violence, caused the wanton destruction of many Norman buildings, the latter, in its anti-religious offensive, caused the deliberate destruction of all kinds of religious objects, and the social destabilisation it caused led to rampant looting.

**Question 0**

When were the French Wars of Religion?

**Question 1**

What wars did France fight in the 17th century?

**Question 2**

Which revolution took place in 1899?

**Text number 35**

By far the most famous Norman work of art is the Bayeux tapestry, which is not tapestry but embroidery. It was commissioned by Odo, Bishop of Bayeux and first Earl of Kent, and was made by the natives of Kent, who had learned the Nordic traditions brought over by the Danish Vikings in the previous half century.

**Question 0**

What type of knitting was used to create the Bayeux tapestry?

**Question 1**

What is Norman Art's most famous work?

**Question 2**

Who ordered the tapestry?

**Question 3**

What is the oldest Norman artwork?

**Question 4**

Who ordered the Bayeux tapestry from the Danish Vikings?

**Text number 36**

Norman art in Britain is mainly preserved in the form of stone and metalwork, such as chapels and baptismal fonts. In southern Italy, however, Norman art is richly preserved in forms strongly influenced by its Greek, Lombard and Arab ancestors. Of the royal decorations that survive in Palermo, the crown is Byzantine in style, and the coronation cloak is of Arabic craftsmanship, with Arabic carvings. Many churches have preserved sculptural fonts, capitals and, above all, mosaics, which were common in Norman Italy and drew heavily on the Greek heritage. Salerno in Lombardy was the centre of ivory work in the 11th century and this continued under the Normans. Finally, it is worth mentioning that the French crusaders who travelled to the Holy Land brought back French objects as donations to the churches where they stopped in southern Italy, among their Norman cousins. For this reason, many churches in southern Italy keep works from France alongside native works.

**Question 0**

What is the most important type of Norman art preserved in churches?

**Question 1**

How has British art survived in Normandy?

**Question 2**

What is the most common form of Norman art in churches?

**Question 3**

What was the centre of ivory trade in the 1100s?

**Text number 37**

In the 1100s, Normandy witnessed several important events in the history of classical music. The monastery of Fécamp and the monastery of Saint-Evroul were centres of musical production and education. At Fécamp, under the guidance of two Italian abbots, William Volpiano and John Ravenna, the notation of music by letters was developed and taught. It is still the most common form of pitch representation in English- and German-speaking countries. In the 11th century, Fécamp also developed and taught the use of the staff, around which the neumes were aligned. Under the German abbot Isembard, La Trinité-du-Mont became a centre of musical composition.

**Question 0**

In which century did Normandy see a significant development in classical music?

**Question 1**

Who were the two abbots of the Fécamp monastery?

**Question 2**

What happened in Normandy in the 1100s?

**Question 3**

What was the centre of Fecamp Abby?

**Text number 38**

Saint Evroul had developed a singing tradition, and the choir achieved fame in Normandy. Led by the Norman abbot Robert de Grantmesnil, several monks from Saint Evroul fled to southern Italy, where Robert Guiscard protected them and founded the Latin monastery of Sant'Eufemia. There they continued the singing tradition.

**Question 0**

Where did the monks flee to?

**Question 1**

Which monastery was founded by the monks of Saint-Evroul in Italy?

**Question 2**

Who protected the monks in Italy?

**Question 3**

What tradition were the monks of Saint-Evroul known for?

**Question 4**

Who escaped from southern Italy?

**Document number 443**

**Text number 0**

Computational complexity theory is a branch of theoretical computer science that focuses on classifying computational problems according to their inherent difficulty and relating these classes to each other. A computational problem is defined as a task that is in principle solvable by a computer, which is equivalent to solving a problem mechanically by applying mathematical steps such as an algorithm.

**Question 0**

Which branch of theoretical computer science deals with the classification of computational problems by difficulty and class ratio?

**Question 1**

According to which main characteristic are computational problems classified by computational complexity theory?

**Question 2**

What is the term for a task that is usually suitable for a computer to solve?

**Question 3**

What is the principle of computational complexity?

**Question 4**

Which branch of the theoretical computer class deals with the classification of computational problems broadly in terms of difficulty and class ratio?

**Question 5**

What is considered a task that in principle cannot be turned into a computer solution?

**Question 6**

What cannot be solved mechanically by applying mathematical steps?

**Question 7**

What is the manual application of mathematical steps?

**Text number 1**

A problem is considered inherently difficult if it requires significant resources to solve, regardless of the algorithm used. The theory formalises this intuition by introducing mathematical computational models to study these problems and by specifying the amount of resources, such as time and storage, needed to solve them. Other measures of complexity are also used, such as the number of communications (used in communication complexity), the number of ports in a circuit (used in circuit complexity), and the number of processors (used in parallel computing). One of the tasks of computational complexity theory is to define practical bounds on what computers can and cannot do.

**Question 0**

Which measure of a computational problem broadly defines the inherent difficulty of the solution?

**Question 1**

What method intuitively estimates or quantifies the amount of resources needed to solve a computational problem?

**Question 2**

What are the two primary sources used to assess complexity?

**Question 3**

Which unit is measured to determine the complexity of a circuit?

**Question 4**

What is the practical role of defining the complexity of problems in everyday computing?

**Question 5**

Which measure of a computational problem broadly defines the inherent simplicity of the solution?

**Question 6**

Which method is not used to intuitively estimate or quantify the amount of resources needed to solve a computational problem??

**Question 7**

What are the three primary sources used to measure complexity?

**Question 8**

Which unit is measured to determine the simplicity of a circuit?

**Question 9**

What number is used in the perpendicular calculation?

**Text number 2**

The closely related fields of theoretical computer science are algorithm analysis and computability theory. The key difference between algorithm analysis and computational complexity theory is that the former analyses the amount of resources needed to solve a given algorithm problem, while the latter asks more general questions about all possible algorithms that could be used to solve the same problem. More specifically, it seeks to classify problems that can or cannot be solved appropriately with limited resources. The constraint on the available resources, in turn, distinguishes computational complexity from computability theory: the latter asks what problems can in principle be solved algorithmically.

**Question 0**

Which two areas of theoretical computer science closely reflect computational complexity theory?

**Question 1**

In which field of computer science is the resource requirements of a given algorithm analysed for a given problem?

**Question 2**

In which area of computer science is the sum of all possible algorithms analysed to determine the resource requirements needed to solve a given problem?

**Question 3**

Which field of computer science is primarily concerned with the question of whether or not a problem can ultimately be solved by algorithms?

**Question 4**

Which two areas of theoretical computer science correspond closely to the theory of computational simplicity?

**Question 5**

What is not the key difference between algorithm analysis and computational complexity theory?

**Question 6**

How do you analyse how many resources a given algorithm needs to solve a hypothesis?

**Question 7**

What is the process of asking more specifically about all possible algorithms that cannot be used to solve the same problem?

**Question 8**

What process classifies problems that can and cannot be solved with roughly unlimited resources?

**Text number 3**

A computational problem can be seen as an infinite collection of cases and a solution for each case. The input string of a computational problem is called a problem instance and should not be confused with the problem itself. In computational complexity theory, a problem is an abstract question to be solved. In contrast, a problem instance is a rather concrete statement that can serve as input to a decision problem. For example, consider the problem of testing prime numbers. The instance is a number (e.g. 15), and the solution is "yes" if the number is prime, and "no" otherwise (in this case, "no"). In other words, the instance is a particular input to the problem, and the solution is the output that matches the given input.

**Question 0**

What is the name given to the input string of a computational problem?

**Question 1**

What is the term used in computational complexity theory to describe an abstract fundamental question to be solved?

**Question 2**

Is the problem typically abstract or concrete?

**Question 3**

What's another name for any contribution to a particular problem?

**Question 4**

What is a general term used to describe the result of any input in a problem situation?

**Question 5**

What can be considered as a limited collection of cases and a solution for each case?

**Question 6**

What is the name of the input string of the computed solution?

**Question 7**

Which term refers to the specific issue to be addressed?

**Question 8**

What is the answer to the given question?

**Question 9**

What is the specific measurement result related to the theory?

**Text number 4**

To highlight the difference between a problem and a case, consider the following case from the decision version of the itinerant salesman problem: Is there a route of up to 2000 km that passes through all 15 major cities in Germany? The quantitative answer to this problem example is of little use in solving other problem examples, such as the question asking for a round trip through all the destinations in Milan with a total length of 10 km or less. For this reason, complexity theory deals with computational problems and not with specific problem instances.

**Question 0**

How many kilometres does the problem of salesmen trying to classify the route between the 15 largest cities in Germany?

**Question 1**

What is an example of a case where a quantitative answer to a roving salesman's problem does not provide an answer?

**Question 2**

What does computational complexity theory aim to answer in particular?

**Question 3**

How many kilometres does the traveller problem aim to classify the route between the 15 smallest cities in Germany?

**Question 4**

What is the qualitative answer to this problem?

**Question 5**

What is an example of a case where a qualitative answer from a travelling salesperson does not provide an answer?

**Question 6**

What is the theory of computational simplicity trying to answer in particular?

**Text number 5**

When it comes to computational problems, an example of a problem is a string in the alphabet. In general, the alphabet is a binary alphabet (i.e. a set {0,1}), and strings are therefore strings of bits. As in a real-world computer, mathematical objects other than bit strings must be encoded in an appropriate way. For example, integers can be represented in binary form, and graphs can be encoded directly by their adjacency matrices or by encoding their adjacency lists in binary form.

**Question 0**

What can be described in a computational problem as a string over the alphabet?

**Question 1**

What is the name of the alphabet most commonly used in problem dancing?

**Question 2**

What is another term for the string of problem instances?

**Question 3**

How are integers commonly expressed in the encoding of mathematical objects?

**Question 4**

How can descriptors be encoded?

**Question 5**

What is a string over a Greek number when considering a computational problem?

**Question 6**

What is the name of an alphabet that is rarely used in a problem situation?

**Question 7**

What is the second term for the string in the problem question?

**Question 8**

What does non-binary notation represent in the encoding of mathematical objects?

**Question 9**

How can descriptors be coded indirectly?

**Text number 6**

Decision problems are one of the key research topics in computational complexity theory. A decision problem is a type of computational problem whose answer is either yes or no, or alternately 1 or 0. A decision problem can be viewed as a formal language, where the members of the language are instances whose outcome is yes, and the non-members are instances whose outcome is no. The goal is to use the algorithm to decide whether a given input string belongs to the formal language under consideration. If the algorithm solving this problem returns yes, the algorithm is said to accept the input string, otherwise it is said to reject the input string.

**Question 0**

What kind of problems are one of the main topics of computational complexity theory?

**Question 1**

What are the two simple word answers to the final problem?

**Question 2**

What are the two overall reading answers to the final problem?

**Question 3**

What is the output of the language member of the decision problem?

**Question 4**

Which answer means that the algorithm has accepted the input string?

**Question 5**

What kind of solutions are one of the key research topics in computational complexity theory?

**Question 6**

What is a typical computational problem with a yes or no answer?

**Question 7**

What can be considered an informal language, with language instances where the input is yes?

**Question 8**

What are the three overall reading answers to the final problem?

**Question 9**

Which answer means that the solution has accepted the input string?

**Text number 7**

An example of a decision problem is the following. The input is an arbitrary graph. The problem is to decide whether the given graph is connected or not. The formal language associated with this decision problem is then the set of all connected graphs - of course, to obtain a precise definition of this language, one has to decide how to encode the graphs as binary strings.

**Question 0**

What kind of graph is an example of an input to a decision problem?

**Question 1**

What is the term for the set of all connected graphs related to this decision problem?

**Question 2**

What coding decision must be made to determine the exact definition of a formal language?

**Question 3**

What type of graph is an example of a printout used in a decision problem?

**Question 4**

What is the term for the set of all unrelated graphs related to this decision problem?

**Question 5**

What coding decision must be made to determine an imprecise definition of a formal language?

**Question 6**

How do you get a vague definition for this language?

**Text number 8**

A function problem is a computational problem in which a single output (an integer function) is expected for each input, but the output is more complex than in a decision problem, i.e. it is not just a yes or no. Notable examples include the itinerant salesman problem and the integer multiplication problem.

**Question 0**

What is an example of a function problem?

**Question 1**

How many outputs are expected for each input in a function problem?

**Question 2**

What type of problem is an example of a roving salesman problem?

**Question 3**

What is another example of a function problem besides the roving salesman problem?

**Question 4**

Is the result of a functional problem characterised by a simple or a complex answer?

**Question 5**

What is a computational solution that expects one input for each input?

**Question 6**

What is expected when computational problems expect multiple outputs for each input?

**Question 7**

What is an example of a solution to a function?

**Question 8**

What are some other non-essential examples of a function problem?

**Question 9**

Is the result of a functional solution characterised by a simple or complex answer?

**Text number 9**

It is tempting to think that the concept of function problems is much more versatile than the concept of decision problems. However, this is not the case, as functional problems can be reformulated as decision problems. For example, the multiplication of two integers can be expressed as a set of triangles (a, b, c) for which a × b = c holds. Deciding whether a given triangle belongs to this set is equivalent to solving the problem of multiplying two numbers.

**Question 0**

How can policy problems typically be reformulated?

**Question 1**

If two integers are multiplied and a value is printed, what is the name of this expression?

**Question 2**

What cannot be reformulated as decision problems?

**Question 3**

What is the name of the expression in which three integers are multiplied?

**Question 4**

Which is equivalent to solving the problem of multiplying three chapters/

**Text number 10**

To measure the difficulty of solving a computational problem, you may want to see how much time the best algorithm needs to solve the problem. However, the execution time can usually depend on the case. In particular, larger instances require more time to solve. Thus, the time (or space, or any measure of complexity) required to solve a problem is calculated as a function of the size of the instance. This is usually the size of the input in bits. Complexity theory is interested in how algorithms scale as the size of the input increases. For example, in the problem of finding the connectivity of a graph, how much more time does it take to solve the problem for a 2n-point graph than for an n-point graph?

**Question 0**

What is a commonly used measure to determine the complexity of a computational problem?

**Question 1**

What is one variable on which the running time can depend?

**Question 2**

How do you calculate the time needed to solve a problem?

**Question 3**

In which unit is the feed size measured?

**Question 4**

Complexity theory seeks to define the scale of algorithms in relation to what other variable?

**Question 5**

How do you measure the simplicity of a computational problem?

**Question 6**

What is the one variable that does not depend on the passage of time?

**Question 7**

How do you calculate the time needed to get the question to the problem?

**Question 8**

What's interesting is how the algorithms scale as the input size decreases.

**Question 9**

How do you calculate the time not needed to solve a problem?

**Text number 11**

Since the time taken for inputs of the same size can be different, the worst-case time complexity T(n) is defined as the maximum time taken for all inputs of size n. If T(n) is polynomial with respect to n, the algorithm is said to be a polynomial-time algorithm. According to Cobham's theorem, a problem can be solved with a feasible amount of resources if a polynomial-time algorithm can be used.

**Question 0**

According to whose thesis is the solution to a problem solvable with reasonable resources if it allows a polynomial-time algorithm?

**Question 1**

If the size of the input is n, what can be assumed to be a function of n?

**Question 2**

Which term corresponds to the largest measure of time in all functions of n?

**Question 3**

How is the time complexity of the worst case written as an expression?

**Question 4**

Assuming that T represents a polynomial T(n), what is the term for the corresponding algorithm?

**Question 5**

How is the elapsed time expressed as a function of x?

**Question 6**

According to whose hypothesis is the solution to the problem solvable with reasonable resources, assuming that it allows a mono-inomial-time algorithm?

**Question 7**

Which term corresponds to the minimum measurement of time in all functions of n?

**Question 8**

How is the time complexity of the best case written as an expression?

**Question 9**

What is the term given to the corresponding algorithm assuming that T represents a monomial in T(n)?

**Text number 12**

A Turing machine is a mathematical model of a general purpose calculating machine. It is a theoretical device that deals with symbols on a tape. Turing machines are not intended as a practical computing technique, but rather as a thought experiment representing a computing machine - anything from an advanced supercomputer to a mathematician with a pen and paper. It is believed that if a problem can be solved by an algorithm, there is a Turing machine that will solve the problem. This is in fact a statement of Church and Turing's thesis. It is also known that anything that can be computed by other currently known computational models, such as RAM, Conway's life game, cellular automata, or any programming language, can be computed by a Turing machine. Because Turing machines are easy to analyse mathematically, and because they are believed to be as efficient as any other computational model, the Turing machine is the most widely used model in complexity theory.

**Question 0**

What is the term for a mathematical model that theoretically represents a general purpose computing engine?

**Question 1**

It is generally assumed that a Turing machine can solve any problem that can also be solved by any?

**Question 2**

What is the most common model used in complexity theory?

**Question 3**

What does the Turing machine process on tape?

**Question 4**

What is the scientific model of a general purpose calculator?

**Question 5**

What is the scientific device that manipulates the symbols on the tape?

**Question 6**

What is meant by practical information technology?

**Question 7**

What is a scientific experiment that can solve a problem using algorithms?

**Text number 13**

A deterministic Turing machine is the simplest Turing machine that uses a fixed set of rules to determine its future operations. A probabilistic Turing machine is a deterministic Turing machine with random bits added. The ability to make probabilistic decisions often helps algorithms solve problems more efficiently. Algorithms that use random bits are called randomized algorithms. A nondeterministic Turing machine is a deterministic Turing machine with the added property of nondeterminism, which allows the Turing machine to have multiple possible future actions from a given state. One way to look at nondeterminism is that a Turing machine branches into many possible computational paths at each step, and if it solves a problem on any of these branches, it is said to have solved the problem. Clearly, this model is not intended to be a physically feasible model, but is just a theoretically interesting abstract machine that generates particularly interesting classes of complexity. For examples, see the non-deterministic algorithm.

**Question 0**

What is generally considered to be the simplest iteration of a Turing machine?

**Question 1**

What fixed set of factors determines the operation of a deterministic Turing machine?

**Question 2**

What term is used to identify a deterministic Turing machine with extra random bits?

**Question 3**

What kind of Turing machine is capable of multiple operations and spans different computational paths?

**Question 4**

What is the term for algorithms that use random bits?

**Question 5**

What uses flexible rules to determine its future actions?

**Question 6**

What is a deterministic Turing machine with an extra random tape store?

**Question 7**

What often doesn't help algorithms solve problems more efficiently?

**Question 8**

Which machine allows a machine to have several possible past actions from a given state?

**Question 9**

What is one way not to deal with non-determinism?

**Text number 14**

Many types of Turing machines are used to define complexity classes, such as deterministic Turing machines, probability machines, non-deterministic Turing machines, quantum Turing machines, symmetric Turing machines and alternating Turing machines. In principle, they are all equally efficient, but when resources (such as time or space) are limited, some may be more efficient than others.

**Question 0**

Turing machines are commonly used to define what?

**Question 1**

What two factors directly affect how efficient a Turing machine can be or not be?

**Question 2**

What are two examples of Turing machine types in the definition of complexity classes?

**Question 3**

What are the many types of Turing machines not used for?

**Question 4**

Which three factors directly affect how efficient a Turing machine can be or not be?

**Question 5**

Which machines are not as efficient in principle?

**Question 6**

Which may not be more powerful than others, given the resources of time or space?

**Text number 15**

In the literature, many machine models have been proposed that differ from the multi-band Turing machines, such as random access machines. Perhaps surprisingly, each of these models can be converted to another model without providing any additional computing power. The time and memory consumption of these alternative models may vary. What all these models have in common is that the machines operate deterministically.

**Question 0**

What is an example of a machine model that differs from the commonly accepted multi-band Turing machine?

**Question 1**

When considering Turing machines and alternative variables, which measurement is not affected by the conversion between machine models?

**Question 2**

Which two resources commonly consumed in the alternative models typically vary?

**Question 3**

What do alternative machine models, such as random access machines, have in common with Turing machines?

**Question 4**

What is not an example of a machine model that differs from the generally accepted multi-band Turing machine?

**Question 5**

How is the measurement affected by the conversion between machine models?

**Question 6**

Which two resources are rarely consumed by alternative models and are known to be typically variable?

**Question 7**

What do these models not have in common?

**Text number 16**

However, some computational problems are easier to analyse with more unusual resources. For example, a non-deterministic Turing machine is a computational model that is allowed to branch and check many different possibilities at once. A non-deterministic Turing machine has very little to do with how we physically want to compute algorithms, but its branching describes exactly the many mathematical models we want to analyze, so non-deterministic time is a very important resource for analyzing computational problems.

**Question 0**

What type of Turing machine is characterised by the ability to check several possibilities simultaneously?

**Question 1**

What often influences or facilitates the ease of analysis in computational problems?

**Question 2**

A non-deterministic Turing machine can describe which side of a useful analysis?

**Question 3**

What is the most critical resource for analysing computational problems related to non-deterministic Turing machines?

**Question 4**

What is more difficult to analyse for more unusual resources?

**Question 5**

What kind of machine is a calculation model that cannot branch out to consider many different possibilities at once?

**Question 6**

Which has a lot to do with how we want to physically compute algorithms?

**Question 7**

Which machine branching does not exactly describe many of the mathematical models we want to analyse?

**Question 8**

What is the least critical resource for analysing computational problems involving non-deterministic Turing machines?

**Text number 17**

If you want to define exactly what it means to solve a problem in a given time and space, you use a computational model like a deterministic Turing machine. The time required by a deterministic Turing machine M for an input x is the total number of state transitions, or steps, that the machine makes before it stops and gives an answer ("yes" or "no"). A Turing machine M is said to operate in time f(n) if the time required by M for each input of length n is at most f(n). A decision problem A can be solved in time f(n) if there exists a Turing machine operating in time f(n) that solves the problem. Since complexity theory is interested in classifying problems according to their difficulty, sets of problems are defined according to some criteria. For example, the set of problems that can be solved by a deterministic Turing machine in time f(n) is denoted DTIME(f(n)).

**Question 0**

What is the time it takes for a deterministic Turing machine to produce an answer?

**Question 1**

Complexity theory classifies problems according to which primary characteristic?

**Question 2**

Which expression can be used to define any set of problems that can be solved in time by a deterministic Turing machine?

**Question 3**

What is the most critical resource measured when evaluating the ability of a Turing machine to solve a given set of problems?

**Question 4**

What is not used to give a precise definition of what it means to solve a problem in a given amount of time and space?

**Question 5**

How is a Turing machine M said to be inoperative?

**Question 6**

What expression can be used to determine any solution set that can be solved in time by a deterministic Turing machine?

**Question 7**

What is the least critical resource measured when evaluating the ability of a Turing machine to solve a given set of problems?

**Question 8**

How can the decision problem B be solved in time x(f)?

**Text number 18**

Similar definitions can be made for space requirements. Although time and space are the best known complexity resources, any measure of complexity can be considered a computational resource. Complexity measures are very generally defined using Blum's complexity axioms. Other complexity measures used in complexity theory include communication complexity, circuit complexity and decision tree complexity.

**Question 0**

Time and space are both examples of what type of resources?

**Question 1**

A complexity resource can also be described as what kind of resource?

**Question 2**

What is typically used to define complexity measures at scale?

**Question 3**

The complexity of communication is an example of which type of measure?

**Question 4**

The decision tree is an example of what type of measure?

**Question 5**

What can't be done because of space requirements?

**Question 6**

What are the least known complexity resources?

**Question 7**

How are complexity measures not usually defined?

**Question 8**

What other measures of complexity are not used in complexity theory?

**Question 9**

Which type of measure is not an example of the complexity of communication?

**Text number 19**

Best, worst and average complexity refer to three different ways of measuring the time complexity (or other measure of complexity) of inputs of the same size. Since some inputs of size n may be faster to solve than others, we define the following complexities:

**Question 0**

What are the three primary terms used to describe the complexity of a case?

**Question 1**

The probabilities of the complexity of the case give varying probabilities that are consistent with which general measure?

**Question 2**

What is a common example of a critical complexity measure?

**Question 3**

The complexity of the case gives three probabilities, which variable differs and remains the same?

**Question 4**

Which three secondary expressions are used to show the complexity of the case?

**Question 5**

What are the three different ways to measure the complexity of space?

**Question 6**

What is one rare example of a critical complexity measure?

**Question 7**

Given four probabilities of case complexity, which variable remains the same?

**Text number 20**

For example, consider the deterministic sorting algorithm quicksort. It solves the problem of sorting a list of integers given as input. In the worst case, the input is sorted or sorted in reverse order, and the algorithm needs O(n2) time in this case. Assuming that all possible permutations of the input list are equally likely, the average time required for sorting is O(n log n). The best case is when each permutation splits the list in half, in which case O(n log n) time is also required.

**Question 0**

What provides a solution to the input list of integers that needs to be sorted?

**Question 1**

When it takes a long time to sort the integers, what is the complexity of the case?

**Question 2**

What expression is used to express the complexity of the worst-case scenario as expressed in the past period?

**Question 3**

What does not solve the problem of sorting a list of integers given as input?

**Question 4**

What does the deterministic allocation algorithm quicksort do?

**Question 5**

What does the complexity of a case represent when the time needed to sort the integers is limited?

**Question 6**

What expression is not used to express the complexity of the worst case scenario as expressed in the past period?

**Question 7**

What complexity is represented by the case where each pivoting divides the list into thirds, also requiring O(n log n) time?

**Text number 21**

To classify computation time (or equivalent resources, such as space consumption), we want to show upper and lower bounds on the minimum amount of time it takes to solve a given problem with the most efficient algorithm. The complexity of an algorithm is usually the complexity of its worst case, unless otherwise specified. The analysis of a given algorithm falls within the domain of algorithm analysis. To show an upper bound T(n) on the time complexity of a problem, one need only show that there exists a certain algorithm whose execution time is at most T(n). However, proving lower time bounds is much more difficult, because lower time bounds make a claim about all possible algorithms that solve a given problem. The expression "all possible algorithms" does not only include algorithms known today, but all algorithms that may be discovered in the future. To show a lower bound on T(n) for a problem requires showing that the time complexity of any algorithm cannot be less than T(n).

**Question 0**

The classification of resources depends on determining the upper and lower limits of the minimum time needed for what?

**Question 1**

The analysis of a particular algorithm typically falls into which field of computational science?

**Question 2**

Which time limit is more difficult to determine?

**Question 3**

The algorithm that assigns T(n) represents what measure of time complexity?

**Question 4**

What is a colloquial expression used to express a continuum of algorithms that has unlimited availability regardless of time?

**Question 5**

How is calculation time (or equivalent resources) classified?

**Question 6**

What is generally considered to be the best possible complexity, unless otherwise stated?

**Question 7**

What is not covered by the analysis of algorithms>?

**Question 8**

When is it not necessary to show only that there exists a certain algorithm execution time mons T(nO?).

**Question 9**

What is easy about proving lower bounds?

**Text number 22**

Upper and lower bounds are usually indicated using a capital O, which hides standard and lower terms. This makes the bounds independent of the details of the calculation model used. For example, if T(n) = 7n2 + 15n + 40, the capital O notation is used to write T(n) = O(n2).

**Question 0**

What phrase is usually used to express upper or lower limits?

**Question 1**

What's behind the big O?

**Question 2**

How would you write T(n) = 7n2 + 15n + 40 with a capital O?

**Question 3**

The Big O notation gives autonomy to the upper and lower boundaries in relation to what?

**Question 4**

What is not usually indicated with a capital O?

**Question 5**

What does not hide standard coefficients or smaller terms?

**Question 6**

What makes the limits dependent on specific details of the calculation model?

**Question 7**

How would you abbreviate T(n)=8n2 + 16n = 40 with a capital O?

**Text number 23**

Of course, some complexity classes have complex definitions that do not fit into this framework. A typical complexity class is therefore defined as follows:

**Question 0**

What are the complex definitions that prevent classification into a framework?

**Question 1**

Into which categories are complexity classes usually classified?

**Question 2**

Which variable can make it difficult to create a framework for complexity classes?

**Question 3**

What fits into the framework of complexity classes?

**Question 4**

What are the straightforward definitions that prevent classification into a framework?

**Question 5**

Which complexity categories are not usually classified?

**Question 6**

Which variable is easy to define in the complexity classes framework?

**Text number 24**

But if the computation time is bounded by a concrete function f(n), we often obtain complexity classes that depend on the chosen machine model. For example, the language {xx | x is any binary string} can be solved in linear time by a multi-band Turing machine, but necessarily requires quadratic time in the single-band Turing machine model. If polynomial variations in the running times are allowed, the Cobham-Edmonds thesis states that "the time complexities in any two rational and general models of computation are polynomially related" (Goldreich 2008, Section 1.2). This forms the basis for the complexity class P, which is the set of decision problems that a deterministic Turing machine can solve in polynomial time. The corresponding set of function problems is FP.

**Question 0**

Concrete computation time constraints often produce classes of complexity that depend on what?

**Question 1**

What is the time needed to solve a multi-band Turing machine?

**Question 2**

A language that is solved in quadratic time requires the use of which type of Turing machine?

**Question 3**

According to which thesis is there a polynomial relationship between the time complexity of a computational model?

**Question 4**

Which class of decision problems can a deterministic Turing machine solve given polynomial time constraints?

**Question 5**

Which often does not produce complexity classes that depend on the machine model chosen?

**Question 6**

What does not often produce complexity classes with a concrete computation time constraint?

**Question 7**

What cannot be solved in linear time with a multi-band Turing machine?

**Question 8**

What is not a binary string?

**Question 9**

According to which thesis is there a trinomial relationship in the time complexity of a computational model?

**Text number 25**

Many important complexity classes can be defined by limiting the time or space used by the algorithm. Some of the important complexity classes of decision problems defined in this way are:

**Question 0**

What are two examples of measurements that are tied to algorithms to determine complexity classes?

**Question 1**

What function do algorithms use to define measurements such as time or space?

**Question 2**

The delimitation of time and space or similar dimensions is often used in algorithms to define what?

**Question 3**

What cannot be specified by limiting the time or space used by the algorithm?

**Question 4**

What are three examples of measurements that are tied to algorithms to determine complexity classes?

**Question 5**

What function do algorithms use to define measurements such as time and numbers?

**Question 6**

What algorithms are often used to measure the limitation of space and atmospheric measurements?

**Text number 26**

Other important complexity classes are BPP, ZPP and RP, defined by probabilistic Turing machines, AC and NC, defined by Boolean circuits, and BQP and QMA, defined by quantum Turing machines. #P is an important complexity class for computational problems (not decision problems). Classes such as IP and AM are defined using interactive proof systems. ALL is the class of all decision problems.

**Question 0**

What are three examples of complexity classes related to the definitions of probabilistic Turing machines?

**Question 1**

AC and NC are complexity classes typically associated with which types of circuits?

**Question 2**

BQP and QMA are examples of the complexity classes most commonly associated with which type of Turing machine?

**Question 3**

What expression is used to describe the level of complexity of the calculation problems?

**Question 4**

What type of certification scheme is most commonly used to define IP and AM?

**Question 5**

What are the four other main categories of complexity?

**Question 6**

Which machine does not specify BPP, ZPP and RP?

**Question 7**

Which machine does not specify BQP or QMA?

**Question 8**

What is the least important category of complexity of the calculation problems?

**Question 9**

Which system often does not define categories such as IP and AM/AM.

**Text number 27**

For complexity classes defined in this way, it is desirable to show that (for example) relaxing computation time requirements does indeed define a larger set of problems. Even if DTIME(n) is included in the DTIME(n2) class, it would be interesting to know whether the inclusion is strict. For time and space requirements, the answer to such questions can be obtained from the time and space hierarchy theorem. They are called hierarchy theorems because they result in an appropriate hierarchy of classes defined by the constraints on the resources in question. Thus, there are pairs of complexity classes, one of which is properly contained in the other. Once we have inferred such proper set inclusions, we can make quantitative statements about how much more time or space is needed to increase the number of problems to be solved.

**Question 0**

What is an example of a measurement within a complexity class that would cause greater problems if the limits were relaxed?

**Question 1**

In which clause can DTIME(n) be expected to be found?

**Question 2**

Which theorems are responsible for determining the time and space requirements?

**Question 3**

What do resources produce according to hierarchical theories?

**Question 4**

What kind of opinion is given when trying to determine the time and space requirements needed to increase the final number of problems solved?

**Question 5**

What is not an example of a measurement within a complexity class that would cause greater problems if the limits were relaxed?

**Question 6**

What does not define a larger set of problems?

**Question 7**

Which clause does not usually contain a DTIME(n) clause?

**Question 8**

What does not create a proper hierarchy for the categories defined by limiting those resources?

**Question 9**

What kind of opinion is not given when trying to determine the time and space requirements needed to increase the final number of problems solved?

**Text number 28**

Time and space hierarchy theories form the basis for most complexity class distinctions. For example, the time hierarchy theorem says that P is strictly contained in EXPTIME, and the space hierarchy theorem says that L is strictly contained in PSPACE.

**Question 0**

What is the basis of the complexity class distinction results?

**Question 1**

What is responsible for limiting P according to the time hierarchy theorem?

**Question 2**

Within which variable is L bounded by the space hierarchy theorem?

**Question 3**

What is not the basis for most complexity class distinctions?

**Question 4**

What are the hierarchical theorems of past time and space based on?

**Question 5**

What does EXPTIME not actually contain?

**Question 6**

What does PSPACE not actually contain?

**Text number 29**

Many complexity classes are defined using the concept of reduction. Reduction is the transformation of one problem into another problem. It describes the informal concept that a problem is at least as hard as another problem. For example, if problem X can be solved by algorithm Y, X is no harder than Y, and we say that X reduces to Y. There are many types of reductions, based on the reduction method, such as Cook's reductions, Karp's reductions, and Levin's reductions, and on the complexity constraint on reductions, such as polynomial-time reductions or log-space reductions.

**Question 0**

What concept is often used to define complexity classes?

**Question 1**

Simplification takes one problem and changes it to why?

**Question 2**

By reduction, if X and Y can be solved by the same algorithm, what is the function of X with respect to Y?

**Question 3**

What are two examples of different types of deductions?

**Question 4**

Polynomial time reductions are an example of what?

**Question 5**

What do many complexity classes not define?

**Question 6**

What is defined using reduction theory?

**Question 7**

What is turning two problems into three problems?

**Question 8**

What is the formal concept of a problem being at least as difficult as another problem?

**Question 9**

What are the six types of deductions?

**Text number 30**

The most commonly used reduction is polynomial-time reduction. This means that the reduction process takes polynomial time. For example, the problem of squaring an integer can be reduced to the problem of multiplying two integers. This means that an algorithm for multiplying two integers can be used to square an integer. Indeed, this can be done by giving the same input to both inputs of the multiplication algorithm. This shows that squaring is no more difficult than multiplication, because squaring can be reduced to multiplication.

**Question 0**

What is the most commonly used type of deduction?

**Question 1**

What is the square of the integer in polynomial time reduction?

**Question 2**

What measure of time is used in polynomial time reduction?

**Question 3**

What should remain constant in a multiplication algorithm so that the result is the same whether two integers are multiplied or squared?

**Question 4**

According to polynomial time reduction, squaring can eventually be logically reduced to what?

**Question 5**

What is the least used type of deduction?

**Question 6**

What is polynomial space reduction?

**Question 7**

Where can the problem of integer division be reduced to?

**Question 8**

What does not need to remain constant in a multiplication algorithm in order for the result to be the same regardless of whether two integers are multiplied or a square is formed?

**Question 9**

What is more difficult than multiplication?

**Text number 31**

This motivates the notion that a problem is hard for a complexity class. A problem X is hard for a problem class C if every problem in C can be reduced to problem X. Thus, no problem in C is harder than X because an algorithm for X allows any problem in C to be solved. Of course, the notion of difficulty of a problem depends on the type of reduction used. For complexity classes above P, polynomial-time reductions are commonly used. In particular, for NP, the set of hard problems is the set of NP-hard problems.

**Question 0**

The complexity of problems often depends on what?

**Question 1**

What would cause a conflict between problem X and problem C in the context of reduction?

**Question 2**

An algorithm X that reduces to C would do what?

**Question 3**

A problem set that is hard for the expression NP can also be declared as how?

**Question 4**

What is the complexity of problems that often does not depend on?

**Question 5**

What would not cause a conflict between problem X and problem C in the context of reduction?

**Question 6**

Which problem in C is more difficult than X?

**Question 7**

How to express a problem set that is difficult to express in terms of QP?

**Text number 32**

If problem X belongs to C and is difficult for C, X is said to be perfect for C. This means that X is the hardest problem in C. (Since many problems can be equally hard, X can be said to be one of the hardest problems in C.) Thus, the class of NP-complete problems contains the hardest problems in NP in the sense that they are most likely to be problems that do not belong to P. Since the problem P = NP has not been solved, the fact that a known NP-complete problem Π2 can be reduced to another problem Π1 would indicate that there is no known polynomial-time solution to problem Π1. This is because a polynomial-time solution to problem Π1 would produce a polynomial-time solution to problem Π2. Similarly, since all NP problems can be reduced to a set, finding an NP-complete problem that can be solved in polynomial time would imply that P = NP.

**Question 0**

What are the most difficult problems in NP that can be written by analogy?

**Question 1**

In which problem category are NP problems least likely to occur?

**Question 2**

If P = NP is unsolvable and the reduction is applied to a known NP-complete problem with respect to Π2 with respect to Π1, what conclusion can be drawn for Π1?

**Question 3**

If polynomial time can be used in the NP-complete problem, what does it mean that P is equal?

**Question 4**

What happens if problem X is in C and soft for C?

**Question 5**

What is C's softest problem?

**Question 6**

Which category contains the least difficult problems in NP?

**Question 7**

What would show that there is a known polynomial-time solution to Ii1?

**Text number 33**

The complexity class P is often seen as a mathematical abstraction that models those computational problems for which an efficient algorithm exists. This hypothesis is called the Cobham-Edmonds thesis. The complexity class NP, on the other hand, contains many problems that people would like to solve efficiently but for which no efficient algorithm is known, such as Boole's satisfiability problem, Hamilton's path problem and the vertex cover problem. Since deterministic Turing machines are special non-deterministic Turing machines, it is easy to see that every problem of class P also belongs to the NP class.

**Question 0**

Which complexity class is characterised by computational tasks and efficient algorithms?

**Question 1**

Which hypothesis is related to the complexity class of P, viewed as a mathematical abstraction with efficient algorithmic functionality?

**Question 2**

In which complexity class are unknown algorithms commonly used to improve solvability?

**Question 3**

What is an example of a problem that belongs to the NP-complexity class?

**Question 4**

In which theoretical machine is it established that the problem in P is a NP-hard problem?

**Question 5**

What is often considered a scientific abstraction to model those computational tasks for which an efficient algorithm exists?

**Question 6**

Which theory is the Cobham-Edward thesis?

**Question 7**

Which complexity class is not generally characterized by unknown algorithms to improve solubility?

**Question 8**

What is an example of a problem that falls into the NP-complexity category?

**Question 9**

Which ,theoretical machine did not confirm that the problem in the P proves that it belongs to the NX category?

**Text number 34**

The question of whether P equals NP is one of the most important open questions in theoretical computer science, because the solution has far-reaching implications. If the answer is yes, it can be shown that there are more efficient solutions to many important problems. These include various integer programming problems in operations research, many problems in logistics, the prediction of protein structures in biology, and the ability to find formal proofs of pure mathematical theorems. The P vs. NP problem is one of the Millennium Prize Problems proposed by the Clay Mathematics Institute. A prize of USD 1 000 000 is offered for solving the problem.

**Question 0**

If P eventually turns out to be equal to NP, what effect would this have on the efficiency of the problems?

**Question 1**

What is a particular problem in biology that would be useful to solve if we could determine that P = NP?

**Question 2**

What is the reward offered for finding the solution P=NP?

**Question 3**

What is one of the most important open questions in theoretical computer science?

**Question 4**

What would happen if we eventually proved that P is not equal to NP?

**Question 5**

What is a particular chemistry problem that would benefit from the determination that P = NP?

**Question 6**

Which problem was proposed by the Clay Mathematics Institute in the Alpha Prize Problems competition?

**Question 7**

What was the prize for solving P=NP in the Alpha Prize Problems competition?

**Text number 35**

Ladner showed that if P ≠ NP, then there are problems in NP that are neither in P nor NP-complete. Such problems are called NP-complete problems. The graph isomorphism problem, the discrete logarithm problem, and the integer multiplication problem are examples of problems that are believed to be NP-complete problems. They are some of the few NP problems that are not known to be in P or to be NP-complete.

**Question 0**

Who showed that P= NP implies problems that are not in P or are NP-complete?

**Question 1**

What is the name of the problem that satisfies Ladner's claim?

**Question 2**

What is an example of an NP-complete problem that is not known to exist in P or is NP-complete?

**Question 3**

Who showed that if P=NQ, then NQ has problems that are not perfect with respect to either P or NQ?

**Question 4**

What is the name of the problem that matches Ladder's statement?

**Question 5**

What is not an example of an NP-complete problem that is not known to exist in P or is NP-complete?

**Question 6**

What are four examples of problems that are believed to be NP=intermediate level problems?

**Text number 36**

The graph isomorphism problem is a computational problem to determine whether two finite graphs are isomorphic. An important unsolved problem in complexity theory is whether the graph isomorphism problem is of class P, NP-complete or NP-intermediate. The answer is not known, but it is believed that the problem is at least not NP-complete. If the isomorphism of the graph is NP-complete, the polynomial time hierarchy collapses to its second level. Since it is generally believed that the polynomial time hierarchy does not collapse to any finite level, it is believed that the graph isomorphism is not NP-complete. The best algorithm for this problem, developed by Laszlo Babai and Eugene Luks, has an execution time of 2O(√(n log(n)) for an n-point graph.

**Question 0**

What is the problem of determining whether two finite graphs are isomorphic?

**Question 1**

Which class of graph isomorphism problem is most often not considered to be associated with a final specification?

**Question 2**

Which finite hierarchy implies that the graph isomorphism problem is NP-complete?

**Question 3**

To what level would the polynomial time hierarchy collapse if the isomorphism of the graph is NP-complete?

**Question 4**

Who are commonly associated with the algorithm that is generally considered the most efficient in terms of finite polynomial hierarchy and graph isomorphism?

**Question 5**

What is the graphite insulation problem?

**Question 6**

What is the problem of determining whether three finite graphs are isomorphic?

**Question 7**

What is an important problem solved in complexity theory?

**Question 8**

Which infinite hierarchy implies that the graph isomorphism problem is NQ-complete?

**Question 9**

Which polynomial hierarchy would collapse if the graph isomorphism is NQ-perfect?

**Text number 37**

The integer factorization problem is a computational problem to determine the factorization of the prime numbers of a given integer. Expressed as a decision problem, it is the problem of deciding whether the input has a factor less than k. An efficient algorithm for factoring integers is not known, and this fact forms the basis of many modern cryptographic schemes, such as the RSA algorithm. The integer factorisation problem exists in NP and co-NP (and even in UP and co-UP). If the problem is NP-complete, the polynomial time hierarchy collapses to its first level (i.e. NP is equal to co-NP). The best known algorithm for integer factorization is the general number field sieve, which takes O(e(64/9)1/3(n.log 2)1/3(log (n.log 2))2/3) to factor an n-bit integer. However, the best known quantum algorithm for this problem, Shor's algorithm, works in polynomial time. Unfortunately, this fact does not tell us much about where the problem lies in relation to non-quantum complexity classes.

**Question 0**

What computational problem is commonly associated with the multiplication of prime numbers?

**Question 1**

In the integer multiplication problem, the main goal is to determine whether the value of the input is less than which variable?

**Question 2**

Which commonly used system is based on the fact that there is currently no known factorization problem for integers?

**Question 3**

What is the best-known algorithm for the integer multiplication problem?

**Question 4**

What is the integer exercise problem?

**Question 5**

What computational problem is not usually associated with multiplication of prime numbers?

**Question 6**

What problem is formulated to solve whether the coefficient of the input is greater than k?

**Question 7**

Which problem would cause the polynomial time hierarchy to collapse to its second level?

**Question 8**

What is the least known algorithm related to the problem of multiplying integers?

**Text number 38**

Many known complexity classes are suspected to be unequal, but this has not been proven. For example, P ⊆ NP ⊆ PP ⊆ PSPACE, but it is possible that P = PSPACE. If P is not equal to NP, then P is not equal to PSPACE. Since there are many known complexity classes between P and PSPACE, such as RP, BPP, PP, BQP, MA, PH, etc., it is possible that all these complexity classes collapse into one class. Proving that any of these classes is inequality would be a major breakthrough in complexity theory.

**Question 0**

What is the unproven assumption that is usually associated with the value of complexity classes?

**Question 1**

Which expression can be used to illustrate the inequality of complexity classes?

**Question 2**

Where are the complexity classes RP, BPP, PP, BQP, MA and PH?

**Question 3**

What evidence between and among complexity classes would constitute a theoretical watershed for complexity theory?

**Question 4**

What is a proven assumption that is commonly associated with the value of complexity classes?

**Question 5**

Which expression can be used to illustrate the equality assumption for complexity classes?

**Question 6**

Where are the complexity classes RPP, BPP, PPP, BQP, MA and PH?

**Question 7**

What is impossible in complexity classes RP, BPP, PP, BQP, MA and PH?

**Question 8**

What is not a major breakthrough in complexity theory?

**Text number 39**

Similarly, co-NP is a category that includes complementary problems to NP problems (i.e. problems where the yes/no answers are reversed). It is believed that NP is not as large as co-NP, but this has not yet been proven. It has been shown that if the two complexity classes are not equal, P is not equal to NP.

**Question 0**

In which complexity class are there complementarity problems in NP problems?

**Question 1**

How are the yes/no answers to the NP complementarity problem expressed?

**Question 2**

What is generally believed to be the value ratio between P and co-NP?

**Question 3**

What consequences can be derived for P and NP if P and co-NP are found to be unequal?

**Question 4**

In which complexity class do incompatible problems of NP problems exist?

**Question 5**

How do yes/no answers to an incompatible problem APPEAR?

**Question 6**

What is not generally believed to be the value ratio between P and co-NP?

**Question 7**

What consequence cannot be derived for P and NP if P and co-NP are found to be unequal?

**Text number 40**

Similarly, it is not known whether L (the set of all problems that can be solved in logarithmic space) is strictly contained within P or whether it is equal to P. In between the two, there are many complexity classes, such as NL and NC, and it is not known whether they are separate or equal classes.

**Question 0**

Which variable is associated with all problems solved in logarithmic space?

**Question 1**

Although they are not known, what are the most commonly associated properties of L relative to P

**Question 2**

What is there between L and P that prevents the final determination of the relationship between L and P?

**Question 3**

What are the two levels of complexity between L and P?

**Question 4**

What is not known about the complexity classes between L and P that further prevents the determination of the value relation between L and P?

**Question 5**

Which variable is not related to all the problems that can be solved in logarithmic space?

**Question 6**

What are the least common characteristics between L and P?

**Question 7**

What is not between L and P that can be used to definitively determine the relationship between L and P?

**Question 8**

What are the three levels of complexity between L and P?

**Question 9**

What is known about the complexity between L and P that prevents the value of L and P from being determined?

**Text number 41**

Problems that can be solved in theory (e.g. given a lot but a limited amount of time) but take too long to solve in practice to be useful are called intractable problems. In complexity theory, problems for which there are no polynomial-time solutions are considered intractable for more than the smallest inputs. In fact, the Cobham-Edmonds thesis states that only those problems that can be solved in polynomial time can be computed by some computing device. Problems known to be intractable in this sense include those that are EXPTIME-hard. If NP is not the same as P, NP-complete problems are also intractable in this sense. To see why exponential-time algorithms can be practically unusable, consider a program that performs 2n operations before stopping. For a small n, say 100, and assuming for the sake of the example that the computer performs 1012 operations per second, the program would take about 4 × 1010 years, which is of the same order of magnitude as the age of the universe. Even if the computer were much faster, the program would be useful only in very small cases, and in this sense the intractability of the problem is somewhat independent of technological progress. Nevertheless, the polynomial time algorithm is not always practical. If its execution time is, say, n15, it is unreasonable to consider it efficient, and it is still only useless in small cases.

**Question 0**

What are problems that can be solved theoretically but take an excessive amount of time in practical applications?

**Question 1**

Intractable problems with no polynomial-time solutions negate the practical effectiveness of which type of algorithm?

**Question 2**

If NP is not equal to P, which problems can also be considered intractable?

**Question 3**

What are the problems that cannot be solved in theory but take too long to solve in practice to be useful?

**Question 4**

When are there problems in complexity theory whose solutions are polynomial in size?

**Question 5**

What says that only problems that cannot be solved in polynomial time can be feasibly computed by some computing device?

**Question 6**

When would a program not be useful in very small cases, and in that sense the intractability of the problem is somewhat independent of technological developments?

**Question 7**

Which algorithm is always practical?

**Text number 42**

What an intractable problem means in practice can be discussed. To say that the problem is not in P does not mean that all the major cases of the problem are difficult or that most of them are. For example, the decision problem in Presburger arithmetic has been shown to be outside P, yet algorithms have been written that solve the problem in reasonable time in most cases. Similarly, algorithms can solve the NP-complete backpack problem over a wide range of sizes in less than a quadratic time, and SAT solvers routinely handle large instances of the NP-complete Boolean satisfiability problem.

**Question 0**

Which variation of the arithmetic operation with the same name represents a decision problem that is not given in P?

**Question 1**

Despite the Presburger problem and its intractability, what has been done to find solutions in a reasonable time?

**Question 2**

What is an example of a problem that efficient algorithms have found a solution to, despite the difficulty of scale?

**Question 3**

How fast can the algorithm solve the NP-complete backpack problem?

**Question 4**

What is an example of another problem, characterised by large instances, that is routinely solved by SAT processors with efficient algorithms?

**Question 5**

Which unknown variation of an arithmetic calculation causes a decision problem that is not shown in P?

**Question 6**

What has not been done to find solutions in a reasonable time?

**Question 7**

What can't solve the NP-complete knapsack problem on a large scale in sub-quadratic time?

**Question 8**

What do SAT counters not usually address in testing?

**Text number 43**

Before the actual study of the complexity of algorithm problems began, various researchers created a number of arguments. The most influential of these was Alan Turing's 1936 definition of the Turing machine, which proved to be a very robust and flexible simplification of the computer.

**Question 0**

What tactics do researchers use to compensate for the previous deficit of work on the complexity of algorithmic problems?

**Question 1**

Who was the most influential researcher among those struggling with the lack of work on the complexity of algorithmic problems?

**Question 2**

Which theoretical device is considered to be the work of Alan Turing?

**Question 3**

In what year was the model of the calculator defined by Alan Turing obtained?

**Question 4**

What does a Turing machine emulate in the simplest sense?

**Question 5**

What have different companies put forward?

**Question 6**

What tactics are firms using to compensate for the previous shortfall in the complexity of algorithmic problems?

**Question 7**

Who was the least influential researcher working on the complexity of algorithmic problems?

**Question 8**

Which device was invented by Alan Turning in 1974?

**Question 9**

What was the robust and flexible simplification of the Turning calculator?

**Text number 44**

As Fortnow & Homer (2003) point out, the beginning of the systematic study of computational complexity owes much to the pioneering paper "On the Computational Complexity of Algorithms" by Juris Hartmanis and Richard Stearns (1965), which defined definitions of time and space complexity and proved hierarchical theories. In 1965, Edmonds also defined a 'good' algorithm as one whose execution time is limited to a polynomial of the input size.

**Question 0**

Which article is generally considered to be the starting point for systematic computational complexity studies?

**Question 1**

Who were the people responsible for writing "On the Computational Complexity of Algorithms"?

**Question 2**

In what year was Hatmanis and Stearns' groundbreaking work on computational complexity published?

**Question 3**

What complexity measures were defined in the document "On the Computational Complexity of Algorithms"?

**Question 4**

What year did Edmond's characterise a "good" algorithm?

**Question 5**

Which textbook is generally considered to be the starting point for sociology studies?

**Question 6**

Who wrote the book "On the Computational Complexity of Science"?

**Question 7**

Which groundbreaking article was written by Juris Hartmanis and Richard Stearns in 1975?

**Question 8**

What simple measures were defined in "On the Computational Complexity of Algorithms"?

**Text number 45**

Earlier publications investigating problems that Turing machines can solve with certain limited resources include John Myhill's definition of linear bounded automata (Myhill 1960), Raymond Smullyan's study of elementary sets (1961), and Hisao Yamada's paper on real-time computation (1962). A little earlier, Boris Trakhtenbrot (1956), a pioneer in the field from the Soviet Union, studied another special measure of complexity. As he recalls:

**Question 0**

Who introduced the definition of a linear limited automaton in 1960?

**Question 1**

In what year did Raymond Sullivan publish a study on the primitive forces?

**Question 2**

Who was responsible in 1962 for writing an article on real-time computing methods?

**Question 3**

Who wrote the later papers examining the problems that Turning machines could solve?

**Question 4**

Who introduced the definition of a linear limited automaton in 1970?

**Question 5**

In what year did Dick Sullivan publish a study on the primitive forces?

**Question 6**

Who wrote an article on real-time calculations in 1973?

**Question 7**

Who pioneered and studied the special complexity measure in 1948?

**Text number 46**

Although some proofs of complexity theorems regularly assume a concrete choice of input encoding, the discussion tries to be abstract enough to be independent of the choice of encoding. This can be achieved by ensuring that different representations can be converted to each other in an efficient way.

**Question 0**

What is the concrete choice that is typically assumed in most complexity theorems?

**Question 1**

When aiming to maintain a level of abstraction, which choice is typically left independent?

**Question 2**

What cannot be achieved by ensuring that the different modes of presentation can be effectively converted into each other?

**Question 3**

What is the abstract choice typically assumed in most complexity theorems?

**Question 4**

What does not regularly use input coding as a concrete choice?

**Question 5**

What choice is typically left to depend on when trying to maintain a level of abstraction?

**Text number 47**

In 1967, Manuel Blum developed axiomatic complexity theory based on his axioms and proved an important result, the so-called acceleration theory. The real flowering of the field began in 1971, when US researcher Stephen Cook and Leonid Levin, working independently in the Soviet Union, showed that there are practically relevant problems that are NP-complete. In 1972, Richard Karp took this idea a step further with his groundbreaking paper 'Reducibility Among Combinatorial Problems', in which he showed that 21 different combinatorial and graph-theoretic problems, each notorious for its computational intractability, are NP-complete.

**Question 0**

Who is responsible for axiomatic complexity theory?

**Question 1**

To which theorem do Manuel Blum's axioms refer?

**Question 2**

What is the article written by Richard Karp in 1972 that started a new era in understanding intractable and NP-complete problems?

**Question 3**

How many combinatorial and graph-theoretic problems, previously thought to be intractable, did Karp's article address?

**Question 4**

Who developed the axiomatic complexity theory based on his axioms in 1974?

**Question 5**

Who is responsible for the so-called acceleration theorem of 1974?

**Question 6**

Who showed that there are practical problems that are NP-complete in 1961?

**Question 7**

Who wrote the article "Reducibility among combinatorial problems" in 1974?

**Question 8**

Which book presented 25 different comminator and graph theoretic problems, each famous for its computational intractability?

**Document number 444**

**Text number 0**

Southern California, often abbreviated as SoCal, is a geographic and cultural region that generally encompasses the 10 southernmost counties of California. Traditionally, the region has been described as "eight counties" based on demographics and economic ties: Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego, Santa Barbara and Ventura. A broader definition of 10 counties, including Kern and San Luis Obispo counties, is also used based on historical political divisions. Southern California is a major economic centre of the State of California and the United States.

**Question 0**

What is the abbreviation for Southern California?

**Question 1**

Although traditionally there is talk of "eight counties", how many counties are there in the region?

**Question 2**

What is the importance of Southern California for California and the United States?

**Question 3**

Which ties best describe what the "eight provinces" are based on?

**Question 4**

What are the reasons for adding the two provinces?

**Question 5**

What does the broader definition of eight counties in SoCal include?

**Question 6**

Which two more provinces will make the ten provinces a SoCal province according to the traditional definition?

**Question 7**

Where is the centre of US economic activity?

**Text number 1**

The definitions of eight and ten counties are not used in the Southern California metropolitan area, which is one of eleven mega-regions in the United States. The megaregion is broader, extending east to Las Vegas, Nevada, and south across the Mexican border to Tijuana.

**Question 0**

What is the name of the region that is not defined by the eight or ten provinces?

**Question 1**

How many mega-regions are there in the United States?

**Question 2**

What is the name of the state to which the mega-region extends in the east?

**Question 3**

Which border does the mega-region cross?

**Question 4**

What is the name of the area beyond the border where the mega-area extends?

**Question 5**

What is one of the 10 mega-regions in the United States?

**Question 6**

Where does the 8-county metropolitan area extend?

**Question 7**

What makes Las Vegas one of the most popular cities in the US?

**Text number 2**

Southern California comprises a heavily built-up urban area stretching along the Pacific coast from Ventura through the Los Angeles metropolitan area and the Inland Empire to San Diego. The population of Southern California comprises seven metropolitan areas: the Los Angeles metropolitan area, consisting of Los Angeles and Orange counties; the Inland Empire, consisting of Riverside and San Bernardino counties; the San Diego metropolitan area; the Oxnard-Thousand Oaks-Ventura metropolitan area; the Santa Barbara metropolitan area; the San Luis Obispo metropolitan area; and the El Centro area. Three of these are densely populated areas: the Los Angeles area, with more than 12 million inhabitants; the Riverside-San Bernardino area, with more than 4 million inhabitants; and the San Diego area, with more than 3 million inhabitants. For CSA metropolitan purposes, the five counties of Los Angeles, Orange, Riverside, San Bernardino and Ventura together form the Greater Los Angeles area, home to more than 17.5 million people. Southern California is home to more than 22 million people, making it home to about 60% of California's population.

**Question 0**

Which coastline does Southern California touch?

**Question 1**

How many metropolitan areas does the population of Southern California cover?

**Question 2**

How many people live in the Los Angeles area?

**Question 3**

Which of the three densely populated areas has the lowest population density?

**Question 4**

How many people are there in the Greater Los Angeles area?

**Question 5**

What percentage of California's 22 million people live in Southern California?

**Question 6**

What does MAS stand for?

**Question 7**

How many people live in Riverside?

**Question 8**

What does CSA mean?

**Text number 3**

To the east is the Colorado Desert and the Colorado River on the Arizona border and the Mojave Desert on the Nevada state line. To the south is the border with Mexico and the United States.

**Question 0**

What is the name of the body of water on the eastern side?

**Question 1**

What is the name of the desert on the Arizona border?

**Question 2**

What is the name of the desert near the Nevada border?

**Question 3**

What is the name of the southern border?

**Question 4**

Which desert is in the south near Arizona?

**Question 5**

Which desert is in the south near Nevada?

**Question 6**

Which way is the border between Colorado and Mexico?

**Text number 4**

Southern California has two major cities, Los Angeles and San Diego, and three of the country's largest metropolitan areas. Los Angeles is the most populous city in California with 3 792 621 inhabitants and the second most populous city in the United States. San Diego, to the south, is the second most populous city in the state and the eighth most populous in the country, with 1 307 402 inhabitants.

**Question 0**

Which state do the cities of Los Angeles and San Diego belong to?

**Question 1**

What is the population of Los Angeles?

**Question 2**

Which city is the most populous in California?

**Question 3**

What is the eighth most populous city in the country?

**Question 4**

Which direction from Los Angeles is San Diego?

**Question 5**

Which two of the three major cities are located in Southern California?

**Question 6**

Which city has a population of 3 792 261?

**Question 7**

Which city has a population of 1 307 204?

**Question 8**

Which is the second most populous city north of Los Angeles?

**Text number 5**

Los Angeles, Orange, San Diego, San Bernardino and Riverside counties are the five most populous counties in the state, and are all among the 15 most populous counties in the US.

**Question 0**

Orange, San Diego, Riverside and San Bernardino make up four of the five counties. What is the name of the last county?

**Question 1**

In which country are all the provinces located?

**Question 2**

What are Los Angeles, Orange, San Diego, San Bernardino and Riverside?

**Question 3**

What is the lowest ranking that a county could receive among the most populous counties in the United States?

**Question 4**

What is the smallest geographical area to be covered?

**Question 5**

What are the five most populous counties in the US?

**Question 6**

How many populous counties are there in the United States?

**Question 7**

In which county are Los Angeles, Orange, San Diego, San Bernardino and Riverside located?

**Text number 6**

The film, television and music industries are concentrated in Los Angeles, Southern California. Hollywood, a district of Los Angeles, is also a name associated with the film industry. Southern California is home to The Walt Disney Company (which also owns ABC), Sony Pictures, Universal, MGM, Paramount Pictures, 20th Century Fox and Warner Brothers. Universal, Warner Brothers and Sony also run major record labels.

**Question 0**

What is the name of a district related to the film industry?

**Question 1**

What city is the Hollywood district in?

**Question 2**

Which company owns ABC?

**Question 3**

What other major industry is concentrated in Los Angeles other than the film and television industry?

**Question 4**

What other company than Universal and Warner Brothers runs a major record company?

**Question 5**

Which company owns ACB?

**Question 6**

Which three industries are concentrated in Hollywood?

**Question 7**

Where is Los Angeles a district?

**Question 8**

Which major companies are headquartered in Los Angeles?

**Text number 7**

Southern California also has a large indigenous surfing and skateboarding culture. Companies like Volcom, Quiksilver, No Fear, RVCA and Body Glove have their headquarters here. Southern California is home to professional skateboarder Tony Hawk, professional surfers Rob Machado, Tim Curran, Bobby Martinez, Pat O'Connell, Dane Reynolds and Chris Ward, and professional snowboarder Shaun White. Southern California is also home to some of the world's most legendary surf spots, including Trestles, Rincon, The Wedge, Huntington Beach and Malibu, and is second only to Oahu in the number of famous surf spots. Some of the world's biggest extreme sports events, such as the X Games, Boost Mobile Pro and the U.S. Open of Surfing, are all in Southern California. Southern California is also important in the sailing world. The annual Transpacific Yacht Race from Los Angeles to Hawaii is one of the most important events in sailing. The San Diego Yacht Club organised the America's Cup, sailing's most prestigious prize, from 1988 to 1995, and hosted three America's Cup races during that period.

**Question 0**

What other culture is there in Southern California besides surfing?

**Question 1**

What is the name of a professional skateboarder living in Southern California?

**Question 2**

Which famous snowbaorder lives in Southern California?

**Question 3**

Which island in Southern California has the second highest number of famous serpentine breaks?

**Question 4**

What is the abbreviated name of the annual sailing competition?

**Question 5**

Where are the headquarters of No Fear and RCVA?

**Question 6**

Who are Rob Curran and Tim Machado?

**Question 7**

Where does professional surfer Tony Hawk live?

**Question 8**

Which famous surf spots are Oahu's number two?

**Question 9**

What took place at the San Diego Yacht Club between 1985 and 1998?

**Text number 8**

Many locals and tourists visit the Southern California coast for its popular beaches, and the desert town of Palm Springs is a popular holiday destination for its atmosphere and nearby open spaces.

**Question 0**

What is the name of a desert city?

**Question 1**

Why do so many locals and tourists visit Southern California, apart from the desert town?

**Question 2**

In which region of California is Palm Springs located?

**Question 3**

What else is Palm Springs popular for other than its resort atmosphere?

**Question 4**

Who visits Palm Springs for the beaches?

**Question 5**

Why is the Southern California desert popular?

**Question 6**

On which coast is the desert?

**Text number 9**

"Southern California" is not an official geographical designation, and definitions of Southern California vary. Geographically, the north-south center of California lies exactly at 37° 9' 58.23" latitude, about 18 km south of San Jose; however, this does not correspond to the common usage of the term. When the state is divided into two regions (Northern and Southern California), the term "Southern California" usually refers to the ten southernmost counties of the state. This definition fits well with the county boundaries at 35° 47′ 28″ N, which are the northern boundaries of San Luis Obispo, Kern and San Bernardino counties. Another definition of Southern California uses Point Conception and the Tehachapi Mountains as the northern boundary.

**Question 0**

Where is the north-south centre of California, geographically speaking?

**Question 1**

How many kilometres south of San Jose is the halfway point between north and south?

**Question 2**

The term "southern" California usually refers to how many of the state's southernmost counties?

**Question 3**

What landmark other than Point Conception is used to define Southern California?

**Question 4**

Point Conception is an example of a landmark that falls within which border of Southern California?

**Question 5**

What is located at latitude 37° 8' 59.23"?

**Question 6**

What is about 18 miles south of San Jose?

**Question 7**

What is located at 35° 48′ 27″ north latitude?

**Question 8**

What uses the northern boundary of Tehachapi Point and Conception Mountains?

**Text number 10**

Although the northern border of Southern California is not officially defined, such a division has existed since Mexico ruled California, and political disputes raged between Monterey Californians in the upper part and Los Angeles Californians in the lower part of Alta California. After the United States gained control of California, the division continued as part of an attempt by several pro-slavery politicians to arrange the division of Alta California at 36 degrees and 30 minutes, which was the Missouri Compromise line. Instead, the adoption of the Compromise of 1850 allowed California to join the Union as a free state, preventing Southern California from becoming its own separate slave state.

**Question 0**

Which country ruled before California?

**Question 1**

Los Angeles is in the lower part of what region?

**Question 2**

Which Californio is located at the top?

**Question 3**

What was the name of the legislation passed in 1850?

**Question 4**

The legislation allowed California to join the Union as which state?

**Question 5**

What country did California once rule?

**Question 6**

Who was at odds when California ruled Mexico?

**Question 7**

Which line is 30 degrees, 36 minutes?

**Question 8**

What was adopted in 1805?

**Text number 11**

Later, Californians (unhappy with unequal taxes and land-use laws) and pro-slavery southerners from the lightly populated "cow counties" of southern California tried three times in the 1850s to gain separate state or territorial status for northern California. The last attempt, the Pico Act of 1859, was passed by the California state legislature and signed by state governor John B. Weller. It was overwhelmingly approved by nearly 75 percent of the voters of the proposed Colorado Territory. This territory was to include all counties up to the then much larger Tulare County (which included present-day Kings, most of Kern and part of Inyo counties) and San Luis Obispo County. The proposal was sent to Washington, where Senator Milton Latham was a strong advocate. However, the secession crisis that followed Abraham Lincoln's election in 1860 meant that the proposal was never voted on.

**Question 0**

What else were Californians unhappy about other than land laws?

**Question 1**

What was the name given to the areas where pro-slavery Southerners lived?

**Question 2**

How many times did Southern California try to become a separate state?

**Question 3**

What percentage of people voted for the Pico Act of 1859?

**Question 4**

Which senator strongly supported the Pico Act?

**Question 5**

Who tried to create a separate state in 1805?

**Question 6**

What was adopted in 1895?

**Question 7**

Who was the Governor of California in 1895?

**Question 8**

Who was elected in 1859?

**Question 9**

What was Latham Milton's title?

**Text number 12**

In 1900, the Los Angeles Times defined Southern California as comprising "seven counties: Los Angeles, San Bernardino, Orange, Riverside, San Diego, Ventura and Santa Barbara". In 1999, the Times added a new county, Imperial, to the list.

**Question 0**

Which newspaper defined Southern California?

**Question 1**

What year did the newspaper define Southern California?

**Question 2**

In what year did the newspaper change its previous definition?

**Question 3**

What was the newer province that was added to the list?

**Question 4**

How many counties originally made up the definition of Southern California?

**Question 5**

How did the Los Angeles Times define Southern California in 1909?

**Question 6**

What did the Los Angeles Times add to the definition of Southern California in 1990?

**Question 7**

What did the California Times define twice?

**Text number 13**

Regional tourism groups most commonly divide the state into Northern, Central and Southern California regions. The state's two AAA automobile clubs, the California State Automobile Association and the Automobile Club of Southern California, prefer to simplify matters by dividing the state according to where their membership areas extend, either Northern or Southern California, as opposed to the three regions. Another influence is the geographic term South of the Tehachapis, which would divide the southern region along that transverse mountain ridge, but in this definition the desert areas of northern Los Angeles County and eastern Kern and San Bernardino Counties would be included in Southern California because of their distance from the central valley and interior desert landscape.

**Question 0**

Which organisations most often divide and promote the state?

**Question 1**

Other than the Automobile Club of Southern California, what other AAA Auto Club decided to simplify the division?

**Question 2**

Two AAA clubs split the state into Northern and Southern California, against what viewpoint?

**Question 3**

Which mountain range influenced the distribution of the regions?

**Question 4**

Which region would include the desert areas of northern Los Angeles County under a mountain definition?

**Question 5**

What kind of club is the California Automobile Association?

**Question 6**

What kind of club is the Southern California Car Club?

**Question 7**

What is the sentence north of Tehachapi?

**Question 8**

What types of groups divide California into just the northern and central parts?

**Text number 14**

Southern California has a highly developed urban environment, with some of the largest urban areas in the state, as well as large areas that have been left undeveloped. It is the third most populous megalopolis in the United States, after the Great Lakes Megalopolis and the Northeast Megalopolis. Much of Southern California is famous for its large, sprawling suburban communities and the use of cars and freeways. The dominant regions are Los Angeles, Orange County, San Diego and Riverside-San Bernardino, each the centre of a metropolitan area of numerous smaller cities and communities. The metropolitan area is also home to the San Diego-Tijuana International Metropolitan Area, which was created when the metropolitan area extended into Baja California.

**Question 0**

Where does the megalopolis of Southern California rank in terms of population in the country?

**Question 1**

Although Southern California is a heavily developed urban environment, how much of it is left undeveloped?

**Question 2**

Southern California communities are notoriously large, dispersed and what other characteristics do they have?

**Question 3**

What is Southern California famous for other than car use?

**Question 4**

What kind of area can you find in an urban area in Southern California?

**Question 5**

Which are the second and third most populous megalopolises after Southern California?

**Question 6**

What are the dominant areas in Los Angeles?

**Question 7**

What is the international metropolitan area in the north-eastern megalopolis?

**Text number 15**

Driving south on Interstate 5, Camp Pendleton is the main gap for continued urbanization. Cities and communities along Interstate 15 and Interstate 215 are so closely connected that Temecula and Murrieta have as much connection to the San Diego metropolitan area as they do to the Inland Empire. The U.S. Census Bureau considers San Bernardino and Riverside counties to the east, the Riverside-San Bernardino area as a separate metropolitan area from Los Angeles County. While many commute to Los Angeles and Orange counties, there are some differences in the level of development, as most of San Bernardino and Riverside counties (other than the desert parts) were built in the 1980s and 1990s. New developed suburban areas were formed in the Antelope Valley north of Los Angeles, Victor Valley and Coachella Valley with the Imperial Valley. Population growth was also strong in Bakersfield and Kern County, Santa Maria and San Luis Obispo.

**Question 0**

What is the main shortcoming of continued urbanisation?

**Question 1**

What area other than the San Diego metropolitan area are the communities along Interstates 15 and 215 associated with?

**Question 2**

Who considers Los Angeles County a separate metropolitan area?

**Question 3**

What other county do many people commute to other than Los Angeles?

**Question 4**

In what decade other than the 1980s did most of San Bernardino and Riverside counties develop?

**Question 5**

What was developed in 1980?

**Question 6**

To which counties do most people commute?

**Question 7**

What formed the Coachella Valley north of Orange County?

**Question 8**

Which counties near Kern-Bakersfield County had high population growth?

**Text number 16**

Southern California has a Mediterranean climate with little rain and lots of sunny days. Summers are hot and dry, while winters are slightly warm to mild and humid. Unusually, heavy rainfall can occur. Summer temperatures range from 90 to 60 degrees Celsius, while winter temperatures range from 70 to 50 degrees Celsius, with a Mediterranean climate generally prevailing throughout southern California. But snow is very rare in the southwestern part of the state, occurring in the southeastern part of the state.

**Question 0**

What is the climate like in Southern California?

**Question 1**

What else is typical of the Southern California climate but many sunny days?

**Question 2**

What is the lower limit of the temperature range in summer?

**Question 3**

How often does it snow in the southwestern part of the state?

**Question 4**

What is the upper limit of the temperature range in winter?

**Question 5**

What is the climate like in California?

**Question 6**

Where are summer temperatures in the 70s and 50s?

**Question 7**

Where do winter temperatures range between 90 and 60 degrees Celsius?

**Question 8**

What is rare in the south-east of the state?

**Text number 17**

Southern California has one of the most diverse geologic, topographic and ecosystem landscapes in the country, with greater diversity than other large regions of the state and country. The region ranges from the islands, coasts, beaches and coastal plains of the Pacific Ocean, through the Transverse and Peninsular Ranges and their peaks, to the large and small inland valleys and vast deserts of California.

**Question 0**

Which term best describes the Southern California landscape collection?

**Question 1**

From which islands in the water body does the area extend?

**Question 2**

What types of landscapes other than geological and natural ecosystem landscapes are found in Southern California?

**Question 3**

Which mountains other than the transverse mountains are located in this area?

**Question 4**

What is the geographical make-up of the mountains?

**Question 5**

What kind of collections are there in desert California?

**Question 6**

Where in the ocean are the transverse and peninsular mountain ranges?

**Question 7**

Where in the ocean are there large and small internal valleys?

**Question 8**

Which region has the most diversity in the country?

**Text number 18**

Around 10 000 earthquakes occur in Southern California every year. Almost all of them are so small that they are not felt. Only a few hundred are quakes of more than 3.0 magnitude, and only about 15 to 20 are quakes of more than 4.0 magnitude. The 6.7 magnitude Northridge earthquake of 1994 was particularly devastating, causing a significant number of deaths, injuries and structural collapses. It caused the greatest property damage in US history, estimated at over $20 billion.

**Question 0**

How many earthquakes occur in Southern California in a year?

**Question 1**

What is the general size of earthquakes in Southern California?

**Question 2**

What was the size of the 1994 Northridge earthquake?

**Question 3**

What was the most destructive earthquake in US history in 1994?

**Question 4**

How much was the 1994 earthquake estimated to have cost?

**Question 5**

What year was the Northridge earthquake that caused $20 million in damage?

**Question 6**

Which earthquake caused $20 million in damage?

**Question 7**

How many earthquakes occur in the state of California each year?

**Question 8**

How many earthquakes are larger than 4.7 magnitude?

**Text number 19**

Many faults are capable of causing an earthquake above 6.7 magnitude, such as the San Andreas faults, which can cause an 8.0 magnitude earthquake. Other zones include the San Jacinto Fault, Puente Hills Fault and Elsinore Fault Zone. The USGS has published the California Earthquake Forecast, which models the occurrence of earthquakes in California.

**Question 0**

What fault could cause an 8.0 magnitude earthquake?

**Question 1**

How many faults can cause an earthquake of what magnitude?

**Question 2**

In addition to the San Jacinto Fault and the Elsinore Fault, please mention one other fault.

**Question 3**

Which organisation published the California earthquake forecast?

**Question 4**

The earthquake forecast models, what are the characteristics of California earthquakes?

**Question 5**

What fault could cause an 8.7 magnitude event?

**Question 6**

What faults other than San Andreas can cause a magnitude 8.0 event?

**Question 7**

What did the UGSS publish?

**Question 8**

What does the UGSS California Earthquake Seismicity Model do?

**Text number 20**

Southern California is divided into culturally, politically and economically distinctive regions, each with its own culture and atmosphere, usually anchored by a city with both national and sometimes global recognition, often the centre of economic activity in its region and home to many tourist attractions. Each region is further divided into many culturally distinct areas, but as a whole they form the atmosphere of Southern California.

**Question 0**

The distinctive regions of Southern California are divided by culture, politics and what other characteristics?

**Question 1**

What other recognition do some cities receive in addition to national recognition?

**Question 2**

What is often the focus of action in cities, which are the anchors of the regions?

**Question 3**

What anchors the regions that are recognised globally?

**Question 4**

What are globally recognised anchor cities known for?

**Question 5**

How is California divided?

**Text number 21**

According to the 2010 US Census, the population of Southern California was 22 680 010. While Southern California is known for its high growth rates, it remained below the state average growth rate of 10.0% in the 2000s, as California's growth was concentrated in the northern part of the state thanks to the Bay Area's stronger technology-driven economy and the emerging Greater Sacramento region.

**Question 0**

According to which year's census, the population of Southern California was 22 680 010?

**Question 1**

What does Southern California have a reputation for?

**Question 2**

What is the average growth rate for the state?

**Question 3**

What kind of economy started to grow in Northern California in the 2000s?

**Question 4**

Which region started to grow and strengthen in the 2000s?

**Question 5**

According to which census, the population of Southern California was 26 860 010?

**Question 6**

How much did Southern California grow in 2000?

**Question 7**

Which economy took off in the Greater Bay Region?

**Question 8**

Which city is part of the Greater Bay Region?

**Text number 22**

Southern California consists of one Combined Statistical Area, eight Metropolitan Statistical Areas, one International Metropolitan Area and several metropolitan areas. There are two metropolitan areas with a population of more than five million. These are the Greater Los Angeles Area, with a population of 17,786,419, and San Diego-Tijuana, with a population of 5,105,768. Of these metropolitan areas, Los Angeles-Long Beach-Santa Ana, Riverside-San Bernardino-Ontario and Oxnard-Thousand Oaks-Ventura form the Greater Los Angeles metropolitan area, while the El Centro metropolitan area and the San Diego-Carlsbad-San Marcos metropolitan area form the southern border area. To the north of Greater Los Angeles are the Santa Barbara, San Luis Obispo and Bakersfield metropolitan areas.

**Question 0**

What is the name of the eight regions that make up part of Southern California?

**Question 1**

How many larger metropolitan areas are there?

**Question 2**

Which metropolitan areas have a population that exceeds that of each of the enlarged metropolitan areas?

**Question 3**

What are the El Centro metropolitan area and the San Diego-Carslbad-San Marcos metropolitan area?

**Question 4**

What is the population of the Los Angeles metropolitan area?

**Question 5**

What makes up a single metropolitan statistical area?

**Question 6**

What is made up of eight combined statistical domains?

**Question 7**

Which region has a population of 17 786 914?

**Question 8**

Which region has a population of 5 105 786?

**Question 9**

Which areas are located north of Greater Santa Barbara?

**Text number 23**

Los Angeles (3.7 million inhabitants) and San Diego (1.3 million inhabitants), both in Southern California, are the two largest cities in California (and two of the eight largest cities in the US). Southern California also has 12 cities with more than 200,000 inhabitants and 34 cities with more than 100,000 inhabitants. Many of the most developed cities in Southern California are located on or near the coast, with the exception of San Bernardino and Riverside.

**Question 0**

What is the largest city in California?

**Question 1**

What is the population of the second largest city in California?

**Question 2**

How many cities in Southern California have more than 200 000 inhabitants?

**Question 3**

There are 34 cities in Southern California with a population exceeding what number?

**Question 4**

What other developed city in Southern California than San Bernardino is not close to the coast?

**Question 5**

What are the two largest cities in the United States?

**Question 6**

Where are the 34 cities with more than 200 000 inhabitants?

**Question 7**

Where are the 12 cities with more than 100 000 inhabitants?

**Question 8**

Which city is home to 3.3 million people?

**Question 9**

Which city is home to 1.7 million people?

**Text number 24**

Southern California has a diverse economy and is one of the largest in the United States. It is heavily dependent on the abundance of oil and, unlike other areas where cars are not nearly as dominant, most transport is powered by this fuel. Southern California is famous for tourism and Hollywood (film, television and music). Other industries include software, automotive, ports, finance, tourism, biomedical and regional logistics. The region led the housing bubble between 2001 and 2007 and has been strongly affected by the housing crisis.

**Question 0**

What natural resource does the Southern California economy depend on?

**Question 1**

Southern California is best known for tourism and what region is it?

**Question 2**

For which event was the region a leader between 2001 and 2007?

**Question 3**

Southern California's economy can be described as one of the largest in the United States and what other characteristic?

**Question 4**

How did the collapse of the housing market affect the region?

**Question 5**

Who owns the biggest economy in the US?

**Question 6**

What happened between 2000 and 2017?

**Question 7**

What is the Southern California economy totally dependent on?

**Question 8**

Where is South Hollywood located?

**Text number 25**

Since the 1920s, the film, oil and aircraft industries have been major industries. In one of the richest agricultural regions of the United States, cattle and citrus were major industries until the farming areas were converted to suburbs. Although the reduction in military spending has had an impact, the aerospace industry remains a major player.

**Question 0**

The film, oil and aircraft industries have been major industries since what decade?

**Question 1**

Which feature best describes the agricultural areas that could be found?

**Question 2**

What kind of livestock was this agricultural area known for?

**Question 3**

Other than livestock farming, what was considered to be the main livelihood of agricultural areas?

**Question 4**

Which industry has survived the big cuts in military spending?

**Question 5**

What have been the main industries since 1902?

**Question 6**

What were the major industries until the suburbs were converted into farmland?

**Question 7**

What is a major factor even in the cuts in the aerospace industry?

**Question 8**

In what year were farmland areas turned into suburbs?

**Text number 26**

Southern California has many large business districts. Key business districts include Downtown Los Angeles, Downtown San Diego, Downtown San Bernardino, Downtown Bakersfield, South Coast Metro and Downtown Riverside.

**Question 0**

What kind of area is Southern California rich in?

**Question 1**

What is CBD?

**Question 2**

What is the only district in the CBD that does not have "downtown" in its name?

**Question 3**

What does CDB stand for?

**Question 4**

What does CDB contain?

**Question 5**

What is DCB?

**Text number 27**

The Los Angeles area is home to the main business districts of downtown Burbank, downtown Santa Monica, downtown Glendale and downtown Long Beach. Los Angeles itself has many business districts, including the Downtown Los Angeles business district and areas along the Wilshire Boulevard Miracle Mile, such as Century City, Westwood and Warner Center in the San Fernando Valley.

**Question 0**

Burbank city centre is an example of what kind of district?

**Question 1**

Downtown Santa Monica and Glendale are part of what area?

**Question 2**

In which area is the Warner Center located?

**Question 3**

Century City is an example of a district that belongs to which city?

**Question 4**

What are the business districts in downtown Los Angeles?

**Question 5**

What is the most important business district in downtown Los Angeles?

**Question 6**

What other business districts are there in downtown Los Angeles?

**Text number 28**

The San Bernardino-Riverside area includes the downtown San Bernardino, Hospitality Business/Financial Center and University Town business districts, located in San Bernardino and downtown Riverside.

**Question 0**

Sand Bernardino - The Riverside area is what type of area?

**Question 1**

In addition to San Bernardino, what is the name of the city that maintains the districts that include University Town?

**Question 2**

What is the name of another business district in the San Bernardino-Riverside area, in addition to downtown San Bernardino and University City?

**Question 3**

What are the commercial districts in the San Bernardino area?

**Question 4**

What are the business areas in the Riverside area?

**Text number 29**

Orange County is a fast-growing business hub that includes downtown Santa Ana, the South Coast Metro and Newport Center areas, as well as Irvine's business hubs The Irvine Spectrum, West Irvine and the international companies headquartered at the University of Irvine. West Irvine includes the Irvine Tech Center and Jamboree Business Parks.

**Question 0**

Which province is developing its business centre?

**Question 1**

Where are the headquarters of international companies located?

**Question 2**

Jamboree Business Parks is part of which business centre?

**Question 3**

What other business centers are there in Orange County outside of downtown Santa Ana and Newport Center?

**Question 4**

At what pace is Orange County developing its business centres?

**Question 5**

Which county is the rapidly developing downtown Santa Ana in?

**Question 6**

What are the neighbourhoods of downtown Santa Ana?

**Question 7**

Which campuses are located at the University of California, Irvine?

**Question 8**

What are Irvine Center Tech and Business Jamboree Parks?

**Text number 30**

Downtown San Diego is San Diego's central business district, even though the city is full of business districts. These include Carmel Valley, Del Mar Heights, Mission Valley, Rancho Bernardo, Sorrento Mesa and University City. Most of these neighborhoods are located in North San Diego and some in North County.

**Question 0**

What is San Diego's central business district?

**Question 1**

Outside of San Diego's central business district, where are most of San Diego's business districts located?

**Question 2**

Besides North San Diego, what other area has commercial districts?

**Question 3**

University City is an example of a business park located in which city?

**Question 4**

What is the central business district of downtown San Diego?

**Question 5**

Which are located in north central San Diego?

**Question 6**

What business districts are located in North Downtown San Diego?

**Text number 31**

Los Angeles International Airport, located in Southern California, is the second-busiest airport in the United States in terms of passenger numbers (see World's busiest airports by passenger volume) and the third-busiest airport by international passenger volume (see World's busiest airports by passenger volume). Busiest US airports by international passenger volume); San Diego International Airport, the world's busiest single-runway airport; Van Nuys Airport, the world's busiest general aviation airport; major commercial airports in Orange County, Bakersfield, Ontario, Burbank and Long Beach; and numerous smaller commercial and general aviation airports.

**Question 0**

What is the second busiest airport in the US?

**Question 1**

What is the measure of airport congestion?

**Question 2**

Where does Los Angeles International Airport rank among the busiest airports in terms of international passengers?

**Question 3**

Which airport has the busiest single runway in the world?

**Question 4**

What is the busiest general aviation airport in the world?

**Question 5**

What is the busiest airport in the US in terms of passenger numbers?

**Question 6**

What is the second busiest single-runway airport in the world?

**Question 7**

What is the second busiest general aviation airport?

**Question 8**

What are the major commercial airports in Los Angeles?

**Text number 32**

Six of the seven lines in the commuter rail system, Metrolink, will depart from downtown Los Angeles and connect Los Angeles, Ventura, San Bernardino, Riverside, Orange and San Diego counties, while another line will connect San Bernardino, Riverside and Orange counties directly.

**Question 0**

What is the name of the commuter rail system?

**Question 1**

How many lines are there in the commuter rail service?

**Question 2**

How many lines run from downtown Los Angeles?

**Question 3**

One line connects San Bernardino, Riverside and what other county?

**Question 4**

Where are the seven Metrolink lines from?

**Question 5**

What is the name of the Los Angeles rail system?

**Question 6**

Which counties are connected to Los Angeles, Ventura and San Bernardino by a single line?

**Text number 33**

Southern California is also home to the Port of Los Angeles, the busiest commercial port in the US, the neighbouring Port of Long Beach, the second busiest container port in the US, and the Port of San Diego.

**Question 0**

What is the busiest trading port in the US?

**Question 1**

What is the second busiest container port in the US?

**Question 2**

What region of California is the Port of Long Beach part of?

**Question 3**

What is a Southern California home?

**Question 4**

What is the busiest container port in the US?

**Question 5**

Where is the Port of San Diego bordered?

**Question 6**

What is the second busiest trading port in the US?

**Text number 34**

Tech Coast is the name that has come to describe the region's diverse technology and industrial base, as well as its many prestigious and world-renowned research universities and other public and private institutions. These include five University of California campuses (Irvine, Los Angeles, Riverside, Santa Barbara and San Diego) and 12 California State University campuses (Bakersfield, Channel Islands, Dominguez Hills, Fullerton, Los Angeles, Long Beach, Northridge, Pomona, San Bernardino, San Diego, San Marcos and San Luis Obispo); and private institutions such as California Institute of Technology, Chapman University, Claremont Colleges (Claremont McKenna College, Harvey Mudd College, Pitzer College, Pomona College and Scripps College), Loma Linda University, Loyola Marymount University, Occidental College, Pepperdine University, University of Redlands, University of San Diego and University of Southern California.

**Question 0**

What is the name given to the diverse technologies in the region?

**Question 1**

What universities are the region famous for?

**Question 2**

What kind of university is the California Institute of Technology?

**Question 3**

How many campuses does the University of California have?

**Question 4**

How many campuses does California State University have?

**Question 5**

What are the 5 campuses of the University of California?

**Question 6**

How many university campuses are there in California?

**Question 7**

How many California State University campuses are there?

**Question 8**

Where is Redland University located?

**Question 9**

Where is Pomona University located?

**Text number 35**

Professional sports teams in Southern California include the NFL (Los Angeles Rams, San Diego Chargers), NBA (Los Angeles Lakers, Los Angeles Clippers), MLB (Los Angeles Dodgers, Los Angeles Angels of Anaheim, San Diego Padres), NHL (Los Angeles Kings, Anaheim Ducks) and MLS (LA Galaxy).

**Question 0**

The Los Angeles Rams are an example of what kind of sports team?

**Question 1**

The Los Angeles Clippers is a team that belongs to which sport?

**Question 2**

The Los Angeles Angels of Anaheim is a team in which sport?

**Question 3**

What is the second NHL team besides the Anaheim Ducks that lives in Southern California?

**Question 4**

What is the only MLS team that belongs to Southern California?

**Question 5**

Which NLF teams are from Southern California?

**Question 6**

Which NAB teams are from Southern California?

**Question 7**

Which MBL teams are from Southern California?

**Question 8**

Which NLH teams are from Southern California?

**Question 9**

Which MSL team is from Southern California?

**Text number 36**

From 2005 to 2014, Los Angeles had two Major League Soccer teams - LA Galaxy and Chivas USA - both playing at the StubHub Center and both local rivals. However, Chivas was suspended after the 2014 MLS season, and another MLS team is scheduled to return in 2018.

**Question 0**

Which team was suspended from MLS?

**Question 1**

How many teams did Los Angeles used to have?

**Question 2**

Which year led to the suspension of another football team?

**Question 3**

What was the name of the stadium where the teams played?

**Question 4**

When is the suspended team due to return?

**Question 5**

How many Major Soccer League teams were in Los Angeles between 2005 and 2014?

**Question 6**

Which Major Soccer League teams played in Los Angeles in 2014?

**Question 7**

When was the LA Galaxy suspended?

**Question 8**

When is the second MSL team due back?

**Text number 37**

University sports are also popular in Southern California. The UCLA Bruins and USC Trojans both play in NCAA Division I in the Pac-12 conference, and there is a long-standing rivalry between the schools.

**Question 0**

What other sport is popular in Southern California?

**Question 1**

Which university does the Bruins belong to?

**Question 2**

What is the name of the USC team?

**Question 3**

Which conference do the Southern California teams play in?

**Question 4**

The two teams listed play in which NCAA group?

**Question 5**

What is the ULCA mascot?

**Question 6**

What is the UCS mascot?

**Question 7**

Which conference do the ULCA and UCS belong to?

**Text number 38**

Rugby is also a growing sport in Southern California, especially at the high school level, and more and more schools are adding rugby as an official school sport.

**Question 0**

What is the growing sport in Southern California?

**Question 1**

At what level of education is this sport becoming more common?

**Question 2**

What is rugby fast becoming in high schools?

**Question 3**

Which sport is growing in all California schools?

**Document number 445**

**Text number 0**

BSkyB was created in November 1990 through a joint merger of Sky Television and British Satellite Broadcasting and became the UK's largest digital pay-TV operator. Following the acquisition of Sky Italia in 2014 and a 90.04% majority stake in Sky Deutschland in November 2014, BSkyB's holding company British Sky Broadcasting Group plc changed its name to Sky plc. The UK operations also changed its name from British Sky Broadcasting Limited to Sky UK Limited, which continues to operate as Sky.

**Question 0**

Which company was created as a result of the merger between Sky Television and British Satellite Broadcasting?

**Question 1**

Who is the UK's biggest digital TV on demand operator?

**Question 2**

What year did BSkyB buy Sky Italia?

**Question 3**

What is the name of the BSkyB holding company?

**Question 4**

What is the name of BSkyB's UK operation?

**Question 5**

Which company was angry about the merger between Sky Television and British Satellite Broadcasting?

**Question 6**

Who is the UK's smallest digital on-demand TV company?

**Question 7**

In what year BSkyB removed Sky Italia?

**Question 8**

When did BSkyB become the largest US broadcaster?

**Question 9**

Which company is no longer trading as Sky?

**Text number 1**

BSkyB's monopoly ended from 2007-08 after a lengthy legal battle with the European Commission, which found that the exclusive rights were against competition and consumer interests. In May 2006, Irish broadcaster Setanta Sports was awarded two of the six Premier League packages offered to broadcasters by the English Football Association. Sky got the remaining four for £1.3 billion. In February 2015, Sky offered a £4.2 billion bid for a package of 120 Premier League matches over three seasons from 2016. This represented a 70% increase on the previous deal and was said to be £1 billion more than the company had expected to pay. The move has been followed by staff cuts, subscription price increases (including 9% for the Sky family package) and the removal of the 3D channel.

**Question 0**

In what year did Setanta Sports get the rights to broadcast Primeier League?

**Question 1**

How many of the six packages available to broadcasters did Setanta receive?

**Question 2**

Who bought the remaining 4 packages available to broadcasters?

**Question 3**

How much did Sky offer to get the 4 packages they bought?

**Question 4**

Which company fought a short legal battle with the European Commission?

**Question 5**

How many of the six packages available to broadcasters did Setanta distribute?

**Question 6**

How many packages did Sky lose?

**Question 7**

How much did Sky offer for the loss of 4 packages?

**Question 8**

What channel was never removed from Sky?

**Text number 2**

Although BSkyB was excluded from the ONdigital consortium, which made BSkyB a default competitor, BSkyB was able to join ITV Digital's free-to-air replacement Freeview, where it has an equal share with the BBC, ITV, Channel 4 and National Grid Wireless. Prior to October 2005, BSkyB's three channels were available on this platform: Sky News, Sky Three and Sky Sports News. Initially BSkyB offered a Sky Travel service. However, this was replaced on 31 October 2005 by Sky Three, which in turn was later renamed Pick TV in 2011.

**Question 0**

Which consortium was BSkyB excluded from?

**Question 1**

Who did BSkyB work with, as it was not part of the consortium?

**Question 2**

How many BSkyB channels were available to customers before October 2005?

**Question 3**

Which channel replaced Sky Travel?

**Question 4**

What was Sky Travel's subsequent new name?

**Question 5**

Which consortium was BSkyB part of?

**Question 6**

What was the later name of Pick TV?

**Question 7**

What was the channel before Sky Travel?

**Question 8**

Who did BSkyB work with as part of the consortium?

**Question 9**

What channel was never rebranded?

**Text number 3**

BSkyB initially charged additional fees for using Sky+ PVR on its service; it waived the fee for subscribers whose package included at least two premium channels. This changed from 1 July 2007, and now customers subscribing to Sky+ and any BSkyB subscription package will receive Sky+ at no extra charge. Customers who do not subscribe to BSkyB channels can still pay a monthly fee to access Sky+. In January 2010, BSkyB discontinued the Sky+ box, limited the standard Sky box to multi-room upgrades only and started selling the Sky+HD box as standard, giving all new subscribers Sky+ functionality. In February 2011, BSkyB discontinued the non-HD option of the Multiroom box and offered a smaller version of the SkyHD box without Sky+ functionality. In September 2007, Sky launched a new TV advertising campaign targeting Sky+ at women. As of 31 March 2008, Sky had 3 393 000 Sky+ users.

**Question 0**

For which service did BSkyB distribute additional subscription fees?

**Question 1**

When did Sky launch a TV advertising campaign for women?

**Question 2**

How can customers access Sky+ if they do not subscribe to BSkyB channels?

**Question 3**

When did BSkyB stop using Sky+ Box?

**Question 4**

What replaced Sky+Box?

**Question 5**

What service did BSkyB give you for free and unconditionally?

**Question 6**

When did Sky launch a TV advertising campaign for men?

**Question 7**

What is not required for customers to get Sky+ if they do not subscribe to BSkyB channels?

**Question 8**

When did BSkyB update the Sky+ Box?

**Question 9**

What replaced Sky+HD Box?

**Text number 4**

BSkyB uses the VideoGuard pay-TV system, owned by NDS, a Cisco Systems company. The use of VideoGuard decoders is strictly controlled; they are not available as stand-alone DVB CAM (conditional access module) modules. BSkyB has design authority over all digital satellite receivers capable of receiving its services. Although the receivers are designed and manufactured by different manufacturers, they must have the same look and feel as the interfaces of other receivers. This also applies to the personal video recorder (PVR) (Sky+).

**Question 0**

What is the name of the television encryption system used by BSkyB?

**Question 1**

Who owns VideoGuard?

**Question 2**

Who is the parent company of NDS?

**Question 3**

Who has design authority over all digital satellite receivers that are capable of using their services?

**Question 4**

What is the brand name of the personal video recorder offered by BSkyB?

**Question 5**

What is the name of the TV encryption system that BSkyB could not use?

**Question 6**

Whose digital receivers are made by only one manufacturer?

**Question 7**

What is available as a stand-alone DVB-CAM?

**Question 8**

Which company was never involved in the NDS?

**Question 9**

What is the brand name of the VCR that BSkyB never sold?

**Text number 5**

In 2007, BSkyB and Virgin Media got into a dispute over the carriage of Sky channels on cable TV. As the existing carriage agreements negotiated with NTL and Telewest were not renewed, Virgin Media removed the basic channels from its network on 1 March 2007. Virgin Media claimed that BSkyB had substantially increased the price it was asking for the channels. BSkyB contested this claim on the basis that the new contract offered "significantly more value" as it included HD channels and Video On Demand content not previously available on cable.

**Question 0**

What year did BSkyB and Virgin Media fight over the transfer of Sky channels on cable TV?

**Question 1**

Which channels were taken off the air in March 2007?

**Question 2**

What did Virgin Media claim BSkyB did that caused Virgin to no longer offer these channels?

**Question 3**

What other additional service did BSkyB offer, apart from HD channels, which it claimed offered "significantly more value"?

**Question 4**

What other additional service did BSkyB offer in addition to Video on Demand, which it claimed offered "significantly more value"?

**Question 5**

In what year did BSkyB and Virgin Media sign an agreement to carry Sky channels on cable TV?

**Question 6**

What channels were always available online?

**Question 7**

What other service did BSkyB offer apart from HD channels, which it claimed had no value?

**Question 8**

Which argument did BSkyB agree to?

**Question 9**

When did BSkyB introduce the basic channels?

**Text number 6**

In July 2013, the English High Court ruled that Microsoft's use of the term "SkyDrive" infringed Sky's right to the Sky trademark. On 31 July 2013, BSkyB and Microsoft announced an agreement whereby Microsoft would not appeal the judgment and would rename its SkyDrive cloud storage service after an unspecified "reasonable period of time to allow for an orderly transition to the new brand", along with "financial and other terms, the details of which are confidential". On 27 January 2014, Microsoft announced that "SkyDrive will soon become OneDrive" and "SkyDrive Pro" will become "OneDrive for Business".

**Question 0**

When did the English High Court rule that Microsoft's use of the term "SkyDrive" infringed Sky's right?

**Question 1**

What year did BSkyB and Microsoft announce their agreement?

**Question 2**

Why did Microsoft announce it was renaming Sky Drive?

**Question 3**

Why did Microsoft announce it was renaming Sky Drive Pro?

**Question 4**

What kind of service is SkyDrive?

**Question 5**

When did the English High Court of Justice rule that Microsoft's use of the term "SkyDrive" did not infringe Sky's right to the "Sky" trademark?

**Question 6**

When did Microsoft decide to appeal the decision?

**Question 7**

Why did Microsoft announce it was renaming OneDrive?

**Question 8**

Why did Microsoft announce it was renaming OneDrive for Business?

**Question 9**

When did Microsoft announce that OneDrive will soon become SkyDrive?

**Text number 7**

The service was launched on 1 September 1993 by the then CEO Sam Chisholm and Rupert Murdoch with the idea of changing the company's business strategy to a fully paid-for service. The new package included four previously free-to-air channels broadcast on Astra satellites, plus new channels. The service continued until the closure of BSkyB's analogue service on 27 September 2001 due to the launch and expansion of the Sky Digital platform. Some channels were broadcast either clear or soft encrypted (requiring a Videocrypt decryptor without a subscription card to decrypt) before being added to the Sky Multichannels package. Within two months of launch, BSkyB had acquired 400 000 new subscribers, most of whom also subscribed to at least one premium channel, enabling BSkyB to reach 3,5 million households by mid-1994. Michael Grade criticised the action before the Select Committee on National Heritage, mainly because many of the new channels did not have original programming.

**Question 0**

Who was the CEO at the start of the service?

**Question 1**

Whose satellites will broadcast the new free-to-air channels?

**Question 2**

When did BSkyB end its analogue services?

**Question 3**

What platform prompted BSkyB to end its analogue service?

**Question 4**

How many households had a BSkyB service in 1994?

**Question 5**

What platform helped BSkyB to avoid the closure of its analogue service?

**Question 6**

Whose satellites were never broadcast as free-to-air?

**Question 7**

How many subscribers did BSkyB lose within two months of launch?

**Question 8**

Who praised the action before the Special Committee on National Cultural Heritage?

**Question 9**

Which company never expanded its platform?

**Text number 8**

Sky UK Limited (formerly British Sky Broadcasting or BSkyB) is a British telecommunications company based in the United Kingdom. Sky provides television, broadband internet and fixed-line telephone services to consumers and businesses in the UK. It is the UK's largest pay-TV operator, with 11 million customers in 2015. It was the UK's most popular digital TV service until Freeview overtook it in April 2007. It is headquartered in Isleworth.

**Question 0**

What was Sky UK Limited previously known as?

**Question 1**

What kind of company is Sky UK Limited?

**Question 2**

How many customers does Sky UK Limited have as a pay-TV operator in 2015?

**Question 3**

which other digital TV service took the top spot from Sky UK Limited?

**Question 4**

What is Sky UK Limited now known as?

**Question 5**

What has Sky UK Limited never participated in?

**Question 6**

How many customers did Sky UK Limited lose as a pay-TV broadcaster in 2015?

**Question 7**

What was the least popular TV service in the UK in 2015?

**Question 8**

Where was the headquarters moved from?

**Text number 9**

On 18 November 2015, Sky announced Sky Q, a range of products and services available in 2016. Sky Q consists of three set-top boxes (Sky Q, Sky Q Silver and Sky Q Mini), a broadband router (Sky Q Hub) and mobile applications. The Sky Q set-top boxes bring with them a new user interface, Wi-Fi hotspot functionality, Power-line and Bluetooth connectivity and a new touch-sensitive remote control. Sky Q Mini TV stations connect to Sky Q Silver TV stations via Wi-Fi or Power-line instead of receiving their own satellite signals. This allows all set-top boxes in the household to share recordings and other media. The Sky Q Silver set-top box will be able to receive and display UHD broadcasts, which Sky will introduce later in 2016.

**Question 0**

What is the name of the Sky Q broadband router?

**Question 1**

Which Sky Q mini adaptors can I connect to?

**Question 2**

What is possible by combining different Sky Q boxes?

**Question 3**

When will Sky introduce UHD broadcasting?

**Question 4**

When will the new Sky Q products be available?

**Question 5**

What is the name of the Sky Q dial-up router?

**Question 6**

Which Sky Q mini set-top boxes can never connect?

**Question 7**

What does the separation of the different Sky Q boxes allow?

**Question 8**

Which set-top box can no longer show UHD broadcasts?

**Text number 10**

BSkyB's standard definition broadcasts are DVB-compatible in MPEG-2, and Sky Movies and Sky Box Office channels have optional Dolby Digital audio tracks for recent films, although they are only available on Sky+. Sky+ HD material is broadcast in MPEG-4, and most HD material is DVB-S2. Interactive services and the 7-day EPG use a proprietary OpenTV system, and set-top boxes have a modem for the return path. Sky News offers, among other channels, an interactive pseudo-video service by broadcasting looped video streams.

**Question 0**

What are the BSkyB standard definition broadcasts?

**Question 1**

Sky Movies and Sky Box office also include what optional audio tracks?

**Question 2**

What does Sky+ HD broadcast use?

**Question 3**

What is the proprietary system used by Sky+HD?

**Question 4**

What is the standard used for most HD material?

**Question 5**

Which box is needed to watch MPEG-3?

**Question 6**

What is the proprietary system that Sky+HD cannot use?

**Question 7**

Which channel has never used looping video streams?

**Question 8**

Which audio tracks are mandatory on Sky Movies and Sky Box Office?

**Text number 11**

When Sky Digital was launched in 1998, the new service used the Astra 2A satellite, located at 28.5° East longitude, unlike the analogue service which was broadcast at 19.2° East longitude. This was followed by more Astra satellites and Eutelsat's Eurobird 1 (now Eutelsat 33C) at 28.5° East), which enabled the company to launch a new fully digital Sky service capable of transmitting hundreds of television and radio channels. The old station was shared with broadcasters in several European countries, while the new 28.5° E station was used almost exclusively for channels broadcast to the United Kingdom.

**Question 0**

When was Sky Digital launched?

**Question 1**

What satellite was used when Sky digital was launched?

**Question 2**

Which satellite enabled Sky Digital to launch a completely new digital service?

**Question 3**

How many TV and radio channels could the new digital service offer?

**Question 4**

What is the location of the satellite that allowed Sky to broadcast channels to the UK with near-coverage?

**Question 5**

Which service used Astra 2A in 1995?

**Question 6**

What satellite prevented Sky Digital from launching a completely new digital service?

**Question 7**

How many TV and radio channels did the digital service get rid of?

**Question 8**

When was the only satellite launched?

**Text number 12**

BSkyB launched its HDTV service Sky+ HD on 22 May 2006. BSkyB claimed that 40 000 people had signed up to receive the HD service before its launch. In the week leading up to the launch, rumours began to circulate that BSkyB was experiencing supply problems with the manufacturer's Thomson set-top box. On Thursday 18 May 2006 and throughout the weekend before the launch, people reported that BSkyB had either cancelled or postponed the installation. Finally, the BBC reported that 17,000 customers had not yet received service because of failed deliveries. On 31 March 2012, Sky announced that the total number of homes with Sky+HD was 4 222 000.

**Question 0**

When did BSkyB launch its HDTV service?

**Question 1**

How many people had registered to receive the HD service before the launch?

**Question 2**

What was the name of the set-top box manufacturer that BSkyB had problems with?

**Question 3**

How many customers, according to the BBC, had not yet received a service because deliveries had failed?

**Question 4**

What was the total number of homes where Sky announced Sky+HD in March 2012?

**Question 5**

When did BSkyB fail to launch its HDTV service?

**Question 6**

Which manufacturer has never had a delivery problem when dealing with BSkyB?

**Question 7**

How many people never signed up to receive HD before the service started?

**Question 8**

Who reported that 17,000 customers received service because of failed deliveries?

**Question 9**

When did Sky announce that the total number of homes with Sky+HD was 3 222 000?

**Text number 13**

On 8 February 2007, BSkyB announced its intention to replace its three free-to-air digital terrestrial channels with four subscription channels. Under the proposal, these channels would offer BSkyB's range of content, including sport (including the English Premier League), films, entertainment and news. The announcement came a day after Setanta Sports confirmed it would launch a digital terrestrial network subscription service in March, and on the same day that NTL's services were rebranded as Virgin Media. However, industry sources believe BSkyB will be forced to shelve its plans to pull its channels from the Freeview network service and replace them with subscription channels due to potential lost advertising revenue.

**Question 0**

When did BSkyB announce its intention to replace its free-to-air digital channels?

**Question 1**

When did Setanta Sports say it would launch a subscription service?

**Question 2**

What platform was Sentanta Sports planning to launch on?

**Question 3**

Under what name were NTL's services rebranded?

**Question 4**

What is BSkyB's sports offer?

**Question 5**

When did BSkyB announce its intention to improve its free-to-air digital channels?

**Question 6**

When did Setanta Sports say it would launch a free service on the terrestrial digital system?

**Question 7**

On which platform did Sentanta Sports plan to avoid launching?

**Question 8**

What was the new name of Virgin Media?

**Question 9**

Which channel lost advertising revenue because of its plans?

**Text number 14**

A universal Ku-band LNB (9.75/10.600 GHz) is supplied, which mounts on the end of the dish antenna and is aimed at the correct satellite group; most digital receivers receive free-to-air channels. Some broadcasts are free-to-air and unencrypted, some are encrypted but do not require a monthly subscription (free-to-view), some are encrypted and require a monthly subscription and some are paid services. To view encrypted content you must use a VideoGuard UK-equipped receiver (all receivers are for Sky and cannot be used to decrypt other services). Unofficial CAM cards are now available for viewing the service, but their use is in breach of the agreement between you and Sky and will invalidate your rights to use the card.

**Question 0**

What are freely receivable encrypted transmissions?

**Question 1**

What is required to watch some encrypted broadcasts?

**Question 2**

What does a receiver need to have in order to watch encrypted content?

**Question 3**

On which universal bandwidth do digital receivers receive free-to-air channels?

**Question 4**

What service is a receiver equipped with VideoGuard UK for decryption?

**Question 5**

What does encrypted broadcasting never require?

**Question 6**

What does a receiver need to be able to watch unencrypted content?

**Question 7**

What is the local band on which digital receivers receive channels?

**Question 8**

What service will a receiver equipped with VideoGuard UK never be able to decrypt?

**Question 9**

Which band is installed in the middle of the satellite dish?

**Text number 15**

In the autumn of 1991, negotiations were held for the broadcasting rights to the Premier League for five years, starting in 1992. ITV was the current rights holder and fought hard to retain the new rights. ITV had increased its bid from £18 million to £34 million a year to retain the rights. BSkyB joined forces with the BBC to make a counter offer. The BBC was given the highlights of most matches, while BSkyB paid £304 million for the Premier League rights, which would give it a monopoly on all live matches, up to 60 a year from 1992. Murdoch described the sport as a "punching bag" for pay-TV, providing a strong customer base. A few weeks after the deal was struck, ITV applied to the High Court for an injunction, believing that its bid details had been leaked before the decision was made. ITV also asked the Office of Fair Trading to investigate the case because it believed that Rupert Murdoch's media empire, through its newspapers, had influenced the deal. A few days later, neither action was successful, as ITV believed BSkyB had been called and informed of its £262 million offer, and the Premier League urged BSkyB to increase its counter-offer.

**Question 0**

When were the negotiations for the Braodcast right to the Primier League for five years from 1992?

**Question 1**

Who were the current rights holders of the Primer League?

**Question 2**

How much did ITV increase its annual bid for the management of the Primer League broadcasting rights?

**Question 3**

Who were given the highlights of most matches?

**Question 4**

How much was BSkyB going to pay for the rights to broadcast the Primier League?

**Question 5**

What company was not concerned about preserving new rights?

**Question 6**

How much did BSkyB pay to give up the Premier League rights?

**Question 7**

Who has never seen the highlights of most matches?

**Question 8**

Who were never holders of the Premier League rights?

**Text number 16**

BSkyB does not have a veto over the presence of channels in the EPG, as open access is part of the licence granted by Ofcom. All channels capable of carrying a suitable satellite beam at 28° East latitude are entitled to access BSkyB's EPG for a fee of between £15,000 and £100,000. Third party channels that opt for encryption will receive discounts on reduced prices for free EPG entries, free carriage on BSkyB's leased transponder or payment for carriage. However, BSkyB still has no control over channel content or carriage issues such as picture quality.

**Question 0**

Who does BSkyB have a licence from?

**Question 1**

What is the range of fees for using the BSkyB EPG?

**Question 2**

Can BSkyB ban channels from appearing in the EPG?

**Question 3**

Does BSkyB have any control over the content of the channels?

**Question 4**

Does BSkyB have any control over the picture quality of the channel?

**Question 5**

Who took away BSkyB's licence?

**Question 6**

Which company has a veto on the appearance of channels in the EPG?

**Question 7**

What BSkyB can deny the presence of channels?

**Question 8**

Which service does not require a fee to use?

**Text number 17**

BSkyB's digital service was officially launched on 1 October 1998 under the name Sky Digital, although small-scale trials were carried out before then. At that time, the use of the Sky Digital brand made an important distinction between the new service and Sky's analogue services. Key selling points included improved picture and sound quality, an increased number of channels and an interactive service known as Open...., now called Sky Active. BSkyB competed with terrestrial ONdigital (later ITV Digital) and cable services. Within 30 days, over 100,000 set-top boxes had been sold, supporting BSkyB's decision to distribute set-top boxes and mini-dish sets free of charge from May 1999.

**Question 0**

When was the BSkyB digital service launched?

**Question 1**

What was the name of the BSkyB digital service?

**Question 2**

What name did BSkyB give to its interactive service?

**Question 3**

Who was BSkyB originally competing with?

**Question 4**

How many set-top boxes were sold in 30 days?

**Question 5**

When was the BSkyB digital service unofficially launched?

**Question 6**

Which company supported BSkyB the most?

**Question 7**

How many set-top boxes were disposed of within 30 days?

**Question 8**

When did BSkyB decide to stop distributing free set-top boxes?

**Text number 18**

Virgin Media (which was renamed NTL:Telewest in 2007) began offering a set-top box supporting high definition television (HDTV), although from 30 November 2006 to 30 July 2009 it offered only one linear HD channel, BBC HD, following the end of the ITV HD trial. Virgin Media has argued that the other HD channels were "locked" or otherwise excluded from its system, although Virgin Media had the option to broadcast Channel 4 HD in the future. Nevertheless, no linear channels were offered and Virgin Media focused on its Video On Demand service, which offered a modest selection of HD content. However, Virgin Media has made several statements over the years that more linear HD channels are on the way.

**Question 0**

When did Virgin Media change its name from NTL Telewest?

**Question 1**

why NTL Telewest was renamed in 2007?

**Question 2**

What did Virgin Media focus on instead of offering linear channels?

**Question 3**

Which linear HD channels did Virgin Media broadcast from November 2006 to July 2009?

**Question 4**

what was the name of the second HD channel that Virgin media could broadcast in the future?

**Question 5**

When was NTL Telewest converted from Virgin Media?

**Question 6**

What did Virgin Media overlook when offering linear channels?

**Question 7**

What was the one linear SD channel that Virgin Media broadcast from November 2006 to July 2009?

**Question 8**

Which channel has never had an HD version?

**Text number 19**

BSkyB's direct-to-home satellite service became available to 10 million homes in 2010, and was the first pay-TV platform in Europe to reach this milestone. Confirming its achievement, the broadcaster said it reached 36% of UK households, representing an audience of over 25 million people. The target was first announced in August 2004 and since then BSkyB's streaming service has attracted 2.4 million new subscribers. Media commentators had been debating whether this figure could be achieved, given the slowdown in subscriber growth in the rest of Europe.

**Question 0**

How many homes had access to BSkyB's satellite broadcasting service in 2010?

**Question 1**

How big an audience did BSkyB say it would reach?

**Question 2**

When did BSkyB first announce its target?

**Question 3**

What was the target proportion of households that BSkyB wanted to reach?

**Question 4**

What happened to subscriber numbers in other European regions?

**Question 5**

How many homes did not have access to BSkyB's live satellite service in 2010?

**Question 6**

How small was the audience that BSkyB said it was not reaching?

**Question 7**

What percentage of households did BSkyB never reach?

**Question 8**

Which free-to-air TV system was the most popular in Europe at the time?

**Text number 20**

The Daily Mail newspaper reported in 2012 that the UK government's benefits agency checked claimants' "Sky TV bills to see whether a woman receiving single mother's benefits was falsely claiming to live alone" - because it said that subscribing to sports channels would reveal the presence of a man in the household. In December, the UK Parliament heard a claim that BSkyB subscriptions were "often harmful" along with alcohol, tobacco and gambling. Conservative MP Alec Shelbrooke proposed that benefits and tax credits be paid with a "Welfare Cash Card", which could only be used to buy "necessities" such as the Supplemental Nutrition Assistance Program.

**Question 0**

Where did Alec Shelbrooke propose to pay benefits?

**Question 1**

What could be bought with the supplementary food aid programme?

**Question 2**

What did the UK Parliament hear that BSkyB was ordering?

**Question 3**

What did the UK government review in 2012?

**Question 4**

What did the Benefit Office think the sports channels meant in the TV bill?

**Question 5**

Where did Alec Shelbrooke suggest that benefits should never be paid?

**Question 6**

What could a supplementary food aid scheme never sell?

**Question 7**

What did the UK Parliament decide that BSkyB's subscription is?

**Question 8**

What did the benefits agency think the TV bill for sports channels ignored?

**Question 9**

What did the UK government's benefits agency destroy in 2012?

**Text number 21**

The contracts include fixed annual channel fees of £30 million, and both channel providers can receive additional payments if their channels meet certain performance targets. It is not yet known whether the new deal will include the video on demand services and high definition content previously offered by BSkyB. As part of the agreements, both BSkyB and Virgin Media agreed to drop all High Court litigation against each other relating to the transmission of their respective basic channels.

**Question 0**

What were the annual transmission fees for the channels?

**Question 1**

Will the new contract include video on demand and high definition?

**Question 2**

Which company agreed to drop its lawsuit against BSkyB?

**Question 3**

Which company agreed to drop its lawsuit against Virgin Media?

**Question 4**

What was the case before the Supreme Court?

**Question 5**

What were the weekly transmission fees for the channels?

**Question 6**

Which company did not agree to drop its lawsuit with BSkyB?

**Question 7**

What was the case before the local court?

**Question 8**

Which companies never agreed to stop litigating against each other?

**Question 9**

Which company still offers Video On Demand and HD?

**Document number 446**

**Text number 0**

Victoria's economy is very diverse: service sectors such as financial and real estate services, health, education, wholesale, retail, accommodation and food services, and manufacturing account for the majority of employment. Victoria has the second largest GDP in Australia, although it ranks fourth in terms of GDP per capita due to its low mining activity. On the cultural front, Melbourne has a number of museums, art galleries and theatres, and is also known as 'Australia's sporting capital'. The Melbourne Cricket Ground is Australia's largest stadium and hosted the 1956 Summer Olympics and the 2006 Commonwealth Games. The ground is also considered the 'spiritual home' of Australian cricket and Australian football and hosts the Australian Football League (AFL) Grand Final each year, usually attended by over 95 000 people. Victoria has eight public universities, the oldest of which, the University of Melbourne, was founded in 1853.

**Question 0**

What is the economy like in Victoria?

**Question 1**

Where does Victoria rank in Australia in terms of Australian state gross domestic product?

**Question 2**

Where does GPS per capita rank Victoria?

**Question 3**

What city in Victoria is called the Australian capital of sport?

**Question 4**

What is the largest stadium in Australia?

**Question 5**

What kind of education does Victoria have?

**Question 6**

Where does Victoria rank in Australia in terms of net domestic product?

**Question 7**

What is the status of the GPS service in Victoria?

**Question 8**

What city in Victoria is called the Australian cricket ground?

**Question 9**

How many public universities are there in Melbourne?

**Text number 1**

Migrants arrived from all over the world in search of gold, especially from Ireland and China. Many Chinese miners worked in Victoria and their legacy is particularly strong in and around Bendigo. Although there was some racism against them, anti-Chinese violence did not occur to the extent of the Lambing Flat riots in New South Wales. There was, however, a riot in Buckland Valley near Bright in 1857. Conditions in the goldfields were cramped and unhygienic; in 1854, an outbreak of typhoid fever in Buckland Valley killed more than 1 000 miners.

**Question 0**

Where is the Asian influence strongest in Victoria?

**Question 1**

Where were the Lambing Flat riots?

**Question 2**

Where was the riot of 1857?

**Question 3**

How many miners died in the typhoid epidemic of 1854?

**Question 4**

What were conditions like for miners in Victoria's goldfields?

**Question 5**

Where are Asian gold miners strongest in Victoria?

**Question 6**

Where were the pro-China riots?

**Question 7**

Where was the gold rush of 1857?

**Question 8**

How many miners died in racist violence in 1854?

**Question 9**

What were conditions like for miners in Ireland and China?

**Text number 2**

In November 2006, elections to the Victorian State Legislative Council were held under a new multi-member proportional representation system. The State of Victoria was divided into eight constituencies, each constituency being represented by five representatives elected by single ballot. The total number of members of the House of Lords was reduced from 44 to 40, and their term of office is now the same as that of the House of Commons - four years. Victorian parliamentary elections are now fixed, and are held every four years in November. Prior to the 2006 elections, the Legislative Council consisted of 44 members elected for an eight-year term from 22 two-member constituencies.

**Question 0**

What is the system of representation in the Victorian Legislative Council?

**Question 1**

How many constituencies are there in Victoria?

**Question 2**

How many representatives does each electorate have?

**Question 3**

What is the term of office of each MEP?

**Question 4**

How often are Victorian general elections held?

**Question 5**

How many constituencies are there in the Legislative Council?

**Question 6**

How many representatives does each state have?

**Question 7**

How often do members of the House of Lords vote?

**Question 8**

In which month does the Victorian Parliament register voters?

**Text number 3**

The main political parties in Victoria are the centre-left Australian Labor Party (ALP), the centre-right Australian Liberal Party, the rural-based National Party of Australia and the environmentally friendly Australian Greens. The Labor Party has traditionally been strongest in the working class western and northern suburbs of Melbourne and the regional cities of Ballarat, Bendigo and Geelong. Liberal support is strongest in Melbourne's more affluent eastern and outer suburbs and some rural and regional centres. The National Party is strongest in the rural areas of Victoria's north-west and east. The Greens, who won their first House of Commons seats in 2014, are strongest in Melbourne's inner regions.

**Question 0**

Which political party is strongest in Melbourne's working class suburbs?

**Question 1**

Which party is strongest in Melbourne's affluent areas?

**Question 2**

Which party is strongest in Victoria's north-west and east?

**Question 3**

Which party controls Melbourne's inner-city areas?

**Question 4**

Which party is favoured in Bedigo and Geelong?

**Question 5**

Which political party is strongest in Melbourne's poorer regional areas?

**Question 6**

Which party is strongest in the Melbourne financial district?

**Question 7**

Which party is strongest in the Victorian House of Commons?

**Question 8**

Which party was founded in 2014?

**Question 9**

Which party is favoured in Northern and Southern Victoria?

**Text number 4**

Around 61.1% of Victorians consider themselves Christians. Roman Catholics are the largest single religious group in the state with 26.7% of Victoria's population, followed by Anglicans and members of the Uniting Church. Buddhism is the largest non-Christian religion in the state, with 168 637 members at the last census. Victoria is also home to 152 775 Muslims and 45 150 Jews. Hinduism is the fastest growing religion. About 20% of Victorians do not profess any religion. Among those who do declare a religious affiliation, church attendance is low.

**Question 0**

What percentage of Victorians are Christians?

**Question 1**

How many Victorians are Catholics?

**Question 2**

What is Victoria's largest non-Christian religion?

**Question 3**

How many Victorians are Buddhists?

**Question 4**

How many Victorians are irreligious?

**Question 5**

What percentage of Victorians are Christian scientists?

**Question 6**

How many Victorians live near a moneateria?

**Question 7**

Which religion do most of Victoria's lower class citizens belong to?

**Question 8**

How many Victorians have a Buddha statue?

**Question 9**

How many Victorians are Muslim?

**Text number 5**

Victoria (abbreviated Vic) is a state in south-eastern Australia. Victoria is Australia's most populous state and the second most populous state. Most of its population is concentrated around Port Phillip Bay, which includes the metropolitan area of the capital and largest city, Melbourne, Australia's second largest city. Geographically, Victoria is the smallest state on the Australian mainland, bordered by Bass Strait and Tasmania to the south,[note 1] New South Wales to the north, the Tasman Sea to the east and South Australia to the west.

**Question 0**

Where in Australia is Victoria located?

**Question 1**

How does Victoria rank in terms of population density?

**Question 2**

How populous is Victoria compared to other Australian states?

**Question 3**

Which city is Victoria's capital?

**Question 4**

What is the size of Melbourne compared to other Australian cities?

**Question 5**

Where is Bass Straighta Victoria located?

**Question 6**

How does Melbourne rank in terms of population?

**Question 7**

How crowded is Melbourne compared to other Australian states?

**Question 8**

Which city is the capital of Australia?

**Question 9**

What is the size of Melbourne compared to other American cities?

**Text number 6**

Prior to European settlement, the current area of Victoria was home to a large number of Aboriginal peoples, collectively known as the Kori. In 1788, after Britain claimed the whole of the Australian mainland east of the 135th meridian, Victoria was incorporated into the larger colony of New South Wales. The first settlement in the area occurred in 1803 at Sullivan Bay, and much of what is now Victoria was incorporated into Port Phillip District in 1836, the administrative division of New South Wales. Victoria was formally established as a separate colony in 1851 and became self-governing in 1855. The Victorian gold rush of the 1850s and 1860s significantly increased both the colony's population and its prosperity, and by the time of the Australian federal government in 1901, Melbourne had become Australia's largest city and leading economic centre. Melbourne also served as Australia's capital until Canberra was built in 1927, with the Federal Parliament meeting in Melbourne's Parliament House and all the main offices of the Federal Government located in Melbourne.

**Question 0**

What is the name for the Aboriginal women of Victoria?

**Question 1**

When did Britain conquer Australia?

**Question 2**

Where was Victoria the first city in Australia?

**Question 3**

Where was Victoria's first settlement?

**Question 4**

When was Victoria first settled?

**Question 5**

What is the Aboriginal name for Canberra?

**Question 6**

When did the UK sell Australia?

**Question 7**

Where was the Koori tribe supposed to live in Australia?

**Question 8**

Where was Canberra's first settlement?

**Question 9**

When was Victoria's first Parliament House built?

**Text number 7**

More than 26 000 square kilometres of Victorian farmland is sown to cereals, mostly in the western part of the state. Over 50% of this area is sown to wheat, 33% to barley and 7% to oats. A further 6 000 square kilometres (2 300 square miles) are sown for hay. In 2003-2004, Victorian farmers produced over 3 million tonnes of wheat and 2 million tonnes of barley. Victorian farms produce almost 90% of Australia's pears and a third of its apples. It is also a leading producer of stone fruit. The main vegetable crops are asparagus, broccoli, carrots, potatoes and tomatoes. Last year, 121 200 tonnes of pears and 270 000 tonnes of tomatoes were produced.

**Question 0**

How much of Victoria's farmland is cultivated with cereals?

**Question 1**

What percentage of the land under cultivation is wheat?

**Question 2**

How much of Victoria's agricultural land is farmed with hay?

**Question 3**

How many Australian pears does Victoria produce?

**Question 4**

How many tonnes of tomatoes does Victoria produce?

**Question 5**

How much Victorian farmland is cultivated with rye grass?

**Question 6**

What percentage of the land under cultivation is devoted to beans?

**Question 7**

How much of Victoria's agricultural land is sold domestically?

**Question 8**

How much of Victoria produced Australian peaches?

**Question 9**

How many tonnes of potatoes does Victoria produce?

**Text number 8**

Victoria has a written constitution, enacted in 1975, based on the Colonial Constitution Act 1855 of the British Parliament, which makes Parliament the state legislature for matters within the state's jurisdiction. The Victorian Constitution can be amended by the Victorian Parliament, except for certain 'settled' provisions which, depending on the provision, require either an absolute majority of both Parliaments, a three-fifths majority of both Parliaments or the approval of the Victorian people in a referendum.

**Question 0**

When did Victoria adopt the Constitution?

**Question 1**

What is Victoria's constitution based on?

**Question 2**

Which group can change Victoria's constitution?

**Question 3**

What are the exceptions to the Constitution that require special considerations to change?

**Question 4**

What was the document that formed the Victorian Parliament?

**Question 5**

When did Victoria approve the referendum?

**Question 6**

What is the Victorian Parliament based on?

**Question 7**

Which group can change the UK Parliament?

**Question 8**

What are the constitutional exceptions that are the responsibility of the state?

**Question 9**

On the basis of which document has Parliament drawn up "standard" provisions?

**Text number 9**

The Mallee and Upper Wimmera are the warmest areas of Victoria, with hot winds blowing from the nearby semi-open skies. Average temperatures are over 32°C in summer and 15°C in winter. Except for the cool mountain elevations, monthly inland temperatures are 2-7°C (4-13°F) warmer than around Melbourne (see graph). Victoria's highest temperature since World War II, 48.8°C, was recorded at Hopetoun on 7 February 2009 during the 2009 heatwave in south-eastern Australia.

**Question 0**

What is the weather type of the Malleen and Wimmera top?

**Question 1**

How high are the average summer temperatures?

**Question 2**

How cold will this region of Victoria become for the winner?

**Question 3**

What is the highest monthly temperature in Victoria?

**Question 4**

When was the heatwave during which the highest temperature was recorded in Hopetoun?

**Question 5**

What is the weather like in Hopetoun and Melbourne?

**Question 6**

What is the average winter temperature?

**Question 7**

What is the average summer temperature?

**Question 8**

What is the average temperature in Hopetoun in February?

**Question 9**

When was the heatwave during which the highest temperature was recorded in Wimmera?

**Text number 10**

Victorian schools are either publicly or privately funded. Public schools, also known as state or government schools, are directly funded and operated by the Victorian Department of Education. Students do not pay tuition fees, but some additional costs are charged. Private fee-paying schools include parochial schools run by the Roman Catholic Church and independent schools similar to British public schools. Independent schools are usually attached to Protestant churches. Victoria also has a number of private Jewish and Islamic primary and secondary schools. Private schools also receive some public funding. All schools are required to follow curriculum standards set by the government. In addition, Victoria has four state selective schools, Melbourne High School for boys, MacRobertson Girls' High School for girls, the co-educational John Monash Science School, Nossal High School and Suzanne Cory High School and the Victorian College of the Arts Secondary School. Students are admitted to these schools solely on the basis of an academic selection test.

**Question 0**

What are Victoria's public schools?

**Question 1**

Which organisation runs Victoria's public schools?

**Question 2**

Since students do not pay tuition fees, what do they have to pay to go to school in Victoria?

**Question 3**

Which church runs some private schools in Victoria?

**Question 4**

What are the government standards that all schools must meet?

**Question 5**

What are Victoria's public banks?

**Question 6**

Which organisation manages Victoria's waste management?

**Question 7**

What does the state cover in addition to tuition fees?

**Question 8**

Which church runs Victoria's public schools?

**Question 9**

What are the government requirements that only selected schools have to meet?

**Text number 11**

Historically, Victoria has been home to the major car manufacturers Ford, Toyota and Holden. However, the closure announcements made by all three companies in the 2000s mean that Australia is no longer a base for the global automotive industry, with Toyota's February 2014 announcement of 2017 as the closure year, Holden's announcement in May 2013, and Ford's decision in December that year (Ford's Victorian plants at Broadmeadows and Geelong will close in October 2016).

**Question 0**

What kind of manufacturing plant will Victoria lose soon?

**Question 1**

When did Toyota announce the closure of the Victoria plant?

**Question 2**

When did Holden announce the closure of the Victoria plant?

**Question 3**

When will the Ford plants close?

**Question 4**

What make of car is manufactured in Broadmeadows?

**Question 5**

What kind of production facility will Victoria soon get?

**Question 6**

When did Toyota say it would convert its Victoria plant into an aircraft factory?

**Question 7**

When did Holden announce the opening of the Victoria plant?

**Question 8**

When will Ford start building electric cars?

**Question 9**

What brand of tractor is manufactured in Broadmeadows?

**Text number 12**

Victoria contains many topographically, geologically and climatically diverse areas, ranging from the humid, temperate climate of south-eastern Gippsland to the snow-capped alpine regions of Victoria, which rise to almost 2 000 metres, with the highest peak being Mount Bogong at 1 986 metres. To the west and north-west are extensive semi-arid plains. Victoria has a wide range of river systems. The most important of these is the Murray River system. Other rivers include the Wimmera River, Wimmera River, Elgin River, Barwon River, Thomson River, Snowy River, Latrobe River, Yarra River, Maribyrnong River, Mitta River, Hopkins River, Merri River and Kiewa River. State symbols include the pink heather (state flower), the Leadbeater's possum (state animal) and the helmeted honeyeater (state bird).

**Question 0**

How high are Victoria's alpine regions?

**Question 1**

What is Victoria's highest peak?

**Question 2**

How high is Victoria's Mount Bogong?

**Question 3**

What topological systems are found in the Victoria Chapters?

**Question 4**

What is the state bird of Victoria?

**Question 5**

How high are Victoria's river basins?

**Question 6**

What is the snowiest peak in Victoria?

**Question 7**

How high is Victoria's Mount Gippsland?

**Question 8**

What is a Victorian state fish?

**Question 9**

What is the colour of the state of Victoria?

**Text number 13**

The Victorian Alps in the north-east are the coldest part of Victoria. The Alps are part of the Great Dividing Range mountain system, which runs east-west across central Victoria. Average winter temperatures are below 9°C and below 0°C in the highest parts of the range. The state's lowest minimum temperature was recorded at -11.7 °C (10.9 °F) on 13 June 1965 at Omeo and 3 July 1970 at Falls Creek. The state's extreme temperatures are listed in the table below:

**Question 0**

Where is the coldest part of Victoria?

**Question 1**

Which mountain system do the Victorian Alps belong to?

**Question 2**

In which direction does the mountain system extend?

**Question 3**

What is the temperature in the highest part of the mountain range in winter?

**Question 4**

What is the lowest recorded temperature in Victoria?

**Question 5**

Where is the highest point in Victoria?

**Question 6**

Which mountain system do the Omeo Alps belong to?

**Question 7**

Which direction does the water body extend?

**Question 8**

What is the temperature in a mountain valley in winter?

**Question 9**

What is the lowest recorded wind chill in Victoria?

**Text number 14**

Victorian rail services are provided by a number of private and public railway companies operating on state-owned lines. The main operators include V/Line, now owned by the Victorian Government, which provides a centralised service to major regional centres and long-distance services on other lines; Pacific National, CFCL Australia, which provides freight services; Great Southern Rail, which provides The Overland Melbourne-Adelaide train service; and NSW TrainLink, which provides the XPT Melbourne-Sydney train service.

**Question 0**

Who owns Victoria's railway lines?

**Question 1**

Which train line operates in Melbourne?

**Question 2**

Who owns V/Line?

**Question 3**

What type of railway company is Pacific National?

**Question 4**

What kind of rail system is Metro Trains Melbourne?

**Question 5**

Who owns the Victoria railway carriages?

**Question 6**

Which railway line runs around the island?

**Question 7**

What is V/Line sponsoring at the Olympics?

**Question 8**

Which carrier is transporting freight in Melbourne?

**Question 9**

Which operator is on the Australian mainland?

**Text number 15**

Politically, Victoria holds 37 seats in the Australian House of Representatives and 12 seats in the Australian Senate. At the state level, the Victorian Parliament consists of the Legislative Assembly (lower house) and the Legislative Council (upper house). Victoria is currently governed by the Labor Party, with Daniel Andrews as the current Premier. The Queen of Australia's personal representative in the state is the Governor of Victoria, currently Linda Dessau. Local government is concentrated in 79 local government districts, 33 of which are towns, although there are still a number of non-local government areas directly administered by the state.

**Question 0**

How many seats does Victoria have in the Australian House of Representatives?

**Question 1**

How many seats does Victoria have in the Senate?

**Question 2**

What is the name of the lower house of the Victorian Parliament?

**Question 3**

What is the name of the House of Lords in Victoria?

**Question 4**

Who is the current Governor of Victoria?

**Question 5**

How many seats are there in the Australian House of Representatives?

**Question 6**

How many seats does Australia have in the Senate?

**Question 7**

What is the lower level of the Australian House of Representatives?

**Question 8**

What is the name of the upper house of the Australian House of Representatives?

**Question 9**

Who is the current President of Victoria?

**Text number 16**

On 1 July 1851, provisions were made for the election of Victoria's first Legislative Council, and Victoria's absolute independence from New South Wales was confirmed by the declaration of a new colony of Victoria. Days later, still in 1851, gold was discovered near Ballarat and later at Bendigo. Later, gold was found in many places across Victoria. This triggered one of the world's biggest gold rushes. The colony grew rapidly in both population and economic power. In ten years, Victoria's population increased sevenfold from 76 000 to 540 000. All kinds of gold records were produced, including the 'world's richest shallow alluvial gold field' and the largest gold boulder. Victoria produced 20 million ounces of gold in the decade 1851-1860, a third of the world's gold production[citation needed].

**Question 0**

On what day did Victoria declare independence from New South Wales?

**Question 1**

When was gold discovered near Ballarat?

**Question 2**

What caused the discovery of gold in Victoria?

**Question 3**

How much did Victoria's population grow in the ten years after the discovery of gold?

**Question 4**

How much gold did Victoria produce between 1851 and 1860?

**Question 5**

When were the regulations for the election of the President of New South Wales issued?

**Question 6**

When was gold discovered near Birmingham?

**Question 7**

What did Victoria's new railway launch?

**Question 8**

How much did the population of New South Wales grow in the ten years after the discovery of gold?

**Question 9**

How much gold did Victoria produce in 1860?

**Text number 17**

In August 2010, Victoria had 1,548 public schools, 489 Catholic schools and 214 independent schools. There were just under 540 800 students in public schools and just over 311 800 students in private schools. Over 61% of private pupils attend Catholic schools. There were over 462 000 pupils in primary schools and over 390 000 in secondary schools. In the last two years of upper secondary education, 77% of pupils in public schools and 90% of pupils in private schools remained in upper secondary education. Victoria has about 63 519 full-time teachers.

**Question 0**

How many public schools were there in Victoria in August 2010?

**Question 1**

How many Catholic schools were there in Victoria?

**Question 2**

How many students were enrolled in Victorian public schools?

**Question 3**

How many full-time teachers are there in Victoria?

**Question 4**

What percentage of pupils in private schools attend Catholic schools?

**Question 5**

How many vocational schools were there in Victoria in August 2010?

**Question 6**

How many Catholic schools received state aid?

**Question 7**

How many students were enrolled in public schools outside Victoria?

**Question 8**

How many full-time caretakers are there in Victoria?

**Question 9**

What percentage of pupils in private schools attend Lutheran schools?

**Text number 18**

Victoria is the centre of Australian dairy production. It is home to 60% of Australia's three million dairy cattle and produces almost two-thirds of the country's milk, nearly 6.4 billion litres. The state also has 2.4 million beef cattle and slaughters more than 2.2 million cattle and calves each year. In 2003-2004, Victoria's commercial fishing vessels and aquaculture industry produced 11 634 tonnes of seafood worth almost A$109 million. Black scallop is the most important catch, with a yield of $46 million, followed by southern rock lobster, worth $13.7 million. Most abalone and rock lobster are exported to Asia.

**Question 0**

Which Australian state is the centre of dairy production?

**Question 1**

How many dairy cows are there in Australia?

**Question 2**

What percentage of Australia's dairy herd is in Victoria?

**Question 3**

How much of Australia's milk is produced in Victoria?

**Question 4**

Where are most of the abalone and lobster caught in Victorian waters transported?

**Question 5**

Which Australian state invented dairy farming?

**Question 6**

How many spotted dairy cows are there in Australia?

**Question 7**

What percentage of Australian dairy farms are located in Victoria?

**Question 8**

What proportion of Australian veal comes from Victoria?

**Question 9**

Where is most of Victoria's milk and beef exported?

**Text number 19**

In addition, there are several smaller freight operators and numerous tourist railways operating on the former lines of the state-owned system. The Victorian lines are mainly operated at a gauge of 1 600 mm (5 ft 3 in). However, the interstate trunk lines and several branch lines in the western part of the state have been converted to a standard gauge of 1 435 mm (4 ft 8 1⁄2 in). Two tourist railways operate on 760 mm narrow gauge tracks, which are remnants of five former state-owned lines built in mountainous areas.

**Question 0**

What is the gauge of the Victorian railways?

**Question 1**

To what extent have some lines been changed in western Victoria?

**Question 2**

What gauge do the two tourist lines use?

**Question 3**

Where were Victoria's narrow gauge railways built?

**Question 4**

How many narrow-gauge railway lines were previously owned by the state?

**Question 5**

What is the extent of the Victorian power lines?

**Question 6**

To what scale have some lines been modified north of Victoria?

**Question 7**

What gauge is used by small rail operators?

**Question 8**

Where were Victoria's narrow gauge railway lines demolished?

**Question 9**

How many narrow-gauge railways were built before 1900?

**Text number 20**

After the establishment of the colony of New South Wales in 1788, Australia was divided into an eastern half called New South Wales and a western half called New Netherland under the colonial government in Sydney. The first European colony, later known as Victoria, was established in October 1803 under Lieutenant-Governor David Collins at Port Phillip in Sullivan Bay. It consisted of 402 people (5 government officials, 9 naval officers, 2 drummers and 39 soldiers, 5 soldiers' wives and one child, 307 prisoners, 17 prisoners' wives and 7 children). They had been sent from England on board the HMS Calcutta under the command of Captain Daniel Woodriff, mainly because they feared that the French exploring the area might establish their own settlement and thus challenge British rights to the mainland.

**Question 0**

When was the colony of New South Wales established?

**Question 1**

What was the name of the eastern half of the colony in 1788?

**Question 2**

What name was given to the western half of the colony?

**Question 3**

Where was the colonial government that administered the new colony located?

**Question 4**

When did Captain Daniel Woodriff visit New South Wales?

**Question 5**

What name was given to the west of Wales?

**Question 6**

Where was the administration of Calcutta located?

**Question 7**

Who was afraid that the Netherlands might set up its own colony?

**Text number 21**

In 1854, in Ballarat, miners protesting against mining taxes rebelled in armed rebellion against the Victorian government ("Eureka Stockade"), crushed by British troops, but discontent prompted the colonial authorities to reform the administration (notably by lowering the anointed mining royalties) and extend voting rights. Within a short time, the Imperial Parliament granted Victoria responsible administration with the passing of the Colony of Victoria Act 1855. Some of the leaders of the Eureka Rebellion became members of the Victorian Parliament.

**Question 0**

When was the armed protest against mining taxes in Ballarat?

**Question 1**

What was the Ballarat Tax Scandal called?

**Question 2**

Which armed group stopped the rebellion in Ballarat?

**Question 3**

What did the colonial authorities reduce because of the Ballarat rebellion?

**Question 4**

What law was it that gave Victoria her own government?

**Question 5**

When was there an armed demonstration against mining taxes in Eureka Stockade?

**Question 6**

Which armed group stopped the colonial authorities in Ballarat?

**Question 7**

What were the colonial authorities reduced by the Victorian Colonial Act of 1855?

**Question 8**

What became of some of the leaders of the British rebellion?

**Question 9**

Who is protesting against Parliament's taxes?

**Text number 22**

The Victorian Premier is the leader of the political party or coalition with the most seats in the Legislative Assembly. The Prime Minister is the public face of government and, together with Cabinet, sets the legislative and policy agenda. The Cabinet is made up of representatives elected to both houses of parliament. It is responsible for the administration of those areas of government which, under the Australian Constitution, are not the exclusive responsibility of the Commonwealth, such as education, health and law enforcement. The current Premier of Victoria is Daniel Andrews.

**Question 0**

What does the Victorian Premier have to lead in the Legislative Assembly?

**Question 1**

Who sets Victoria's legislative agenda?

**Question 2**

Who can be part of the Victorian cabinet?

**Question 3**

Who is the current Premier of Victoria?

**Question 4**

How are members of the Victorian cabinet chosen?

**Question 5**

What should the secretary lead in the legislative assembly?

**Question 6**

Who sets the agenda for the judiciary in Victoria?

**Question 7**

Who can be part of Victoria's law enforcement agencies?

**Question 8**

Who is Victoria's first Premier?

**Question 9**

How are members of the Victorian education system selected?

**Text number 23**

In 2003-2004, the gross value of Victorian agricultural production increased by 17% to $8.7 billion. This represented 24% of the total gross value of national agricultural production. In 2004, an estimated 32 463 farms occupied about 136 000 square kilometres (52 500 sq mi) of Victorian land. This represents over 60 percent of the state's total land area. Victorian farms range from small horticultural farms to large livestock and grain farms. A quarter of agricultural land is used for growing consumer crops.

**Question 0**

How much did gross agricultural product grow in 2003-2004?

**Question 1**

By what percentage did the volume of agricultural products increase between 2003 and 2004?

**Question 2**

How many farms are there in Victoria?

**Question 3**

How much land is used by farms in Victoria?

**Question 4**

How much of Victoria's land is used by farms?

**Question 5**

How much has gross agricultural product increased since 2004?

**Question 6**

By how many percent has the volume of agricultural products increased since 2004?

**Question 7**

How many farms are there west of Melbourne?

**Question 8**

How much land do farms cultivate each year in Victoria?

**Question 9**

What percentage of Victoria's land is used for consumable crops?

**Text number 24**

Major events also play an important role in Victorian tourism, especially cultural and sports tourism. Most of these events are concentrated in Melbourne, but others are held in regional cities, such as the V8 Supercars and Australian Motorcycle Grand Prix at Phillip Island, the Grand Annual Steeplechase at Warrnambool and the Australian International Airshow at Geelong, as well as numerous local festivals such as the popular Port Fairy Folk Festival, Queenscliff Music Festival, Bells Beach SurfClassic and Bright Autumn Festival.

**Question 0**

What role do events play in Victoria's economy?

**Question 1**

What other tourist attractions are there in Victoria besides cultural events?

**Question 2**

Where are most of Victoria's attractions concentrated?

**Question 3**

Where are other tourism events taking place in Victoria outside Melbourne?

**Question 4**

Which event is taking place at Bells Beach in Victoria?

**Question 5**

What is the importance of fishing to Victoria's economy?

**Question 6**

What other TV programmes does Victoria have, apart from cultural events?

**Question 7**

Where's the best Italian in Victoria?

**Question 8**

Where other religious experiences take place in Victoria outside Melbourne?

**Question 9**

Which event is taking place in Port Sunshine, Victoria?

**Document number 447**

**Text number 0**

The Huguenots peaked at around two million by 1562, and were concentrated mainly in southern and central France, accounting for about one-eighth of the French Catholic population. As the Huguenots became more influential and more open in expressing their faith, Catholic hostility grew, despite increasingly liberal political concessions and tolerance decrees from the French crown. The result was a series of religious conflicts known as the Wars of Religion, which took place intermittently between 1562 and 1598. The wars finally ended with the Edict of Nantes, which granted the Huguenots considerable religious, political and military autonomy.

**Question 0**

Where was the French Huguenot population largely concentrated?

**Question 1**

What was the relationship between Huguenots and Catholics at its peak?

**Question 2**

When were the Wars of Religion fought?

**Question 3**

Which treaty ended the Wars of Religion?

**Question 4**

What was done with this agreement?

**Question 5**

When did the Huguenot movement start?

**Question 6**

What were French Catholics concentrating on in France?

**Question 7**

Who originally started the Wars of Religion?

**Question 8**

How many Huguenots were there in 1598?

**Question 9**

How many French Catholics were there in 1598?

**Text number 1**

Originally a derisive term for Huguenot, the origin of which is unclear. Various hypotheses have been put forward. The nickname may have been an associated reference to the Swiss politician Besançon Hugues (d. 1532) and the religiously controversial nature of the Swiss republic of his time. The Lemp name was a clever pun on the Hugues name using the Dutch word Huisgenoten (literally "fellow countrymen"), which referred to the meaning of the German word Eidgenosse (allies, as in "citizen of one of the Swiss federal states"), which is somewhat related. Geneva was the adoptive home of John Calvin and the centre of the Calvinist movement. In Geneva, Hugues was a Catholic, but he led the 'Confederate Party', so called because it advocated independence from the Duke of Savoy through a union between the City State of Geneva and the Swiss Confederation. The term Huguenot was reportedly first used in France to refer to the conspirators (all aristocratic members of the Reformed Church) involved in the 1560 conspiracy at Amboise: a failed attempt to take power in France from the powerful House of Guise. The move would have had the side effect of promoting relations with the Swiss. Thus, Hugues plus Eidgenosse through Huisgenote presumably became a Huguenot, a nickname that associated the Protestant cause with unpopular politics in France[citation needed].

**Question 0**

The term Huguenot was originally intended to give?

**Question 1**

The term may refer to any Swiss politician?

**Question 2**

Which Swiss town was the centre of the Calvinist movement?

**Question 3**

What was the name given to the plot to seize power from the French House of Guise?

**Question 4**

When did this attempt take place?

**Question 5**

In what year was Swiss politician Besancon Hugues born?

**Question 6**

What does Huisgenoten mean in French?

**Question 7**

In which city was John Calvin born?

**Question 8**

To which religion did John Calvin belong?

**Question 9**

In what year did the House of Guise gain influence?

**Text number 2**

The availability of the Bible in the vernacular was important for the spread of the Protestant movement and the development of the Reformed Church in France. The country had a long history of struggles with the Pope when the Protestant Reformation finally arrived. Around 1294, the Roman Catholic priest Guyard de Moulin produced a French version of the Bible. Based on his manuscript, a two-volume, illustrated, foil-printed paraphrase by Jean de Rély was printed in Paris in 1487.

**Question 0**

What helped the spread of Protestantism in France?

**Question 1**

When did the first French Bible appear?

**Question 2**

Who translated this version of the scriptures?

**Question 3**

When did an illustrated, formatted version of this appear?

**Question 4**

Jean De Rely's illustrated French-language writings were first published in Which city?

**Question 5**

In what year did the Protestant Reformation arrive in France?

**Question 6**

Where did the Protestant Reformation originate?

**Question 7**

In what year was the French Reformed Church founded?

**Question 8**

Where did the Roman Catholic priest Guyard de Moulin come from?

**Question 9**

Where was Jean de Rely from?

**Text number 3**

Montpellier was one of the most important of the 66 "sûreté villages" granted to the Huguenots by the Edict of 1598. The city's political institutions and university were handed over to the Huguenots. Tensions with Paris led to a siege by the royal army in 1622, and the peace terms called for the city's fortifications to be dismantled. The royal fortress was built, and the university and consulate were taken over by the Catholic party. Even before the Edict of Alès (1629), the Protestant regime was dead and the ville de sûreté no longer existed[citation needed].

**Question 0**

What was the name given to the towns that the Huguenots acquired in 1598?

**Question 1**

Which of these cities was the most important?

**Question 2**

In what year did France besiege Montpellier?

**Question 3**

Which declaration officially ended the limited autonomy of the Huguenots?

**Question 4**

When was this declaration issued?

**Question 5**

What was the consequence of the Edict of Ales in Montpellier in 1629?

**Question 6**

What does "villes de surete" mean in Finnish?

**Question 7**

How many kilometres is Montpellier from Paris?

**Question 8**

In what year did the Protestant regime in Montpellier practically collapse?

**Question 9**

In what year did the Catholics build the royal fortress in Montpellier?

**Text number 4**

Individual Huguenots settled on the Cape of Good Hope as early as 1671, when François Villion (Viljoen) arrived. However, the first Huguenot to arrive on the Cape of Good Hope was Maria de la Queillerie, wife of Commander Jan van Riebeeck (and daughter of a clergyman of the Sovereign Church), who arrived on 6 April 1652 to establish a colony in what is now Cape Town. The couple left for the Far East ten years later. On 31 December 1687, the first organised group of Huguenots sailed from the Netherlands to the Dutch East India Company's base on the Cape of Good Hope. Most of the Huguenots who settled in the Cape arrived between 1688 and 1689 in seven ships as part of an organised migration, but quite a few were still arriving in 1700; after that, numbers dwindled and only small groups arrived at a time.

**Question 0**

Where did the first Huguenot settlers settle?

**Question 1**

Which modern town is located on the original Huguenot settlement?

**Question 2**

Who was the first Huguenot to arrive on the Cape of Good Hope?

**Question 3**

Which trading company helped settle the Huguenots near the Cape?

**Question 4**

After which year did the number of new Huguenot immigrants decrease?

**Question 5**

In which year was Francois Villion born?

**Question 6**

What was Maria de la Quellerie's father's name?

**Question 7**

How many Hugeunot ships sailed to the Cape of Good Hope in 1671?

**Question 8**

Which city was Jan van Riebeeck from?

**Question 9**

What did Jan van Riebeeck's father do for a living?

**Text number 5**

Huguenots, prevented by the government from settling in New France, sailed to North America in 1624 under the leadership of Jessé de Forest and settled instead in the Dutch colony of New Netherland (later annexed to New York and New Jersey) and in British colonies such as Nova Scotia. Many New Amsterdam families were of Huguenot origin, having often emigrated as refugees to the Netherlands in the previous century. In 1628, the Huguenots founded a congregation under the name L'Église française à la Nouvelle-Amsterdam (French Church of New Amsterdam). This congregation continues today as L'Eglise du Saint-Esprit, part of the Episcopal (Anglican) Communion, and welcomes French-speaking New Yorkers from all over the world. On arrival in New Amsterdam, the Huguenots were offered land for permanent settlement directly across from Manhattan on Long Island, and chose the harbour at the end of Newtown Creek. They became the first Europeans to live in Brooklyn, then known as Boschwick, now known as Bushwick.

**Question 0**

When did the Huguenots move to North America?

**Question 1**

Who led the Huguenot colonisation of North America?

**Question 2**

What was the name of the first Huguenot church in the New World?

**Question 3**

What is the name of that first Huguenot church today?

**Question 4**

The Huguenots were the first Europeans to live in what is now New York City?

**Question 5**

In which part of the present-day United States was New France located?

**Question 6**

In what year did the Boschwick district officially change its name to Bushwick?

**Question 7**

Where did Jesse de Forest sell to come to North America?

**Question 8**

What was the second British colony in North America apart from Nova Scotia?

**Question 9**

In what year was New Netherland divided into New York and New Jersey?

**Text number 6**

In the early years, many Huguenots also settled in what is now Charleston, South Carolina. In 1685, Reverend Elie Prioleau, a native of the French town of Pons, was among the first to settle in the area. He became the pastor of the first Huguenot church in North America in that town. After the revocation of the Edict of Nantes in 1685, several Huguenot families of Norman and Carolingian nobility and descent moved to Charleston Orange, including Edmund Bohun of Suffolk, England, from the family of Humphrey de Bohun of Charlemagne, Jean Postell of Dieppe, France, Alexander Pepin, Antoine Poitevin of Orsement, France, and Jacques de Bordeaux of Grenoble. They did well in marriage and in property speculation. After applying to the British Crown in 1697 for the right to own land in the Baronies, they prospered as slave owners of the Cooper, Ashepoo, Ashley and Santee River plantations, which they bought from Edmund Bellinger, the British governor. Some of their descendants moved deep south and to Texas, where they developed new plantations.

**Question 0**

Which southern town did the Huguenots settle near?

**Question 1**

Where in South Carolina did the Huguenot community settle?

**Question 2**

When did the Huguenots gain the right to own land in the Baronial regions?

**Question 3**

Who did the Huguenots in South Carolina buy land from?

**Question 4**

Charleston settler Elie Prioleau was from which French town?

**Question 5**

Which French town was Alexander Pepin from?

**Question 6**

Which English town was Edmund Bellinger from?

**Question 7**

In what year did Pastor Elie Prioleau become pastor of the first Huguenot church in Charleston, South Carolina?

**Question 8**

In what year did Edmund Bohun, a member of the Humphrey de Bohun family of French royalty, move to North America?

**Question 9**

What year was Charleston, North Carolina founded?

**Text number 7**

Stadtholder William III of Orange, who later became King of England, became King Louis XIV's strongest opponent after the French invasion of the Dutch Republic in 1672. William formed the League of Augsburg as a coalition to oppose Louis and the French state. As a result, many Huguenots saw the wealthy and Calvinist Dutch Republic, which led Louis XIV's resistance, as the most attractive place to live after the revocation of the Edict of Nantes. They also found there many French-speaking Calvinist churches.

**Question 0**

Who was Louis XIV's main rival?

**Question 1**

Which throne would William eventually win?

**Question 2**

Which alliance rose up against Louis XIV's France?

**Question 3**

To which European countries did the Huguenots feel a kinship when they moved?

**Question 4**

When did France and Holland fight in the 17th century?

**Question 5**

In what year did William III become King of England?

**Question 6**

What was the main language spoken by William III?

**Question 7**

What was the mother tongue of most of the inhabitants of the Augsburg League?

**Question 8**

In what year did King Louis XIV of France ascend the throne?

**Text number 8**

A new religious war in the 1620s led to the Huguenots' political and military privileges being abolished after their defeat. They retained the religious provisions of the Edict of Nantes until the reign of Louis XIV, who gradually increased their persecution until he issued the Edict of Fontainebleau (1685), which abolished all legal recognition of Protestantism in France and forced the Huguenots to convert. Nearly three-quarters of the Huguenots eventually died or surrendered, and some 500,000 Huguenots had fled France by the early 1700s[citation needed].

**Question 0**

Which declaration abolished Protestantism in France?

**Question 1**

When was this order promulgated?

**Question 2**

Which Frenchman made this declaration?

**Question 3**

How many Huguenots fled France in the 1700s?

**Question 4**

In which decade did Louis XIV begin his reign?

**Question 5**

How many Huguenots were there in France in 1685?

**Question 6**

Who had issued the edict of Nantes?

**Question 7**

How many Huguenots were there in France in the early 1700s?

**Text number 9**

The French Catholic Church and many of its members opposed the Huguenots. Some Huguenot missionaries and parishioners were attacked when they tried to gather for worship. The peak of the persecution was the St Bartholomew's Day massacre, when between 5 000 and 30 000 people were killed, although there were also political reasons for this, as some Huguenots were nobles who were trying to establish separate centres of power in southern France. In response to the French Catholics, the Huguenots created their own militia.

**Question 0**

Which group was particularly opposed to the Huguenots?

**Question 1**

Which event was the worst example of Huguenot persecution?

**Question 2**

How many Huguenots were killed during this purge?

**Question 3**

How did the Huguenots defend themselves?

**Question 4**

What was the non-religious reason for the massacre?

**Question 5**

How many French Catholics died in the Bartholomew's Day massacre?

**Question 6**

How many of the French nobility were Huguenots?

**Question 7**

How many French Catholics died after the Huguenot reprisals?

**Question 8**

How many Huguenots were there in northern France during this period?

**Text number 10**

By 1620, the Huguenots were on the defensive, and the government put increasing pressure on them. Between 1621 and 1629, three small civil wars, known as the Huguenot rebellions, broke out, mainly in south-west France. The uprising took place ten years after the death of Henry IV. Henry IV, before converting to Catholicism, had been a Huguenot who had protected Protestants with the Edict of Nantes. His successor, Louis XIII, became even more intolerant of Protestantism under the rule of his Italian Catholic mother, Marie de' Medici. The Huguenots responded by setting up independent political and military structures, establishing diplomatic links with foreign powers and openly rebelling against the central government. The French crown ruthlessly suppressed the rebellions[citation needed].

**Question 0**

What was the name given to the civil wars caused by the Huguenots?

**Question 1**

Where did these uprisings take place?

**Question 2**

When did these revolts take place?

**Question 3**

Which king and former Huguenot looked after the welfare of the group?

**Question 4**

Which of Henry's successors continued the persecution of the Huguenots?

**Question 5**

When was the second Huguenot revolt?

**Question 6**

In what year was Louis XIII crowned?

**Question 7**

What nationality was Louis XIII originally?

**Question 8**

With which nationality did the Huguenots establish diplomatic relations?

**Question 9**

To which religion did most Italians belong in the 1620s?

**Text number 11**

There are around one million Protestants in France today, representing around 2% of the French population. Most of them are concentrated in the Alsace region in north-eastern France and in the Cévennes mountains in the south, and they still consider themselves Huguenots to this day. Even after the exodus of the 600s, the Australian-French diaspora still considers itself Huguenot. It has long been integrated into Australian society and is encouraged by the Huguenot Society of Australia to embrace and preserve its cultural heritage through the Society's genealogical services.

**Question 0**

How many Protestants live in France today?

**Question 1**

What percentage of the French population is Protestant today?

**Question 2**

Which northern French province has a large Protestant population?

**Question 3**

In which southern region are Protestants concentrated?

**Question 4**

In which country is there currently a group calling themselves Huguenots?

**Question 5**

How many people consider themselves Huguenots today outside France?

**Question 6**

How many people live in the Alsace region in France?

**Question 7**

Where in France are the fewest Protestants?

**Question 8**

What percentage of Australians consider themselves Huguenots?

**Question 9**

How many Protestants are there in the Cevennes mountain region?

**Text number 12**

The Huguenot colonists did not disperse or settle in different parts of the country, but rather formed three communities or congregations: one in New York City, another 21 miles north of New York in a town called New Rochelle, and a third in New Paltz, in the northern part of the state of New Paltz. The Huguenot Street Historic District in New Paltz is designated a National Historic Landmark and is the oldest street in the United States. A small group of Huguenots also settled on the southern shore of Staten Island along New York Harbor, after which the current Huguenot District is named.

**Question 0**

Which town in upstate New York was inhabited by Huguenots?

**Question 1**

Which town in upstate New York was inhabited by Huguenots?

**Question 2**

Which Huguenot site is designated as a historical landmark?

**Question 3**

What is located in this area?

**Question 4**

In which district is the Huguenot district?

**Question 5**

How far is New Paltz from New York?

**Question 6**

How far is New Rochelle from New Paltz?

**Question 7**

How long is the south shore of Staten Island?

**Question 8**

Where did most Huguenots choose to live?

**Question 9**

Where are the fewest Huguenots left?

**Text number 13**

After the repeal of the Edict of Nantes, the Dutch Republic received the largest group of Huguenot refugees, estimated at between 75 000 and 100 000 people. Among them were 200 priests. Many came from the Cévennes region, for example from the village of Fraissinet-de-Lozère. This was a huge influx, as the total population of the Dutch Republic at the time was around 2 million. Around 1700, it is estimated that almost 25% of the population of Amsterdam were Huguenots. In 1705, Amsterdam and the West Frisia region were the first regions to grant full citizenship rights to Huguenot immigrants, followed by the Dutch Republic in 1715. The Huguenots intermingled with the Dutch from the beginning.

**Question 0**

Which country initially received the largest number of Huguenot refugees?

**Question 1**

How many refugees moved to the Netherlands?

**Question 2**

What was the population of the Republic of the Netherlands before this emigration?

**Question 3**

Which two republican regions were the first to grant rights to the Huguenots?

**Question 4**

On the basis of which declaration did the Huguenot refugees emigrate?

**Question 5**

How many Huguenots lived in West Frisia in 1705?

**Question 6**

How many Huguenots lived in Amsterdam in 1705?

**Question 7**

In what year was the Nantes Edict repealed?

**Question 8**

How many priests were there in the Dutch Republic before the Huguenots arrived?

**Question 9**

In which country is Cevennes located?

**Text number 14**

In the latter context, the name may have referred to superstitious worship; in the popular imagination, Huguon, at King Hugo's gate, was haunted by the ghost of le roi Huguet (considered a notorious villain by Roman Catholics) and other spirits who, instead of purgatory, returned to harm the living at night. It was here in Tours that the prétendus réformés ('these supposedly 'reformed') used to gather at night, both for political purposes and to pray and sing psalms. Such explanations have been traced back to the contemporary Reguier de la Plancha (d. 1560), who in his De l'Estat de France offered the following explanation of the origin of the name, as quoted in The Cape Monthly:

**Question 0**

Where was King Hugo's gate?

**Question 1**

By what other name was the gate known?

**Question 2**

Who is said to have haunted the gate?

**Question 3**

By what name were the "supposedly reformed" known?

**Question 4**

At what time did these reformed people supposedly gather for the Huguenot rituals?

**Question 5**

What year was Huguon built?

**Question 6**

In what year did King Hugo die?

**Question 7**

In what year did le roi Huguet die?

**Question 8**

In which year was Reguier de la Plancha born?

**Question 9**

What year was The Cape Monthly first published?

**Text number 15**

Other evidence of the Walloons and Huguenots in Canterbury includes a block of houses on Turnagain Lane, which has preserved weavers' windows on the top floor, as many Huguenots worked as weavers. The Weavers, a half-timbered house on the riverbank, was a weaving school from the late 1500s until about 1830 (it has been converted into a restaurant - see photo above.) The house takes its name from the weaving school, which was moved there in the last years of the 19th century, reviving its former purpose). Other refugees were engaged in a variety of occupations necessary to maintain the community apart from the indigenous population. This economic separation was a prerequisite for the initial acceptance of the refugees into the town. They also settled elsewhere in Kent, notably in Sandwich, Faversham and Maidstone - towns where there were previously refugee churches.

**Question 0**

Where did the Huguenots and Walloons settle in England?

**Question 1**

Which house in Canterbury housed a weaving school?

**Question 2**

What was the social structure of the Huguenot refugees in Canterbury?

**Question 3**

In which other English cities did the Huguenots settle?

**Question 4**

What is the current location of The Weaving House?

**Question 5**

When did The Weavers become a restaurant?

**Question 6**

Which English city was home to the largest number of Huguenots?

**Question 7**

Which English city was home to the largest number of conquerors?

**Question 8**

What was the occupation of the native English speakers?

**Question 9**

Which English city had the largest refugee church?

**Text number 16**

Several Huguenots served as mayors of Dublin, Cork, Youghal and Waterford in the 1600s and 1700s. There are still numerous signs of Huguenot presence, as names are still in use and areas of the major cities are named after the people who settled there. Examples include the Huguenot Quarter and French Church Street in Cork City and D'Olier Street in Dublin, named after a High Sheriff and one of the founders of the Bank of Ireland. The French Church in Portarlington dates from 1696 and was built to serve the city's important new Huguenot community. They formed the majority of the town's population at the time.

**Question 0**

Which Irish towns had Huguenot mayors in the 17th and 1700s?

**Question 1**

In which Irish city is French Church Street?

**Question 2**

Where is D'Olier Street?

**Question 3**

D'Olier Street is named after whom?

**Question 4**

When was the French church in Portarlington built?

**Question 5**

Which Irish city still has little sign of the Huguenots?

**Question 6**

What year was D'Olier Street built in Dublin?

**Question 7**

What year was French Church Street built in Cork?

**Question 8**

In which year was the Huguenot area in Cork designated?

**Question 9**

What was D'olier's first name?

**Text number 17**

The emigration of Huguenots from France caused a brain drain, as many Huguenots had achieved important positions in society. The Kingdom did not fully recover for years. The fact that the French crown did not allow non-Catholics to settle in New France may help explain the colony's slower population growth compared to neighbouring British colonies, which opened settlement to religious dissenters. At the time of the French and Indian War (the North American front of the Seven Years' War), the British colonies were home to a substantial Huguenot population, many of whom took part in the British defeat in New France in 1759-60.

**Question 0**

What is the general term for the loss of key figures in French society due to Huguenot immigration?

**Question 1**

What was the name of the first French colony in the New World?

**Question 2**

Which people were not allowed to settle in New France?

**Question 3**

The French and Indian War was part of which European conflict in the New World?

**Question 4**

When did the British defeat New France?

**Question 5**

In what year did the French and Indian War begin?

**Question 6**

Which people were not allowed to settle in the British colonies?

**Question 7**

In what year did the first Huguenots arrive in the British colonies?

**Question 8**

Who won the Seven Years' War?

**Text number 18**

The war, followed by short periods of peace, continued for almost a quarter of a century. The war finally ended in 1598 when Henry of Navarre, who had ascended to the French throne as Henry IV and renounced Protestantism in favour of Roman Catholicism, issued the Edict of Nantes. The Edict established Catholicism as the state religion of France, but gave Protestants equal status with Catholics under the crown and a degree of religious and political freedom within their territory. The Edict also protected Catholic interests by preventing the establishment of new Protestant churches in territories under Catholic control.

**Question 0**

What was Henry IV known as before he came to the throne?

**Question 1**

When did Henry give the edict of Nantes?

**Question 2**

What did Edict do for the Huguenots in France?

**Question 3**

The edict protected Catholics by preventing what?

**Question 4**

Which religion did Henry renounce when he came to the throne?

**Question 5**

In what year was Henry of Navarre born?

**Question 6**

In what year was Henry of Navarre made Henry IV?

**Question 7**

In what year did the war between Protestants and Catholics begin in France?

**Question 8**

What did the Edict of Nantes encourage in the Catholic-dominated areas of France?

**Text number 19**

The revocation banned Protestant services, required children to be educated as Catholics and prohibited emigration. It proved disastrous for the Huguenots and costly for France. It caused massacres, destroyed trade and led to the illegal flight of hundreds of thousands of Protestants, many of whom became intellectuals, doctors and business leaders in Britain, as well as in Holland, Prussia and South Africa. Four thousand emigrated to the North American colonies, where they settled, notably in New York and Virginia. The British welcomed the French refugees and gave money from both government and private agencies to support their resettlement. The Huguenots who remained in France became Catholics and were called 'new converts'.

**Question 0**

What was required of the Huguenot children after the edict was repealed?

**Question 1**

How did repeal restrict Huguenot travel?

**Question 2**

How many Huguenots emigrated to North America?

**Question 3**

By what name were the Huguenots who remained in France eventually known?

**Question 4**

Where else did the Huguenot refugees settle besides Britain and North America?

**Question 5**

How many French people fled to Prussia?

**Question 6**

Who else but England was particularly welcoming to those fleeing France?

**Question 7**

Which country was well known for providing Protestant education?

**Question 8**

How many of those who fled France became doctors?

**Question 9**

How many Huguenots decided to stay in France?

**Text number 20**

The first Huguenots to leave France sought freedom from persecution in Switzerland and the Netherlands [A group of Huguenots were among the French colonists who arrived in Brazil in 1555 and founded France Antarctique. A pair of ships carrying about 500 people arrived in Guanabara Bay, now Rio de Janeiro, and settled on a small island. A fort called Fort Coligny was built to protect them from attacks by Portuguese troops and Brazilian Indians. It was an attempt to establish a French colony in South America. The Portuguese destroyed the fort in 1560 and imprisoned some of the Huguenots. The Portuguese threatened the prisoners with death if they did not convert to Catholicism. The Huguenots of Guanabara, as they are now known, drew up a declaration of faith to express their beliefs to the Portuguese. This was their death sentence. This document, the Guanabara Confession of Faith, became the first Protestant confession of faith in the Americas.

**Question 0**

What were the Huguenots' first two destinations?

**Question 1**

When was the French colony in what is now Brazil established?

**Question 2**

What was the name of the French colony of Brazil?

**Question 3**

In what year was the fortress of Coligny destroyed?

**Question 4**

By which document did the Huguenots profess their faith to the Portuguese in Brazil?

**Question 5**

How many Huguenots were part of the group that founded France Antarctique in 1555?

**Question 6**

In what year was Coligny Fortress built?

**Question 7**

How many Huguenots fled to Switzerland in the first wave?

**Question 8**

How many Huguenots were killed by the Portuguese in Guanabara because of their Protestantism?

**Text number 21**

Many farms in the Western Cape province of South Africa still have French names. Many families, who nowadays speak mostly Afrikaans, have surnames that refer to French Huguenot ancestry. Examples include: Blignaut, Cilliers, de Klerk (Le Clercq), de Villiers, du Plessis, Du Preez (Des Pres), du Randt (Durand), du Toit, Duvenhage(Du Vinage), Franck, Fouche, Fourie (Fleurit), Gervais, Giliomee (Guilliaume), Gous/Gouws (Gauch), Hugo, Jordaan (Jourdan), Joubert, Kriek, Labuschagne (la Buscagne), le Roux, Lombard, Malan, Malherbe, Marais, Maree, Minnaar (Mesnard), Minnaar (Mesnard), Nel (Nell), Naude', Nortje (Nortier), Pienaar (Pinard), Retief (Retif), Rossouw (Rousseau), Taljaard (Taillard), TerBlanche, Theron, Viljoen (Villion) and Visagie (Visage). The South African wine industry owes much to the Huguenots, some of whom had vineyards in France or were brandy distillers and used their skills in their new homeland.

**Question 0**

What language do French-speaking families speak in South Africa today?

**Question 1**

Which South African industry is descended from Huguenot immigrants?

**Question 2**

Where can you find former Huguenot farms in South Africa?

**Question 3**

What is the distinguishing feature that indicates that some South Africans are of French origin?

**Question 4**

Which South African family had a vineyard in France?

**Question 5**

Which South African family had the largest vineyard in France?

**Question 6**

Which prominent South African family distilled cognac and were Huguenots?

**Question 7**

Which Huguenot-French family had the largest distillery in South Africa?

**Text number 22**

Paul Revere was descended from Huguenot refugees, as was Henry Laurens, who signed the South Carolina Confederate Treaty, Jack Jouett, who left the Cuckoo Tavern to warn Thomas Jefferson and others that Tarleton and his men were on their way to arrest him for crimes against the king, Francis Marion and many other leaders of the American Revolution and later statesmen. The last active Huguenot congregation in North America meets in Charleston, South Carolina, in a church that dates from 1844. The Huguenot Society of America maintains Manak Episcopal Church in Virginia as a historic sanctuary where occasional services are held. The Society has chapters in several states, the largest of which is in Texas.

**Question 0**

Which midnight rider of the Revolutionary War was a descendant of the Huguenots?

**Question 1**

Which signatory of the pact was a descendant of the Huguenots?

**Question 2**

Which city is the last Huguenot church in the United States?

**Question 3**

Which Virginia church is considered a historic shrine by Huguenots?

**Question 4**

Which state has the largest Huguenot association?

**Question 5**

In what year was the South Carolina Covenant signed?

**Question 6**

In what year was the American Huguenot Association founded?

**Question 7**

What is the name of the Huguenot church in Charleston, South Carolina?

**Question 8**

Who owned the Cuckoo Tavern?

**Question 9**

What was the location of the Cuckoo Tavern?

**Text number 23**

Some Huguenots settled in Bedfordshire, one of the main centres of the British lace industry at the time. Although 19th century sources have claimed that some of these refugees were lacemakers and contributed to the East Midlands lace industry, this is disputed. The only mention of immigrant lace-makers from this period is of 25 widows who settled in Dover, and there is no contemporary documentation to support the existence of Huguenot lace-makers in Bedfordshire. The claim that the lace style known as 'Bucks Point', which is a 'combination of Mechlin patterns on a Lille ground', is indicative of Huguenot influence is incorrect: the lace style now known as 'Mechlin lace' only developed in the first half of the 17th century, and lace incorporating Mechlin patterns and a Lille ground did not appear until the late 17th century, when it was widely copied throughout Europe.

**Question 0**

What was the centre of industry in Bedfordshire?

**Question 1**

What style of lace do some people mistakenly believe to be Huguenot-influenced?

**Question 2**

What references are there to lace-neck weaving by Huguenots in the 19th century?

**Question 3**

When did Mechlin's lace develop?

**Question 4**

How many immigrant lace-makers were there in Bedfordshire?

**Question 5**

In what era was Bucks Point lace-making developed?

**Question 6**

How many Huguenots settled in Bedfordshire?

**Question 7**

What was the main British centre of Dover at that time?

**Text number 24**

In Berlin, the Huguenots founded two new districts, Dorotheenstadt and Friedrichstadt. By 1700, one fifth of the city's population was French-speaking. The Huguenots in Berlin retained French in their worship services for almost a century. Eventually they decided to switch to German in protest against Napoleon's occupation of Prussia from 1806-07. Many of their descendants rose to prominent positions. They founded several churches, including in Fredericia (Denmark), Berlin, Stockholm, Hamburg, Frankfurt, Helsinki and Emden.

**Question 0**

Which two Huguenot districts were founded in Berlin?

**Question 1**

How much of Berlin's population spoke French by 1700?

**Question 2**

Why did the Berlin Huguenots switch from French to German in their worship services?

**Question 3**

In what years did this occupation take place?

**Question 4**

Which other northern European cities had Huguenot churches?

**Question 5**

In what year did Napoleon rise to power in France?

**Question 6**

Which part of Stockholm was founded by the Huguenots?

**Question 7**

Which district was founded by the Huguenots in Hamburg?

**Question 8**

When did the Huguenots arrive in Helsinki?

**Question 9**

What proportion of the population of Helsinki spoke French in 1700?

**Text number 25**

The Huguenots (estimated at 200,000-1,000,000) then fled to the surrounding Protestant countries of England, the Netherlands, Switzerland, Norway, Denmark and Prussia, where they were welcomed by the Calvinist elector Frederick William to help rebuild his war-torn and underpopulated country. In the early 1700s, a regional group of Huguenots known as the Camisards rioted against the Catholic Church in the region, burning churches and killing clergy. It took French troops years to hunt down and destroy all the Camisard troops between 1702 and 1709.

**Question 0**

Which Central European country had a Calvinist ruler?

**Question 1**

When the Huguenots fled France, where was their last remaining stronghold?

**Question 2**

What did the Huguenot group of the 17th century call themselves?

**Question 3**

Who did the Camisards rise up to fight?

**Question 4**

In which years did French troops defeat the Camisard rebellions?

**Question 5**

In which year did Frederick William of Prussia become a great elector?

**Question 6**

How many Huguenots fled to England?

**Question 7**

How many people did Prussia lose because of the war?

**Question 8**

When did the fighting in Prussia end?

**Question 9**

In what year did the Camisards organise themselves into a regional group in the south of France?

**Text number 26**

In 1564, a group of Norwegian Huguenots led by Jean Ribault established a small Fort Caroline colony on the banks of the St. Johns River in what is now Jacksonville, Florida. The enterprise was the first permanent European settlement in what is now the continental United States, but it survived for only a short time. In September 1565, a French naval attack on the new Spanish colony of St. Augustine failed when its ships were struck by a hurricane on their way to the Spanish camp at Fort Matanzas. Hundreds of French soldiers were stranded and surrendered to the outnumbered Spanish forces led by Pedro Menendez. Menendez proceeded to massacre the defenceless Huguenots, after which he destroyed the garrison at Fort Caroline.

**Question 0**

Near which modern-day Florida city was there a Huguenot settlement in the 1500s?

**Question 1**

Who was the leader who established the colony in Florida?

**Question 2**

What was the name of the Huguenot colony in Florida?

**Question 3**

Which army attacked and destroyed this colony?

**Question 4**

When was the settlement destroyed?

**Question 5**

In what year was Jean Ribault born?

**Question 6**

How many Huguenots were murdered by Pedro Menendez in Saint Augustine?

**Question 7**

How many Huguenots were there in Fort Carolina?

**Question 8**

Where had the Norman Huguenots sailed from to arrive at Fort Caroline?

**Text number 27**

French Huguenots twice tried to set up an asylum in North America. In 1562, naval officer Jean Ribault led an expedition to explore Florida and what is now the southeastern United States and established the Charlesfort outpost on Parris Island in South Carolina. Wars of religion prevented the return journey and the outpost was abandoned. In 1564, René Goulaine de Laudonnière, a former lieutenant of Ribault's, made another journey to establish a colony; he founded Fort Caroline in what is now Jacksonville, Florida. The war at home again prevented resupply, and the colony struggled. In 1565, the Spanish decided to strengthen their claim to Florida and sent Pedro Menéndez de Avilés, who established the settlement of St. Augustine near Fort Caroline. Menéndez's troops defeated the French and executed most of the Protestant prisoners.

**Question 0**

What was the name of the first Huguenot outpost in South Carolina?

**Question 1**

Near which current area was this settlement located?

**Question 2**

Which Spanish officer founded the colony of St Augustine?

**Question 3**

When did Ribault first establish a settlement in South Carolina?

**Question 4**

What European event caused the Huguenots to abandon Charlesfort?

**Question 5**

In what year did the Wars of Religion begin?

**Question 6**

In which year was Rene Goulaine de Laudonniere born?

**Question 7**

In what year was Pedro Menendez de Aviles born?

**Question 8**

In what year did Rene Goulaine de Laudonniere leave his lieutenancy to Jean Ribault?

**Question 9**

In what year did the French Huguenots abandon their first North American outpost?

**Text number 28**

In 1700, a few hundred French Huguenots emigrated from England to the colony of Virginia, where the English Crown had promised them land grants in Lower Norfolk County. When they arrived, the colonial authorities instead offered them land 20 miles above the falls of the James River in the abandoned Monacan village known as Manakin Town, now in Powhatan County. Some of the settlers landed in what is now Chesterfield County. On May 12, 1705, the Virginia General Assembly passed an act requiring the 148 Huguenots still living in Manakintown to be naturalized. Of the original 390 settlers in the isolated settlement, many had died, others lived outside the town on English-style farms, and others moved to different areas. Gradually, they became involved with their English neighbours. In the 1700s and 1800s, descendants of the French migrated west to the Piedmont and across the Appalachians into Kentucky, Tennessee, Missouri and other western states. In the Manakintown area, the Huguenot Memorial Bridge over the James River and Huguenot Road are named in their honor, as are many local sites, including several schools, including Huguenot High School.

**Question 0**

In which English colony were Huguenot settlers promised land?

**Question 1**

In which area of this British colony were there Huguenot lands?

**Question 2**

Which city did the Huguenots actually take over when they arrived?

**Question 3**

How many original settlers settled in Manakintown?

**Question 4**

When were these settlers naturalised as English settlers?

**Question 5**

How many French Huguenots eventually moved to Missouri from Manakin Town?

**Question 6**

How many of the French Huguenots from Manakin Town eventually moved to Kentucky?

**Question 7**

How many of the French Huguenot inhabitants of the city of Manakin actually live on farms outside the city?

**Question 8**

In which century was the Huguenot Memorial Bridge built?

**Question 9**

In what year was the city of Manakin first abandoned?

**Text number 29**

Some Huguenots fought alongside the Dutch against Spain in the early years of the Dutch Rebellion (1568-1609). The Dutch Republic quickly became a place of exile for the Huguenots. Early links were already evident in William the Silent's 'Apology' condemning the Spanish Inquisition, written by his minister at court, the Huguenot Pierre L'Oyseleur, Lord of Villiers. Louise de Coligny, daughter of the murdered Huguenot leader Gaspard de Coligny, married William Hiljainen, who led the Dutch (Calvinist) rebellion against the Spanish (Catholic) regime. As they both spoke French in everyday life, their court church at Prinsenhof in Delft held services in French. The practice has continued to this day. Prinsenhof is one of the 14 active Walloon churches of the Dutch Reformed Church. The links between the Huguenots and the military and political leadership of the Dutch Republic, the House of Orange-Nassau, which existed from the early stages of the Dutch rebellion, helped to support the many early Huguenot settlements in the Dutch Republic. They settled on the Cape of Good Hope in South Africa and in New Netherland in North America.

**Question 0**

When was the Dutch rebellion?

**Question 1**

Who did the Dutch fight against in the Dutch rebellion?

**Question 2**

Which Dutch document condemned the Spanish Inquisition?

**Question 3**

Which leader led the Dutch rebellion and wrote the Apologie?

**Question 4**

What was the religion of the Dutch leader?

**Question 5**

In what year did William the Silent publish his "Apology"?

**Question 6**

What nationality was Pierre L'Oyseleur?

**Question 7**

In which colony was the city of Delft located?

**Question 8**

In what year did the Huguenots begin to settle in South Africa?

**Question 9**

Who was Vilhelm Hiljainen's father?

**Text number 30**

Both before and after the passage of the Nationalisation of Foreign Protestants Act in 1708, an estimated 50,000 Protestant Walloons and Huguenots fled to England, many of whom continued on to Ireland and elsewhere. In relative terms, this was one of the largest waves of immigration of a single ethnic community ever to hit Britain. Andrew Lortie (born André Lortie), a leading Huguenot theologian and writer who led the community deported to London, became famous for his criticism of the Pope and the doctrine of transubstantiation during Mass.

**Question 0**

Which English law made the country more welcoming to the Huguenots?

**Question 1**

When was this nationalisation law passed?

**Question 2**

How many Walloons and Huguenots moved to England and Ireland during this period?

**Question 3**

Who was a famous Huguenot theologian and writer in London?

**Question 4**

Which liturgical belief of the Catholic Church does Lortie openly criticise?

**Question 5**

How many Huguenots fled to England after the Naturalisation of Foreign Protestants Act was passed?

**Question 6**

How many Protestants fled to England before the Naturalisation of Foreign Protestants Act was passed?

**Question 7**

Where was Andrew Lortie originally from?

**Question 8**

In what year was Andrew Lortie born?

**Question 9**

How many Protestant Walloons and Huguenots continued their journey through England and ended up in Ireland?

**Text number 31**

After the French Crown revoked the Edict of Nantes, many Huguenots settled in Ireland in the late 1700s and early 1700s, encouraged by an Act of Parliament concerning the settlement of Protestants in Ireland. Huguenot regiments fought for William of Orange in the Irish Welsh War, for which they were rewarded with land grants and titles, and many of them settled in Dublin. There were important Huguenot settlements in Dublin, Cork, Portarlington, Lisburn, Waterford and Youghal. Smaller settlements, including Killeshandra in County Cavan, contributed to the expansion of flax cultivation and the growth of the Irish flax industry.

**Question 0**

Where were there Huguenot regiments in the Irish war?

**Question 1**

Under which leader did the Huguenots fight in this conflict?

**Question 2**

Which Irish cities had large Huguenot enclaves?

**Question 3**

The Huguenots of Killeshandra and Cavan County expanded what agricultural sector?

**Question 4**

What textile industry did the Huguenots promote in Ireland?

**Question 5**

During which period was the Welsh War fought in Ireland?

**Question 6**

Where was the largest Huguenot settlement in Ireland?

**Question 7**

Which of the major cities in Ireland had the smallest Huguenot population?

**Question 8**

What did the Huguenots who settled in Dublin give?

**Question 9**

What did the Huguenots who settled in Cork give?

**Text number 32**

Prince Louis de Condé and his sons Daniel and Osias agreed with Count Ludwig von Nassau-Saarbrücken to establish a Huguenot community in what is now Saarland in 1604. The Count supported mercantilism and welcomed technically competent immigrants to his country, regardless of their religion. Condés founded a flourishing glassworks that brought prosperity to the principality for many years. Other founding families set up businesses based on textiles and other traditional Huguenot trades in France. The community and its congregation remain active to this day, and descendants of many of the founding families still live in the area. Some members of the community emigrated to the United States in the 1890s.

**Question 0**

Which nobleman helped the Huguenots to settle in Saarland?

**Question 1**

Which count did the prince sign a contract with?

**Question 2**

What business did the nobleman establish with this settlement?

**Question 3**

In which era did some members of this community move to the United States?

**Question 4**

What year was the agreement to allow the Saarland settlement?

**Question 5**

In what year was Prince Louis de Conde born?

**Question 6**

In which year was Ludwig von Nassau-Saarbrucken made Count?

**Question 7**

Who was the father of Count Ludwig von Nassau-Saarbucken?

**Question 8**

In what year did the Huguenots first move to what is now Saarland?

**Text number 33**

Most Huguenot emigrants moved to Protestant European countries such as England, Wales, Scotland, Denmark, Sweden, Switzerland, the Dutch Republic, the Electorates of Brandenburg and Palatinate in the Holy Roman Empire, the Duchy of Prussia, the Channel Islands and Ireland. They also spread beyond Europe to the Dutch colony of the Cape in South Africa, the Dutch East Indies, the Caribbean and several English colonies in North America, as well as to Quebec, where they were accepted and allowed to practice their free religion.

**Question 0**

Which two member states of the Holy Roman Empire took in Huguenot refugees?

**Question 1**

What general religious beliefs were common to the nations that received Huguenot refugees?

**Question 2**

Which region of South Africa accepted Huguenot immigrants?

**Question 3**

Which region of present-day Canada received Huguenot immigrants?

**Question 4**

What made immigration to these colonies attractive?

**Question 5**

To which country did most Huguenots flee France?

**Question 6**

To which nation did Huguenots escape the least from France?

**Question 7**

Which religion prevailed in the Holy Roman Empire?

**Question 8**

What was the largest religion in Sweden?

**Question 9**

What was the largest religion in Quebec?

**Text number 34**

Some disagree with such a double or triple non-French linguistic origin, arguing that for a word to have spread into common use in France, it must have originated in French. According to the Hugues hypothesis, the name originates from Hugues Capet, a French king who reigned long before the Reformation. He was regarded by Gauls and Protestants as a noble man who respected human dignity and life. Janet Gray and other proponents of the hypothesis suggest that the name Huguenote would roughly correspond to little Hugos or those who want a Hugo.

**Question 0**

From which French king might the Huguenot name be descended?

**Question 1**

What is the theory that this king's name is derived from the name of the "Huguenots"?

**Question 2**

Who is a major proponent of this theory?

**Question 3**

What is the theory behind the name "Huguenot"?

**Question 4**

Other theories about the origin of the word can be broadly classified as?

**Question 5**

Who was the first king of France to rule during the Reformation?

**Question 6**

What religion was Hugues Capet?

**Question 7**

What religion was Janet Gray?

**Question 8**

Who was Janet Gray married to?

**Text number 35**

Other predecessors of the Reformed Church included pro-Reformation and Gallican Roman Catholics such as Jacques Lefevre (c. 1455-1536). The Gauls briefly achieved the independence of the French Church on the principle that the Bishop of Rome, a foreign state, could not control the religion of France. During the Protestant Reformation, Lefevre, a professor at the University of Paris, published his French translation of the New Testament in 1523, followed by the entire Bible in French in 1530. William Farel, a student of Lefevre, became the leader of the Swiss Reformation, establishing the Protestant government in Geneva. Jean Cauvin (John Calvin), another student at the University of Paris, also converted to Protestantism. Long after the sect had been suppressed by Francis I, the remaining French Waldensians, who at the time lived mostly in the Luberon region, sought to join William Farel, Calvin and the Reformation, and Olivetan published a French-language Bible for them. The French Confession of 1559 clearly shows a Calvinist influence. Sometime between 1550 and 1580, members of the French Reformed Church began to be commonly referred to as Huguenots.

**Question 0**

Who was a Roman Catholic proponent of the 15th century French reform?

**Question 1**

Where did this reform-minded leader teach?

**Question 2**

When did this leader publish the French Bible?

**Question 3**

Which Swiss Reformation leader was a disciple of Lefevre?

**Question 4**

Which other European Protestant leader studied at the University of Paris?

**Question 5**

In which country did the Gauls originate?

**Question 6**

Which French town was Jacques Lefevre from?

**Question 7**

In what year did John Calvin graduate from the University of Paris?

**Question 8**

In what year did John Calvin become a Protestant?

**Question 9**

Who was one of the most important French Waldensians?

**Text number 36**

In the massacre of 24 August - 3 October 1572, known as the St Bartholomew's Day Massacre, thousands of Huguenots were killed by Catholics in Paris. Similar massacres took place in other cities in the following weeks. The main provincial cities where the massacre took place were Aix, Bordeaux, Bourges, Lyon, Meaux, Orleans, Rouen, Toulouse and Troyes. In Toulouse alone, nearly 3 000 Protestants were slaughtered. The exact number of deaths in the country as a whole is not known. On 23 and 24 August, some 2 000 to 3 000 Protestants were killed in Paris and 3 000 to 7 000 in the French provinces. By 17 September, almost 25 000 protesters had been slaughtered in Paris alone. Outside Paris, the killings continued until 3 October. A pardon granted in 1573 pardoned the perpetrators[1].

**Question 0**

When was the St Bartholomew's Day Massacre?

**Question 1**

Which group killed thousands of Huguenots?

**Question 2**

How many Huguenots were killed in Toulouse?

**Question 3**

When were those responsible for the massacre granted amnesty?

**Question 4**

How many Parisian Protestants were killed by 17 September?

**Question 5**

How many Huguenots were killed in Bordeaux?

**Question 6**

In which French town were around 2000 Huguenots killed?

**Question 7**

How many Huguenots were killed in France in total?

**Question 8**

How many Huguenots were slaughtered in Orleans?

**Question 9**

How many Huguenots were killed in Toulouse?

**Text number 37**

Louis XIV came to the throne in 1643 and became increasingly aggressive in forcing the Huguenots to convert. At first, he sent missionaries, supported by a fund to financially reward converts to Catholicism. Then he imposed punishments, closed the Huguenots' schools and excluded them from popular professions. He escalated the situation and began dragoons, including occupation and looting of Huguenot homes by military troops, in order to forcibly convert the Huguenots. In 1685, he issued the Edict of Fontainebleau, repealing the Edict of Nantes and outlawing Protestantism[1].

**Question 0**

Who became king in 1643?

**Question 1**

How did the new king deal with the Huguenots?

**Question 2**

What was the King's first approach to the Huguenots?

**Question 3**

What did the King do about the education of the Huguenots?

**Question 4**

The practice of occupying and looting Huguenot homes was called?

**Question 5**

In what year did Louis XIV die?

**Question 6**

In what year did Louis XIV start bribing Protestants to convert to Catholicism?

**Question 7**

In what year did Louis XIV begin to ban Protestants from working in certain professions?

**Question 8**

What year was the Edict of Nantes issued?

**Question 9**

What year was Dragonnadit started?

**Text number 38**

New Rochelle, located in Westchester County on the northern shore of Long Island Sound, appeared to be a major Huguenot site in New York. It is said that they landed on the coastal peninsula known as "Bauffet's Point" on Davenport Neck after travelling from England, where they had previously sought refuge from religious persecution four years before the repeal of the Edict of Nantes. With the help of Jacob Leisler, they bought six thousand and one hundred acres of land from John Pell, Lord of the Manor of Pelham. It was named New Rochelle after La Rochelle, their former base in France. A small wooden church was first erected in the community, followed by a second church built of stone. Before the church was erected, the strong men often walked the twenty-three miles, the length of the road between New Rochelle and New York, on Saturday night to attend Sunday services. The church was eventually replaced by a third, Trinity-St. Paul's Episcopal Church, which houses heritage items, including the original bell from the French Huguenot church "Eglise du St. Esperit" on Pine Street in New York City, which is kept as a relic in the tower room. The Huguenot Burial Ground has since been recognised as a historic cemetery, the final resting place of several Huguenot founders, early settlers and prominent citizens from over three centuries.

**Question 0**

In which current county is New Rochelle located?

**Question 1**

Where did the Huguenots originally arrive in New York?

**Question 2**

From whom did the Huguenots buy the land they settled on?

**Question 3**

What French city was New Rochelle named after?

**Question 4**

What is the name of the third permanent Huguenot church in New Rochelle?

**Question 5**

Who named "Bauffet's Point" in Davenport Neck?

**Question 6**

How much land did Mr John Pell of Pelham Manor own in North America in total?

**Question 7**

Whose decision was it to name the new city New Rochelle?

**Question 8**

How far is it from Davenport Neck to New Rochelle?

**Question 9**

What was the name of the first wooden church in New Rochelle?

**Text number 39**

Most of the Huguenot congregations (or individuals) in North America eventually joined other Protestant denominations with more members. The Huguenots quickly assimilated and often married outside their immediate French communities, leading to their assimilation. In many families, their descendants continued to use French first and last names for their children well into the 19th century. The assimilated French participated in the US economy in many ways, particularly as merchants and artisans in the late colonial and early federal period. For example, E.I. du Pont, a former student of Lavoisier, founded the gunpowder factories of Eleutheria.

**Question 0**

How did the Huguenots develop their religious beliefs in the New World?

**Question 1**

How did the Huguenot immigrants assimilate into North American society?

**Question 2**

Who was a major arms manufacturer of Huguenot origin?

**Question 3**

How long did the Huguenots continue to use French names?

**Question 4**

What was the name of du Pont's gunpowder business?

**Question 5**

In which century were the Eleutherian gunpowder factories founded?

**Question 6**

What was the Protestant contribution to the US economy?

**Question 7**

What nationality was Lavoisier?

**Question 8**

How did the Huguenots hold on to some of their religious beliefs over the years?

**Text number 40**

One of the most important Huguenot refugees in the Netherlands was Pierre Bayle. He began teaching in Rotterdam, where he completed and published his multi-volume masterpiece, the Historical and Critical Dictionary. It became one of the 100 foundational texts of the US Library of Congress. Some Huguenot descendants in the Netherlands may have French surnames, although they usually use Dutch first names. Because the Huguenots were early connected with the leadership of the Dutch rebellion and participated in it themselves, some of the Dutch patricians are partly of Huguenot descent. Some Huguenot families have maintained various traditions, such as the feast of St Nicholas, their patron saint, which is similar to the Dutch feast of Sint Nicolaas (Sinterklaas).

**Question 0**

Who was a prominent Huguenot in the Netherlands?

**Question 1**

Where did he start teaching?

**Question 2**

What books did Bayle publish?

**Question 3**

Which books became the core text of which library?

**Question 4**

Who is the patron saint of Huguenots?

**Question 5**

How many months did it take Pierre Bayle to write the multi-volume Historical and Critical Dictionary series?

**Question 6**

How many French surnames are commonly used in the Netherlands?

**Question 7**

Do they celebrate St Nicholas or Sint Nicolas in the Netherlands earlier in the year?

**Question 8**

How many volumes are in the Historical and Critical Dictionary?

**Text number 41**

The French Protestant Church of London was founded by Royal Charter in 1550. It is now located in Soho Square. Huguenot refugees flocked to London's Shoreditch. They established a major weaving industry in and around Spitalfields in east London (see Petticoat Lane and Tenterground). In Wandsworth, their horticultural skills benefited the market gardens of Battersea. The Old Truman Brewery, then known as the Black Eagle Brewery, was established in 1724. The flight of Huguenot refugees from Tours in France took most of the workers from the large silk factories they had built. Some of these immigrants moved to Norwich, which had previously been home to the Walloons. The French added to the existing immigrant population, which at the time made up about a third of the city's population.

**Question 0**

Which early Huguenot church was founded in England?

**Question 1**

When was the charter of this church signed?

**Question 2**

What is the current location of this church?

**Question 3**

Which part of London attracted Huguenot refugees?

**Question 4**

When was Old Truman Brewery founded?

**Question 5**

In what year did Huguenot refugees start moving to London?

**Question 6**

In what year did Black Eagle Brewery change its name to Old Truman Brewery?

**Question 7**

Which Huguenot church was founded in Norwich?

**Question 8**

How much of London's population came from immigrants?

**Question 9**

In what year did Huguenot refugees first settle in Norwich?

**Text number 42**

Around 1685, Huguenot refugees found a safe haven in the Lutheran and reformed states of Germany and Scandinavia. Nearly 50 000 Huguenots settled in Germany, of whom 20 000 were welcomed in Brandenburg-Prussia, where the Elector of Brandenburg and Duke of Prussia, Frederick William, granted them special privileges (Edict of Potsdam) and churches where they could worship (such as the Church of St Peter and Paul, Angermünde). The Huguenots supplied his army with two new regiments: the Altpreußische Infantry Regiments No. 13 (Infantry Regiment Varenne) and 15 (Infantry Regiment Wylich). In addition, 4 000 Huguenots settled in the German regions of Baden, Franconia (Duchy of Bayreuth, Duchy of Ansbach), Hesse-Kassel, the Duchy of Württemberg, the Imperial County of Wetterau, Palatinate and Pfalz-Zweibrücken, the Rhine-Main region (Frankfurt) and the present-day Saarland. 1 500 Huguenots found refuge in Hamburg, Bremen and Lower Saxony. Three hundred refugees found refuge at the court of Duke George William of Brunswick-Lüneburg in Celle.

**Question 0**

Which Protestant religions made the northern European provinces safe for Huguenot immigration?

**Question 1**

In which regions of northern Europe were these religions practised?

**Question 2**

By which declaration were the Huguenots granted special rights in Brandenburg?

**Question 3**

What were Frederick William's double names?

**Question 4**

What military impact did Huguenot immigration have on Frederick's army?

**Question 5**

In what year was the AltpreuBisschen Infantry Regiment No 13 founded?

**Question 6**

In what year was Frederick William appointed Elector of Brandenburg?

**Question 7**

How many Huguenots settled in Baden in Germany?

**Question 8**

How many Huguenots settled in Lower Saxony in Germany?

**Question 9**

How many men were in AltpreusBische infantry No 15?

**Text number 43**

Frederick William, the Elector of Brandenburg, invited the Huguenots to live in his kingdom, and several of their descendants rose to prominence in Prussia. Several prominent German military, cultural and political figures were ethnic Huguenots, including the poet Theodor Fontane, the hero of the Battle of Tannenberg in World War I, General Hermann von François, Luftwaffe general and fighter ace Adolf Galland, Luftwaffe pilot ace Hans-Joachim Marseille and the famous submarine captain Lothar von Arnauld de la Perière. The last Prime Minister of the (East) German Democratic Republic, Lothar de Maizière, is also a descendant of a Huguenot family, as is Thomas de Maizière, Minister of the Interior of the Federal Republic of Germany.

**Question 0**

Which German ruler called for Huguenot immigration?

**Question 1**

Which German poet was descended from the Huguenots?

**Question 2**

Which German general and fighter pilot was related to the Huguenots?

**Question 3**

Who was the last prime minister of East Germany?

**Question 4**

What role does Thomas de Maiziere play in the German cabinet?

**Question 5**

Who is one of the descendants of Frederick Williams?

**Question 6**

Who is a descendant of General Hermann von François?

**Question 7**

Which side won the Battle of Tannenberg in the First World War?

**Question 8**

What was the ethnic background of Frederick William, the elector of Brandenburg?

**Question 9**

Who was one of Lothar de Maiziers predecessors?

**Document number 448**

**Text number 0**

Steam engines are external combustion engines in which the combustion fluid is separated from the combustion products. Non-combustion heat sources such as solar, nuclear or geothermal energy can also be used as heat sources. The thermodynamic ideal cycle used to analyse this process is called the Rankine cycle. In this cycle, water is heated and converted into steam in a high-pressure boiler. When the steam is expanded by pistons or turbines, mechanical work is generated. The lower pressure steam is condensed and pumped back into the boiler.

**Question 0**

Besides geothermal and nuclear, what is a significant non-fired heat source?

**Question 1**

Which ideal thermodynamic cycle is used to analyse the process by which steam engines operate?

**Question 2**

What does water become when it is heated in the Rankine cycle?

**Question 3**

At what pressure is water heated in the Rankine cycle?

**Question 4**

What kind of engines are steam engines?

**Question 5**

What is a major source of combustion heat besides geothermal and nuclear?

**Question 6**

What is the ideal thermodynamic cycle to analyse the process by which solar engines operate?

**Question 7**

What does nuclear power become in the Rankine cycle when it is heated?

**Question 8**

At what pressure is nuclear power heated in the Rankine cycle?

**Question 9**

What kind of engines are solar engines?

**Text number 1**

The first commercially successful real engine capable of generating power and transferring it to a machine was the atmospheric engine invented by Thomas Newcomen around 1712. It was an improvement on Savery's steam pump, which used a piston proposed by Papini. Newcomen's engine was relatively inefficient and was mostly used to pump water. It worked by creating a partial vacuum by condensing the steam under the piston in the cylinder. It was used to drain mines to depths that had hitherto been impossible, and also to produce reusable water to run water wheels in factories far from a suitable 'head'. The water that went over the wheel was pumped back into a storage tank above the wheel.

**Question 0**

What was the first real engine to be commercially successful?

**Question 1**

Who was the inventor of the atmospheric engine?

**Question 2**

Around what year was the atmospheric engine invented?

**Question 3**

What did Savery come up with?

**Question 4**

Who invented the piston?

**Question 5**

What was the first real vacuum to be commercially successful?

**Question 6**

Who was the inventor of the vacuum?

**Question 7**

Around what year was the vacuum engine developed?

**Question 8**

What was invented for the storage tank?

**Question 9**

Who conceptualised the vacuum?

**Text number 2**

Richard Trevithick built the first full-scale working railway steam locomotive in the United Kingdom, and on 21 February 1804 the world's first railway journey was made when Trevithick's unnamed steam locomotive carried a train along the railway line from the Pen-y-darren Railway near Merthyr Tydfil to the Pen-y-darren Works at Abercynon in South Wales. The design featured several important innovations, including the use of high-pressure steam, which reduced the weight of the locomotive and increased its efficiency. Trevithick visited Newcastle later in 1804, and the North East of England Mines Railway became a leading centre for steam locomotive experimentation and development.

**Question 0**

In which country was the first fully-fledged steam locomotive for railways invented?

**Question 1**

On what day was the world's first train journey made?

**Question 2**

Where did the world's first railway journey end?

**Question 3**

In which UK state is Merthyr Tydfil located?

**Question 4**

In which geographical part of Wales is Abercynon located?

**Question 5**

In which country was a fully functioning railway steam plant first invented?

**Question 6**

On what day was the first rail journey made in England?

**Question 7**

Where did England's first rail journey end?

**Question 8**

Where in the United Kingdom is Trevithick located?

**Question 9**

In which geographical part of England is Abercynon located?

**Text number 3**

The Rankine cycle and most practical steam engines have a water pump to circulate or replenish boiler water so that they can be used continuously. Multi-stage centrifugal pumps are generally used in municipal and industrial boilers, but other types of pumps are also used. Another method of feeding low-pressure boiler feed water is an injector, which uses a steam jet, usually fed from the boiler. Injectors became popular in the 1850s, but are no longer widely used, except, for example, in steam locomotives.

**Question 0**

What device is used to recycle boiler water in most steam engines?

**Question 1**

What kind of pumps are typically used in industrial boilers?

**Question 2**

In which decade were injectors widely used in steam engines?

**Question 3**

What is the major use of spray nozzles today?

**Question 4**

What are injectors used to deliver?

**Question 5**

What device is used to circulate boiler water in most jet engines?

**Question 6**

What types of pumps are typically used in jet engines?

**Question 7**

In which decade were injectors widely used in jet engines?

**Question 8**

What is the major application of jet engines today?

**Question 9**

What are jet engines used for?

**Text number 4**

The logical extension of the combined engine described above is to split the expansion into even more stages to increase efficiency. The result is a multiple expansion engine. Such motors use either three or four expansion stages and are called triple and quadruple expansion motors respectively. These engines use several cylinders of progressively increasing diameter. The cylinders are designed so that the work is divided into equal parts for each expansion stage. As with a double expansion engine, if space is limited, two smaller cylinders can be used for the low pressure stage. In multi-expansion engines, the cylinders were typically arranged in a row, but various other configurations were also used. The Yarrow-Schlick-Tweedy balancing system (Yarrow-Schlick-Tweedy) was used in the late 19th century in some triple expansion marine engines. Y-S-T engines split the low-pressure expansion stages between two cylinders, one at each end of the engine. This allowed the crankshaft to be better balanced, resulting in a smoother and more responsive engine that ran with less vibration. This made the 4-cylinder triple expansion engine popular on large passenger ships (such as the Olympic class), but eventually it was replaced by a virtually vibration-free turbine engine.

**Question 0**

How many expansion stages does a triple expansion motor use?

**Question 1**

What are engines with four expansion stages called?

**Question 2**

In which century was the Yarrow-Schlick-Tweedy balancing system used?

**Question 3**

Which engines used the Yarrow-Schlick-Tweedy balancing system?

**Question 4**

Which class of vessel is an example of a large passenger ship?

**Question 5**

How many expansion stages does a crankshaft engine use?

**Question 6**

What are engines with four expansion cylinders called?

**Question 7**

In which century was the Olympic balance system used?

**Question 8**

Which engines used the Olympic balancing system?

**Question 9**

Which class of vessel is an example of a small passenger vessel?

**Text number 5**

In the 1840s and 50s, attempts were made to solve this problem with various patent valve gearboxes, which had a separate variable cut-off expansion valve behind the main slide valve; the latter usually had fixed or limited cut-off. The combined system corresponded reasonably well to ideal events, but friction and wear increased, and the mechanism was usually complex. A common compromise solution has been to achieve circulation by lengthening the valve's rubbing surfaces so that they overlap the inlet orifice, allowing the exhaust side to remain open longer after the inlet cut-off has occurred. This method has since been found generally satisfactory for most purposes and allows the use of the simpler Stephenson, Joy and Walschaerts movements. Corliss and later valve gears had separate inlet and exhaust valves, controlled by trigger mechanisms or cam mechanisms profiled for ideal events; most of these gears never succeeded outside the stationary market due to various other problems such as leaks and more sensitive mechanisms.

**Question 0**

Which types of gear use separate inlet and outlet valves to provide ideal events?

**Question 1**

Besides Stephenson and Walschaerts, what is an example of a simple movement?

**Question 2**

How is a round trip achieved to overlap with an access side port?

**Question 3**

Which types of gears, together with piston valve gears, used separate inlet and outlet shut-offs to achieve ideal events?

**Question 4**

What is an example of a complex exhaust pipe besides Stephenson and Walschaerts?

**Question 5**

How can the tour be made to overlap with the stationary market gate?

**Question 6**

When has there been an attempt to win over stationary marketplaces?

**Text number 6**

The crown of the boiler firebox may contain lead fuses. If the water level drops so that the temperature in the firebox crown rises significantly, the lead will melt and steam will escape, alerting operators who can then extinguish the fire manually. With the exception of the smallest boilers, steam escape has little effect on extinguishing the fire. The plugs are also too small in area to reduce the steam pressure significantly, causing the boiler to lose pressure. If they were any larger, the amount of escaping steam would in itself endanger the crew.

**Question 0**

What sometimes occurs in the crown of a boiler firebox?

**Question 1**

What happens to the fuses if the water level in the boiler drops?

**Question 2**

What happens after the lead melts?

**Question 3**

What can operators do after receiving a warning about a steam escape?

**Question 4**

What is likely to prevent steam from escaping in all but the smallest boilers?

**Question 5**

What is sometimes present in the crown of the firebox?

**Question 6**

What happens to lead fuses if the water level in a fire drops?

**Question 7**

What happens after the furnace melts?

**Question 8**

What can operators do after receiving a warning that a fire hydrant is about to escape?

**Question 9**

What is unlikely to exit the firebox in all but the smallest boilers?

**Text number 7**

In 1781, James Watt patented a steam engine that produced continuous rotary motion. Watt's ten-horsepower engines made it possible to use a wide range of production machines. The engines could be placed anywhere where water and coal or wood fuel were available. By 1883, engines capable of producing 10 000 horsepower had become possible. The stationary steam engine was a key part of the industrial revolution, allowing factories to be located where hydroelectric power was not available. Newcomen and Watt's atmospheric engines were large compared to the power they produced, but high-pressure steam engines were light enough to be used in vehicles such as traction engines and railway locomotives.

**Question 0**

Who patented the steam engine in 1781?

**Question 1**

What kind of motion did Watt's steam engine produce continuously?

**Question 2**

How many horsepower was Watt's engine?

**Question 3**

From what year were 10,000 horsepower engines available?

**Question 4**

What was an important part of the steam engine?

**Question 5**

Who patented the steam engine in 1883?

**Question 6**

What kind of motion did the Newcomen steam engine produce continuously?

**Question 7**

How many horsepower was the Newcomen engine?

**Question 8**

From what year were 1700 horsepower engines available?

**Question 9**

What was the high-pressure engine an important part of?

**Text number 8**

The history of the steam engine dates back to the first century AD; the first recorded primitive steam engine is the aeolipile described by the Greek mathematician Hero of Alexandria. Like the aeolipile, the few steam-powered 'engines' known in the following centuries were mainly experimental devices used by inventors to demonstrate the properties of steam. Taqi al-Din described a rudimentary steam turbine device in 1551 and Giovanni Branca in 1629. In 1606, Jerónimo de Ayanz y Beaumont obtained a patent for fifty steam-powered inventions, including a water pump to drain flooded mines. Denis Papin, a Huguenot refugee, did useful work on the steam engine in 1679 and first used a piston to lift weights in 1690.

**Question 0**

In which century did the history of the steam engine begin?

**Question 1**

Who came up with the idea of the aeolipil?

**Question 2**

What was the nationality of the hero of Alexandria?

**Question 3**

Who described the steam turbine in 1629?

**Question 4**

In what year did Jerónimo de Ayanz y Beaumont patent the water pump for mine drainage?

**Question 5**

In which century did the history of the steam boiler begin?

**Question 6**

Who invented the piston?

**Question 7**

What was the nationality of the Hero of Ayanz?

**Question 8**

Who described the steam turbine in 1690?

**Question 9**

In what year did Jeronimo de Ayanz y Beaumont patent the water pump to dehydrate patients?

**Text number 9**

Combined engines became common in the late 19th century. Combined engines extracted steam sequentially into larger cylinders to accommodate larger volumes at lower pressure, improving efficiency. These stages were called expansion, and double and triple expansion engines were common, especially in shipping, where efficiency was important to reduce the weight of coal being transported. Steam engines remained the dominant power source until the early 20th century, when advances in the design of electric motors and internal combustion engines gradually led to the displacement of reciprocating steam engines and the reliance of 20th century shipping on steam turbines.

**Question 0**

What types of engines became common in the late 19th century?

**Question 1**

What are the stages of a compound engine called?

**Question 2**

In which sector were double and triple engines common?

**Question 3**

Which product in particular was transported on vessels with double and triple expansion engines?

**Question 4**

Which power sources overtook steam engines alongside electric motors in the 20th century?

**Question 5**

What types of engines became common in the late 20th century?

**Question 6**

What are the phases of an efficiency motor called?

**Question 7**

In which sector were double and triple extensions common?

**Question 8**

In particular, what product was carried on vessels equipped with double and triple replacement engines?

**Question 9**

Which sources of power overtook electric motors in the 20th century?

**Text number 10**

The last major development in steam engines was the use of steam turbines in the late 19th century. Steam turbines are generally more powerful than reciprocating steam engines of the piston type (with power outputs of over a hundred horsepower), have fewer moving parts and produce rotary power directly rather than through a connecting rod system or similar means. Steam turbines virtually replaced piston engines in power generation plants in the early 1900s, with their advantages of efficiency, higher speed suitable for generator use and smooth rotation. Today, most electrical energy is generated by steam turbines. In the United States, 90% of electricity is generated in this way, using a variety of heat sources. Steam turbines were widely used to power large ships for most of the 20th century.

**Question 0**

Which device represented the last major development of the steam engine?

**Question 1**

When were steam turbines introduced in the 1800s?

**Question 2**

Above what horsepower are steam turbines generally more efficient than reciprocating engines?

**Question 3**

How much of the electricity in the US is produced by steam turbines?

**Question 4**

What type of electricity is most produced by steam turbines today?

**Question 5**

Which device represented the last major development of the generator?

**Question 6**

At what point in the 1800s were generators introduced?

**Question 7**

For power outputs above what horsepower, steam turbines are generally more efficient than reciprocating piston generators?

**Question 8**

How much of the electricity in the US is generated by generators?

**Question 9**

What kind of energy is currently produced from heat sources?

**Text number 11**

The heat needed to boil water and produce steam can be obtained from various sources, most commonly by burning combustible materials with an appropriate amount of air in an enclosed space (variously called a combustion chamber or firebox). In some cases, a nuclear reactor, geothermal energy, solar energy or waste heat from an internal combustion engine or industrial process is used as a heat source. In model or toy steam engines, the heat source may be an electric heating element.

**Question 0**

What is the usual heat source for boiling water in a steam engine?

**Question 1**

What is the other name for the space where combustible material is burned in the engine, besides the combustion chamber?

**Question 2**

What other energy sources could be used to produce steam engine heat in addition to nuclear, geothermal and internal combustion engine waste heat?

**Question 3**

What type of heating element is often used in toy steam engines?

**Question 4**

What is the usual heat source for boiling water in an industrial process?

**Question 5**

What is the other name for a space, besides a furnace, where combustible material is burnt in an electric heating element?

**Question 6**

What type of heating element is often used in toy combustion engines?

**Question 7**

What energy, apart from nuclear, geothermal and waste heat, could be used to produce heat for the furnace?

**Question 8**

What type of heating element is often used in sealed space engines?

**Text number 12**

The most useful tool for analysing steam engine performance is the steam engine indicator. Early versions were in use as early as 1851, but the most successful indicator was developed by Charles Richard for Charles Porter, the inventor and manufacturer of the high-speed engine, and introduced at the London Exhibition in 1862. The steam engine indicator traces on paper the pressure in the cylinder throughout the cycle, allowing various problems to be detected and the horsepower developed to be calculated. Engineers, mechanics and insurance inspectors used it routinely. The engine gauge can also be used in internal combustion engines. See the picture of the indicator diagram below (under Engine types).

**Question 0**

What equipment is used to test the performance of a steam engine?

**Question 1**

In what year was the steam engine detector first used?

**Question 2**

Which company developed the most successful steam engine indicator?

**Question 3**

Who developed the successful steam engine indicator for Charles Porter?

**Question 4**

Where was Charles Porter's steam locomotive detector on display?

**Question 5**

What tool is used to examine the performance of the chart?

**Question 6**

In what year were steam engines first used?

**Question 7**

Which company developed the most successful steam engine?

**Question 8**

Who developed the successful steam engine for Charles Porter?

**Question 9**

Where was Charles Porter's steam engine demonstrated?

**Text number 13**

In the two-cylinder combinations used in rail transport, the pistons are coupled to the crankshaft at an angle of 90° to each other (quarter), as in simple two-cylinder combinations. When a dual-expansion group is duplicated to form a four-cylinder combination, the individual pistons in the group are usually balanced at an angle of 180°, placing the groups at 90° to each other. In one case (the first type of Vauclain combination), the pistons operated in phase and shared a common crosshead and crankshaft, again set at a 90° angle as in a two-cylinder engine. In the three-cylinder combination model, the LP crank was either set at 90° and the HP crank at 135° to the other two, or in some cases all three crankshafts were set at 120° [citation needed].

**Question 0**

To what extent are the pistons of a twin-cylinder combination in contact with the cranks?

**Question 1**

To what extent were the individual pistons balanced in the 4-cylinder combined engine?

**Question 2**

At what angle were the pistons positioned in relation to each other in a 4-cylinder combination?

**Question 3**

To what extent are the pistons of a two-cylinder compound connected to the pistons?

**Question 4**

In a 4-cylinder combined cycle engine, to what extent were the individual crankshafts balanced?

**Question 5**

At what angle were the piston groups placed in relation to each other in a 4-cylinder crankshaft?

**Question 6**

What happens when a double extension crankshaft is duplicated?

**Question 7**

What will happen to the railways in the case of the first Vauclain type of combination?

**Text number 14**

In most reciprocating engines, the direction of steam flow changes with each stroke (counterflow), with steam entering and leaving the cylinder through the same orifice. A complete engine cycle takes one crankshaft revolution and two piston strokes; the cycle also includes four events - intake, expansion, exhaust and compression. These events are controlled by valves, often operating in a steam chamber adjacent to the cylinder; the valves distribute steam by opening and closing steam ports at the head(s) of the cylinder(s), and are controlled by a valve train, of which there are many types[citation needed].

**Question 0**

What is the term for reversing the flow of steam in a reciprocating engine after each stroke?

**Question 1**

How many piston strokes occur in an engine cycle?

**Question 2**

How many crankshaft revolutions are there in an engine cycle?

**Question 3**

How many events are there in an engine cycle?

**Question 4**

What is an engine cycle event besides intake, exhaust and compression?

**Question 5**

What is the term for reversing the flow of steam in a press after each stroke?

**Question 6**

How many piston strokes occur in an exhaust cycle?

**Question 7**

How many crankshaft revolutions are there in a cylinder cycle?

**Question 8**

How many events occur in a vapour cycle?

**Question 9**

What is the vapour cycle event besides intake, exhaust and compression?

**Text number 15**

Uniflow engines are designed to overcome the problems caused by the conventional counterflow cycle, where exhaust vapour passing by during each stroke cools the port and cylinder walls, while the hotter incoming supply vapour wastes some of its energy to return to operating temperature. The goal of single-flow is to correct this deficiency and improve efficiency by providing an extra gap that the piston leaves empty at the end of each stroke, allowing steam to flow in only one direction. In this way, the efficiency of the single expansion uniflow engine is equivalent to that of conventional compound engines, with the added benefit of improved performance at part load. For smaller engines, below 1,000 hp, the efficiency is comparable to that of turbines. However, the thermal expansion gradient produced by single-flow engines along the cylinder wall poses practical difficulties [Reference ]. A quasi-turbine is a single-flow rotary steam engine in which steam is drawn in at hot regions and exhausted at cold regions.

**Question 0**

What is the name of a single-flow motor that takes in steam when hot and removes it when cold?

**Question 1**

The Uniflow engine is trying to fix the problem, which cycle is it occurring during?

**Question 2**

Which part is added to the uniflow motor to solve the problem in a counterflow cycle?

**Question 3**

What is the name of a single-flow machine that takes steam in hot areas and removes it bypass?

**Question 4**

Where in the cycle is the problem that the expansion gradient is trying to fix?

**Question 5**

What fraction is added to the expansion gradient to solve the problem in a counterflow cycle?

**Question 6**

How do you try to overcome the difficulties caused by gradient performance?

**Question 7**

What is the objective of the additional attack?

**Text number 16**

The oscillating cylinder steam engine is a variation of the simple expansion steam engine, which does not require valves to direct steam into and out of the cylinder. Instead of valves, the entire cylinder rocks or oscillates so that one or more holes in the cylinder are aligned with holes in the fixed gate surface or articulated shaft. These motors are mainly used in toys and miniature models because of their simplicity, but they have also been used in full-size working machines, mainly in ships, where their small size is appreciated.

**Question 0**

What type of steam engine does not need valves to control the steam?

**Question 1**

What is another term for joint fixation?

**Question 2**

Where are vibrating cylinder steam engines typically used alongside toys?

**Question 3**

Which full-size vehicles sometimes use oscillating cylinder steam engines?

**Question 4**

What kind of steam engine does not need valves to control the engines?

**Question 5**

What is another term for the port side?

**Question 6**

Where, besides toys, are vibrating cylinder gate surfaces typically used?

**Question 7**

In which vehicles are full-size engines sometimes used with oscillating cylinder heads?

**Question 8**

What is a variation of a simple extension joint installation?

**Text number 17**

The Rankine cycle can operate as a closed-cycle system, where the working fluid is continuously recycled, or it can be an open-cycle system, where exhaust gas vapour is discharged directly into the atmosphere and the boiler is fed from a separate water source. Water is usually chosen as the fluid because of its favourable properties, such as non-toxicity and non-reactivity, abundance, low cost and thermodynamic properties. Mercury is the working fluid of a mercury-carbon turbine. Low boiling hydrocarbons can be used in the binary cycle.

**Question 0**

What happens to the fluid in the closed loop?

**Question 1**

What kind of system emits exhaust fumes into the atmosphere?

**Question 2**

What working fluid is used in a mercury-carbon turbine?

**Question 3**

What is a typical steam engine working fluid?

**Question 4**

What happens to the working fluid in the chemical system?

**Question 5**

What kind of system discharges the exhaust steam into the boiler?

**Question 6**

What working fluid is used in the mercury cycle?

**Question 7**

What is the typical working fluid of a steam turbine?

**Question 8**

What kind of fluid can the boiler circuit work as?

**Text number 18**

The efficiency of the Rankine cycle is usually limited by the machining fluid. Without the pressure reaching a supercritical level, the temperature range over which the cycle can operate is quite small; in steam turbines, the turbine inlet temperature is typically 565 °C (the creep limit for stainless steel) and the condenser temperature is around 30 °C. It is therefore important that steam turbines are kept at high temperatures. Thus, the theoretical Carnot efficiency is about 63 %, while the actual efficiency of a modern coal-fired power plant is 42 %. Because of this low turbine inlet temperature (compared to a gas turbine), the Rankine cycle is often used as the base cycle in combined cycle gas turbine power plants[1].

**Question 0**

What limits the efficiency of the Rankine cycle?

**Question 1**

What is the input temperature of a steam turbine in degrees Celsius?

**Question 2**

What is the creep limit of 565 °C?

**Question 3**

What is the approximate temperature of the turbine condenser?

**Question 4**

What is the theoretical Carnot efficiency of a turbine?

**Question 5**

What limits the temperatures in the Rankine cycle?

**Question 6**

What is the input temperature of a Rankine turbine turbine in degrees Celsius?

**Question 7**

What is the creep limit of 63 degrees Celsius?

**Question 8**

What is the approximate temperature of the condenser in stainless steel?

**Question 9**

What is the theoretical Carnot efficiency of stainless steel?

**Text number 19**

Steam engines can be said to have been the driving force behind the Industrial Revolution, and were widely used commercially to power machinery in factories, mills and mines, to power pumping stations and to power transport equipment such as rail locomotives, ships, steamships and road vehicles. Their use in agriculture increased the land available for cultivation. Steam-powered agricultural tractors, motorcycles (without much success) and even cars like the Stanley Steamer once existed.

**Question 0**

What equipment has been seen as the driving force behind the industrial revolution?

**Question 1**

In addition to road vehicles, locomotives and ships, which vehicles used steam engines during the industrial revolution?

**Question 2**

What is an example of a steam-powered car?

**Question 3**

In which industrial plants was steam used to drive machinery, besides mills and mines?

**Question 4**

What did the use of steam engines in agriculture lead to?

**Question 5**

What equipment has been considered the driving force behind cultivation?

**Question 6**

In addition to road vehicles, locomotives and ships, which vehicles used steam engines during cultivation?

**Question 7**

What is an example of a road vehicle?

**Question 8**

In which industrial sites did steam lead to farming alongside mills and mines?

**Question 9**

What led to the use of motorcycles in agriculture?

**Text number 20**

Trevithick continued his own experiments with three locomotives, ending with the Catch Me Who Can locomotive of 1808. Just four years later, Matthew Murray's successful twin-cylinder locomotive Salamanca was introduced as a rack-and-pinion locomotive with edgeways on the Middleton Railway. In 1825, George Stephenson built Locomotion for the Stockton and Darlington Railway. This was the world's first public steam railway, and in 1829 he built The Rocket, which entered and won the Rainhill Trials. The Liverpool and Manchester Railway opened in 1830, using steam power exclusively for both passenger and freight trains.

**Question 0**

What was the name of the locomotive that debuted in 1808?

**Question 1**

Who designed Salamanca?

**Question 2**

What type of locomotive was the Salamanca?

**Question 3**

Which railway line was Salamanca used on?

**Question 4**

On which railway line did Stephenson build a locomotive in 1825?

**Question 5**

What was the name of the locomotive that debuted in 1825?

**Question 6**

Who designed Salamanca?

**Question 7**

What type of locomotive was Darlington?

**Question 8**

On which railway was Darlington used?

**Question 9**

On which railway did Murray build a locomotive in 1825?

**Text number 21**

In 1804, British engineer Arthur Woolf invented a method to reduce this heating and cooling and patented Woolf's high-pressure compound engine in 1805. In a compound engine, high-pressure steam from a boiler is expanded in a high-pressure cylinder (HP cylinder) and then fed into one or more subsequent low-pressure cylinders (LP cylinder). Complete expansion of the steam now takes place in several cylinders, and because the expansion is now less in each cylinder, the steam loses less heat in each cylinder. This reduces the amount of heating and cooling of the cylinders, increasing engine efficiency. By staggering the expansion across multiple cylinders, torque variation can be reduced. Getting the same work out of low pressure steam requires a larger cylinder volume because the steam volume is larger. Therefore, the diameter and often the stroke volume of low-pressure cylinders is increased, resulting in larger cylinders.

**Question 0**

Who patented the high-pressure compound engine in 1805?

**Question 1**

What nationality was Arthur Woolf?

**Question 2**

What is reduced when expansion is staggered over several cylinders?

**Question 3**

What must be larger to achieve the same work with low-pressure steam?

**Question 4**

Who patented the high-pressure compound engine in 1804?

**Question 5**

What nationality was Arthur Smith?

**Question 6**

What is reduced when expansion is staggered in a single cylinder?

**Question 7**

What needs to be larger to get the same power out of lower pressure cooling?

**Question 8**

Who patented the Woolf cooling cylinder?

**Text number 22**

The main use of steam turbines is for power generation (in the 1990s, steam turbines accounted for around 90% of world electricity generation), but the recent large-scale use of large gas turbine units and typical combined cycle power plants has led to a reduction in this share to 80% for steam turbines. In power generation, the high rotational speed of turbines is very similar to that of modern electric generators, as they are typically directly coupled to the turbines that drive them. In marine applications (first on the Turbinia), steam turbines with reduction gearing (although on the Turbinia the turbines are directly coupled to the propellers without reduction gearing) dominated the propulsion of large ships throughout the late 20th century, being more efficient (and requiring much less maintenance) than reciprocating steam engines. In recent decades, reciprocating diesel engines and gas turbines have almost completely replaced steam propulsion in marine applications.

**Question 0**

What proportion of electricity was produced by steam turbines in the 1990s?

**Question 1**

Which marine engines were less efficient than steam turbines?

**Question 2**

Which engines, along with diesel engines, have overtaken steam engines as marine propulsion?

**Question 3**

What engines were used to propel ships for most of the 20th century?

**Question 4**

What gearbox was used in steam turbine engines in the 20th century?

**Question 5**

What percentage of electricity was generated by power plants in the 1990s?

**Question 6**

Which marine engines were less efficient than gas turbines?

**Question 7**

Which engines, along with diesel engines, have overtaken steam engines for gas operation?

**Question 8**

What engines were used to power power power stations for most of the 20th century?

**Question 9**

Which gearbox was used in steam turbine engines until the 1990s?

**Text number 23**

The rank cycle is the thermodynamic basis of the steam engine. The cycle is a combination of components, typically used for simple power generation, that exploits water phase change (boiling water produces steam, condensing exhaust steam produces liquid water) to create a practical heat and power conversion system. The heat is fed externally into a closed loop, where part of the added heat is converted into work and the waste heat is removed in a condenser. The Rankine cycle is used in almost all steam power generation applications. In the 1990s, the Rankine steam cycle produced about 90% of all the electricity used worldwide, including almost all solar, biomass, coal and nuclear power plants. It is named after the Scottish polymath William John Macquorn Rankine.

**Question 0**

What is the thermodynamic basis of a steam engine?

**Question 1**

What happens to waste heat in the Rankine cycle?

**Question 2**

In which decade did the Rankine cycle produce 90% of electricity?

**Question 3**

In addition to solar, coal and nuclear power plants, what other types of plants use the Rankine process?

**Question 4**

What is William Rankine's nationality?

**Question 5**

What is the thermodynamic basis of exhaust gas?

**Question 6**

What happens to waste heat from water?

**Question 7**

In which decade was the Rankine cycle used to create 90% of engine components?

**Question 8**

What uses the thermal process besides solar, coal and nuclear power?

**Question 9**

What is William Jones' nationality?

**Text number 24**

The historical measure of a steam engine's energy efficiency was its "power". Watt first introduced the term "power" to indicate how much more efficient his engines were than Newcomen's earlier models. Duty is the amount of working weight produced by burning one bushel (94 pounds) of coal. The best examples of Newcomen's designs had a power of about 7 million, but most were closer to 5 million. Watt's original low-pressure models were capable of producing up to 25 million work-rates, but averaged about 17 million. This was a threefold improvement over the average Newcomen model. Early Watt engines with high-pressure steam improved this figure to 65 million.

**Question 0**

How was the efficiency of a steam engine usually assessed?

**Question 1**

Who invented the concept of steam engine duty?

**Question 2**

What is the weight of the carbon buffer in kilograms?

**Question 3**

What was the ideal function of the Newcomen engine?

**Question 4**

What was the average power of a low-pressure Watt motor?

**Question 5**

How was the efficiency of the concept engine usually assessed?

**Question 6**

Who invented the concept of the concept engine obligation?

**Question 7**

How much do bumper engines weigh in kilograms?

**Question 8**

What was the ideal role of a concept engine?

**Question 9**

What was the average utilisation of the concept engine?

**Text number 25**

Piston-engine steam engines remained the dominant power source until the early 20th century, when advances in the design of electric motors and internal combustion engines gradually led to steam engines displacing commercial piston-engine steam engines and steam turbines becoming the dominant source of electricity generation. Given that most of the world's electricity is generated by turbine-type steam engines, the "steam age" continues, with energy levels much higher than at the turn of the 19th century.

**Question 0**

What types of engines became popular in power generation after piston steam engines?

**Question 1**

Which types of steam engines produced the most power until the early 1900s?

**Question 2**

Which steam engine generates the most electricity in the world today?

**Question 3**

What types of engines replaced electric motors alongside reciprocating steam engines?

**Question 4**

What types of engines became popular in electricity generation after electric motors?

**Question 5**

Which types of electric motors produced the most power until the early 1900s?

**Question 6**

What kind of electric motor generates the most electricity in the world today?

**Question 7**

What types of engines replaced turbines alongside electric motors?

**Question 8**

What will continue to happen to energy levels much after the turn of the 20th century?

**Text number 26**

The first commercial steam-powered device was the water pump, developed by Thomas Savery in 1698. It used condensing steam to create a vacuum, which was used to raise water from below, and then used steam pressure to raise the water higher. Small engines were efficient, but larger models were problematic. They had a limited lift height and were prone to boiler explosions. The engine was used to some extent in mines, pumping stations and to feed water wheels used to power textile machinery. An attractive feature of the Savery engine was its low price. Bento de Moura Portugal introduced an ingenious improvement to the Savery's design, which was intended to 'make it work by itself', as John Smeaton described it in the Philosophical Transactions of 1751. It was produced until the late 1700s. One engine was still known to be working in 1820.

**Question 0**

Who developed the first commercial steam-powered appliance?

**Question 1**

What was the first commercially used steam-powered device?

**Question 2**

What year was the first commercial steam-powered device invented?

**Question 3**

Who fixed Savery's water pump?

**Question 4**

Who wrote about Savery's water pump in the 1751 Philosophical Transactions?

**Question 5**

Who developed the first commercial motorised device?

**Question 6**

What was the first commercially used textile device?

**Question 7**

In what year was the first commercial textile device invented?

**Question 8**

Who fixed the Smeaton water pump?

**Question 9**

Who wrote about Smeaton's water pump in the Philosophical Transactions of 1751?

**Text number 27**

Around 1800, Richard Trevithick and in 1801 Oliver Evans introduced high-pressure steam engines; Trevithick received a patent for his high-pressure steam engine in 1802. These engines were much more powerful in cylinder size than earlier engines and could be made small enough for transport applications. Subsequently, technological developments and improvements in manufacturing techniques (partly as a result of the introduction of the steam engine) led to the design of more efficient engines, which could be smaller, faster or more powerful depending on the application.

**Question 0**

Who invented the high-pressure steam engine around 1800?

**Question 1**

Who created an engine using high-pressure steam in 1801?

**Question 2**

In what year did Richard Trevithick patent his device?

**Question 3**

High-pressure steam engines were so small that they could be used in which application?

**Question 4**

What were steam engines used for?

**Question 5**

Who invented the high-pressure power source around 1800?

**Question 6**

Who created an engine for transport applications in 1801?

**Question 7**

In what year did Oliver Evans patent his device?

**Question 8**

High-pressure power sources were so small that they could be used in which application?

**Question 9**

What manufacturing techniques were used as a source?

**Text number 28**

Although the reciprocating steam engine is no longer in widespread commercial use, several companies are exploring or exploiting the engine's potential as an alternative to internal combustion engines. The Swedish company Energiprojekt AB has made progress in the use of modern materials to harness the power of steam. Energiprojekt's steam engine has an efficiency of around 27-30% for high-pressure engines. It is a single-stage, 5-cylinder engine (no combination) using superheated steam, and consumes about 4 kg of steam per kilowatt-hour [not mentioned in citation].

**Question 0**

Which modern company has worked specifically on a steam engine using modern materials?

**Question 1**

Where is Energiprojekt AB located?

**Question 2**

How many cylinders does the Energiprojekt AB engine have?

**Question 3**

How many kilograms of steam per kilowatt-hour does Energiprojekt AB's engine use?

**Question 4**

What percentage of the efficiency of a high-pressure engine has been achieved by Energiprojekt AB's engine?

**Question 5**

Which modern company has worked specifically on the internal combustion engine using modern materials?

**Question 6**

What are high-pressure engines based on?

**Question 7**

How many cylinders are there in a composite engine?

**Question 8**

How many kilograms of steam per kilowatt-hour does an internal combustion engine use?

**Question 9**

What percentage of the efficiency of a high pressure engine is achieved with a combined engine?

**Text number 29**

If cogeneration is not used, steam turbines in power plants use surface condensers as cold sinks. The condensers are cooled by water flow from oceans, rivers and lakes and often by cooling towers where water is evaporated to remove the cooling energy. The condensed hot water from the condenser is then pumped back to the boiler. A dry cooling tower is similar to a car radiator and is used in places where water is expensive. Evaporative cooling towers (wet cooling towers) use rejected heat to evaporate water; this water is kept separate from the condensed water, which circulates in a closed system and returns to the boiler. These towers often have visible frost, which is the result of the evaporated water condensing into droplets in the warm air. A 700 megawatt coal-fired power plant can use about 3,600 cubic metres of additional water per hour for evaporative cooling, but would need about twenty times that amount if it were cooled by river water.

**Question 0**

In the absence of cogeneration, what do the steam turbines of power plants use as a cold sink?

**Question 1**

What kind of device is a dry cooling tower?

**Question 2**

Where are dry cooling towers used?

**Question 3**

An evaporative cooling tower is also known as what type of cooling tower?

**Question 4**

How many cubic metres of additional water per hour are used for evaporative cooling in a 700 MW coal-fired power plant?

**Question 5**

What do steam turbines in power plants use as a cold scrubber in the absence of water?

**Question 6**

What kind of device is an energy extractor?

**Question 7**

Where are rivers used?

**Question 8**

What type of cooling tower is a water cooling tower?

**Question 9**

How many cubic metres of additional water per hour does a 700 MW hydropower plant use for evaporative cooling?

**Text number 30**

James Watt introduced the centrifugal governor in a steam engine in 1788 after Watt's partner Boulton saw it in a flour mill that Boulton and Watt were building. The governor could not be kept at a set speed because it took on a new constant speed as the load changed. The regulator could handle smaller variations, such as those caused by variations in the boiler's thermal load. In addition, there was a tendency to oscillate as the speed changed. Therefore, engines equipped with this governor alone were not suitable for constant speed operations such as cotton spinning. The governor was improved over time and, in combination with variable steam extraction, good speed control according to load variations was achieved in the late 19th century.

**Question 0**

What did Watt add to the steam engine in 1788?

**Question 1**

What was the name of Watt's partner?

**Question 2**

Where did Boulton first discover the centrifugal governor?

**Question 3**

What is one job for which a centrifugal steam engine was not suitable?

**Question 4**

What was the centrifugal regulator unable to do?

**Question 5**

What did Watt add to the steam engine in the 19th century?

**Question 6**

What was the name of Watt's boss?

**Question 7**

Where did Watt first discover the centrifugal governor?

**Question 8**

What is an example of a job for which a centrifugal steam engine was suitable?

**Question 9**

What could the centrifugal load changes not do?

**Text number 31**

Combination was common in industrial units, road engines and almost universal in marine engines after 1880; it was not generally popular in railway locomotives, where it was often considered complicated. This was partly due to the harsh operating environment of railways and the limited space provided by the loading track (particularly in the UK, where coupling was never common and was not used after 1930). Although it was never in the majority, it was popular in many other countries.

**Question 0**

After which year was the mixture often used in marine engines?

**Question 1**

In the construction of which machines was merging not popular?

**Question 2**

How was consolidation seen by the locomotive industry?

**Question 3**

After which year were combination therapies no longer used in the UK?

**Question 4**

In which machines, such as marine engines and industrial equipment, was mixing popular?

**Question 5**

After which year was the alloy often used in railway locomotives?

**Question 6**

Combining was not popular for loading which machines?

**Question 7**

How was consolidation seen in the maritime sector?

**Question 8**

After which year were marine locomotives no longer used in the UK?

**Question 9**

In which machines were marine propulsion engines popular alongside marine engines and industrial units?

**Text number 32**

The simplest valve gears produce fixed-length events during the engine cycle, often causing the engine to rotate in only one direction. However, most valves have a reversing mechanism that can also save steam as speed and momentum increase by "shortening the cut-off" or rather shortening the inlet event; this in turn lengthens the expansion time. However, as the same valve usually controls both steam flows, a short cut-off at the intake stage has a detrimental effect on the exhaust and compression cycles, which should ideally always be kept fairly constant; if the exhaust stage is too short, all the exhaust steam cannot empty the cylinder, choking it and causing excessive compression ("back pressure")[1].

**Question 0**

What is another term for shortening the reception period?

**Question 1**

What is another term for excessive compression?

**Question 2**

What can the exhaust vapour not do completely if the exhaust gas exhaust event is not long enough?

**Question 3**

How long are the engine cycle times when using the simplest valve gears?

**Question 4**

What is another term for shortening the expansion event?

**Question 5**

What is another term for excessive shortening?

**Question 6**

What can the exhaust vapour not do completely if the vapour path is not long enough?

**Question 7**

How long are the engine cycle times when using the simplest exhaust gas compression?

**Question 8**

What do the simplest compression cylinders provide during an engine cycle?

**Text number 33**

Generating mechanical motion with boiling water dates back more than 2000 years, but the early devices were not practical. Spanish inventor Jerónimo de Ayanz y Beaumont obtained the first patent for a steam engine in 1606. In 1698, Thomas Savery patented a steam pump that used steam in direct contact with the water being pumped. Savery's steam pump used condensed steam to create a vacuum and suck water into a chamber, then used pressurised steam to pump the water further. Thomas Newcomen's atmospheric engine was the first commercial steam engine to use pistons, and was used in 1712 to pump a mine.

**Question 0**

Who got the first patent for a steam engine?

**Question 1**

What was Jerónimo de Ayanz y Beaumont's nationality?

**Question 2**

In what year did Jerónimo de Ayanz y Beaumont receive his steam engine patent?

**Question 3**

In what year did Savery patent the steam pump?

**Question 4**

What year was the Newcomen engine pumping in the mine?

**Question 5**

Who was awarded the first patent for a combustion engine?

**Question 6**

What was Thomas Newcomen's nationality?

**Question 7**

In what year did Thomas Newcomen receive the patent for the steam engine?

**Question 8**

What year did Newcomen patent the steam pump?

**Question 9**

What year was the Saver engine pumping in the mine?

**Text number 34**

A steam turbine consists of one or more rotors (rotating discs) mounted on a drive shaft and alternating with stators (stators) mounted on a turbine housing. The outer edge of the rotors has a propeller-like arrangement of blades. Steam acts on these blades to produce rotary motion. The stator consists of a similar but fixed set of blades whose function is to direct the flow of steam to the next rotor stage. The steam turbine often leads the exhaust gas to a surface condenser forming a vacuum. The stages of a steam turbine are typically arranged to extract the maximum amount of work for a given steam velocity and pressure, resulting in a series of high and low pressure stages of varying sizes. Turbines are only efficient if they rotate at relatively high speeds, and are therefore usually coupled to reduction gears to allow them to operate in lower speed applications such as a ship's propeller. In most large power plants, turbines are connected directly to generators without reduction gears. Typical speeds are 3,600 revolutions per minute (RPM) in the US at 60 hertz and 3,000 RPM in Europe and other countries with 50 hertz power systems. In nuclear applications, turbines typically run at half the speed, 1800 RPM and 1500 RPM. The turbine rotor is also capable of producing power when rotating in only one direction. Therefore, a reversing gear or a gearbox is usually required when power is needed in the opposite direction[reference ].

**Question 0**

What is another term for rotors?

**Question 1**

Where are the rotors mounted in the steam turbine?

**Question 2**

What is another way to refer to stators?

**Question 3**

Where are the stators attached?

**Question 4**

What is the normal turbine speed in the US at 60 hertz?

**Question 5**

What is another term for turbine?

**Question 6**

Where are the discs attached in the steam turbine?

**Question 7**

What is another way to refer to power systems?

**Question 8**

Where do the rotors attach?

**Question 9**

In the US, what is the maximum potential at 60 hertz?

**Text number 35**

Due to the weight of the boilers and condensers, the power-to-weight ratio of a steam power plant is usually lower than that of an internal combustion engine. In mobile applications, steam is largely replaced by internal combustion engines or electric motors. However, most electrical energy is generated by steam turbine plants, so indirectly the world's industry is still dependent on steam power. Recent concerns about fuel sources and pollution have sparked renewed interest in steam, both as part of cogeneration processes and as a motive power source. This has become known as the advanced steam movement[citation needed].

**Question 0**

What is the power/weight ratio of a steam power plant compared to an internal combustion engine?

**Question 1**

Which machines, along with internal combustion engines, have replaced steam in some sectors?

**Question 2**

Which plants produce the most electricity?

**Question 3**

What is the name of the movement that seeks to reuse steam power in modern times?

**Question 4**

Besides fuel sources, what other concerns have contributed to the development of the Advanced Steam movement?

**Question 5**

What is the power/weight ratio of a steam power plant compared to the power/weight ratio of a steam engine?

**Question 6**

Which machines, along with the internal combustion engine, have replaced power in some sectors?

**Question 7**

Which plants produce the most fuel energy?

**Question 8**

What is the name of the movement that seeks to reuse combustion power in modern times?

**Question 9**

Besides fuel sources, what other concerns have influenced the development of the fuel movement?

**Text number 36**

Instead of the cylinders and valve gear of a traditional reciprocating steam engine, a mechanism similar to a pistonless rotary engine, such as the Wankel engine, can be used. Many such engines have been designed from James Watt's time to the present day, but relatively few have been built and even fewer have gone into series production; for more information see the link at the end of the article. The main problem is the difficulty of sealing the rotors to make them vapour-tight due to wear and thermal expansion; the resulting leaks made them very inefficient. The lack of expansion power or any cut-off control is also a serious problem in many such designs.

**Question 0**

What is an example of a rotary engine without a piston?

**Question 1**

Which parts of a conventional reciprocating steam engine could be replaced by a pistonless rotary engine?

**Question 2**

In addition to wear, what developments make it more difficult to seal the rotors in an engine without pistons?

**Question 3**

What is an example of a rotary engine without leaks?

**Question 4**

Which parts of a conventional reciprocating steam engine could be replaced by a pistonless valve gearbox?

**Question 5**

What is the evolution and wear that makes it difficult to seal the rotors in an engine without steam?

**Question 6**

What is not the problem?

**Question 7**

What is not based on a pistonless rotary engine?

**Text number 37**

The next major step was taken when James Watt (1763-1775) developed an improved version of the Newcomen engine with a separate condenser. Boulton and Watt's early engines used half as much coal as John Smeaton's improved version of the Newcomen engine. Newcomen and Watt's early engines were 'atmospheric' engines. They were powered by air pressure, which pushed the piston to create a partial vacuum of condensing steam instead of the pressure of expanding steam. The cylinders of the engine had to be large because the only usable force acting on them was due to air pressure.

**Question 0**

When did Watt complete his improvements to the Newcomen engine?

**Question 1**

What did Watt add to the Newcomen engine between 1763 and 1775?

**Question 2**

How much carbon did Watt's engine use compared to Smeaton's Newcomen engine improvement?

**Question 3**

Whose engine was the atmospheric model besides Watt, Boulton and Smeaton's?

**Question 4**

What does air pressure push in an air engine?

**Question 5**

When did Watt complete his improvements to the engine cylinders?

**Question 6**

What did Newcomen add to Watt's engine between 1763 and 1775?

**Question 7**

How much steam did Watt's engine use compared to Smeaton's improvements to the Newcomen engine?

**Question 8**

Whose engine was a partial condenser in addition to Watt's, Boulton's and Smeaton's?

**Question 9**

What does air pressure push in a condenser motor?

**Text number 38**

Steam engines often have two independent mechanisms to ensure that the boiler pressure does not get too high; one mechanism can be adjusted by the operator and the other is usually designed as a final fail-safe system. Such safety valves traditionally used a simple lever to control a plug valve at the top of the boiler. At the other end of the lever was a weight or spring which restrained the valve under the action of the steam pressure. Early locomotive drivers could adjust the valves, which led to many accidents when the driver clamped the valve down to allow more steam pressure and more engine power. The newer relief valve uses an adjustable spring-loaded valve that is locked so that drivers cannot tamper with its adjustment unless an illegal seal is broken. This arrangement is considerably safer.

**Question 0**

How many mechanisms are there in a typical steam engine to prevent the boiler pressure from getting too high?

**Question 1**

What is held in place by the lever at the top of the kettle?

**Question 2**

What type of valve is used in recent safety valves?

**Question 3**

What has to break in an adjustable spring-loaded valve to allow the user to tamper with it?

**Question 4**

What did the early drivers want to produce when they fixed the safety valves down, apart from increasing the vapour pressure?

**Question 5**

How many mechanisms are there in a typical steam locomotive to prevent the spring pressure from getting too high?

**Question 6**

What is the lever at the top of the driver's seat holding?

**Question 7**

What type of valve is used in recent springs?

**Question 8**

What must be broken in the adjustable power motor to allow the user to tamper with it?

**Question 9**

What did the early drivers want to achieve by fixing the engines down, apart from increasing the steam pressure?

**Text number 39**

The pinnacle of the horizontal engine was the Corliss steam engine, patented in 1849, a four-valve counter-flow engine with separate steam inlet and outlet valves and automatic variable steam cut-off. When Corliss was awarded the Rumford Medal, the committee stated that "no invention since Watt's has so greatly improved the efficiency of the steam engine". Not only did it use 30% less steam, it offered a more even speed thanks to its adjustable steam extraction, making it well suited to production, especially cotton spinning.

**Question 0**

What was the final development of the horizontal engine?

**Question 1**

In what year was the Corliss engine patented?

**Question 2**

How many valves did the Corliss engine use?

**Question 3**

Which award did Corliss receive?

**Question 4**

How much less steam did the Corliss engine use than the Watt engine?

**Question 5**

What was the final development of the vertical engine?

**Question 6**

In what year was the Rumford engine patented?

**Question 7**

How many valves did Rumford's engine use?

**Question 8**

Which prize was inspired by Corliss?

**Question 9**

How much less steam did the Rumford engine use than the Watt engine?

**Text number 40**

The steam engine contributed greatly to the development of thermodynamic theory; however, the only applications of scientific theory that influenced the steam engine were the original concepts of harnessing the power of steam and air pressure and the knowledge of the properties of heat and steam. Watt's experimental measurements on a model steam engine led to the development of a separate condenser. Watt independently discovered latent heat, which was confirmed by the original discoverer, Joseph Black, who also advised Watt on experimental procedures. Watt was also aware of the change in the boiling point of water under pressure. Otherwise, the improvements made to the engine itself were more mechanical in nature. The thermodynamic concepts of the Rankine cycle gave engineers the understanding they needed to calculate efficiency, which helped in the development of modern high pressure and temperature boilers and the steam turbine.

**Question 0**

Which scientific theory has been influenced by the steam engine?

**Question 1**

Who made experimental measurements on a model of a steam engine?

**Question 2**

Based on Watt's measurements, what was developed with the steam engine model?

**Question 3**

Who confirmed Watt's discovery of latent heat?

**Question 4**

Which concept, originally discovered by Black, was later independently discovered by Watt?

**Question 5**

Which scientific discipline has been influenced by the Rankine engine?

**Question 6**

Who made experimental measurements with the Rankine cycle model?

**Question 7**

Based on Watt's measurements, what was developed from the concept of atmosphere?

**Question 8**

Who confirmed Watt's discovery of mechanical heat?

**Question 9**

Which concept, originally discovered by Watt, was later independently discovered by Black?

**Text number 41**

One of the main advantages of the Rankine cycle over others is that relatively little work is required to operate the pump during the compression phase, as the liquid is in a liquid state at this stage. When the liquid condenses, the work required by the pump consumes only 1-3% of the turbine's power, and this significantly improves the efficiency of the actual cycle. The benefit of this is lost due to the somewhat lower heat input temperature. In gas turbines, for example, the turbine inlet temperature is close to 1500 °C. However, the efficiencies of real large steam cycles and large modern gas turbines are quite similar[1].

**Question 0**

What is the main advantage of the Rankine cycle?

**Question 1**

What is the state of the working fluid during the compression phase of the Rankine cycle?

**Question 2**

How much turbine energy does the pump consume when the thrust fluid condenses?

**Question 3**

What is the inlet temperature of a gas turbine turbine?

**Question 4**

What is the main advantage of the efficiency cycle?

**Question 5**

What is the state of the working fluid during the compression phase of the efficiency cycle?

**Question 6**

How much temperature does the pump consume when the thrust fluid condenses?

**Question 7**

What is the approximate value of the turbine inlet temperature of a pump turbine?

**Question 8**

What results in the work required by the pump consuming only 0.5% of the turbine's power?

**Text number 42**

Other components are often included: pumps (such as an injector) to feed water into the boiler during operation, condensers to recycle water and recover latent heat of vaporisation, superheaters to raise the temperature of the steam above its saturated steam point, and various mechanisms to increase the draft in the furnace. Coal firing can be achieved by a chain or screw combustion mechanism with a propulsion engine or an engine that transfers the fuel from the feed tank (bunker) to the firebox. See: Mechanical hearth

**Question 0**

What is an example of a pump component?

**Question 1**

What do condensers do besides circulating water?

**Question 2**

Which components raise the temperature of the vapour above its saturated vapour point?

**Question 3**

What is another name for carbon storage?

**Question 4**

By what mechanism is carbon transferred from the bunker to the furnace?

**Question 5**

What is an example of a firebox?

**Question 6**

What do bunkers do besides recycle water?

**Question 7**

Which components raise the temperature of the steam above its saturated furnace temperature?

**Question 8**

What's another name for a fire pit?

**Question 9**

By what mechanism is carbon transferred from the furnace to the bunker?

**Text number 43**

Land-based steam engines were able to extract much of their steam because feed water was usually readily available. Before and during the First World War, the expansion engine dominated marine applications where high ship speed was not essential. However, it was superseded by the British steam turbine where speed was needed, for example in warships such as the Dreadnought battleships and ocean-going vessels. The HMS Dreadnought of 1905 was the first large warship to replace the then proven technology of the piston engine with the new steam turbine.

**Question 0**

What substance was densely available that allowed land-based steam engines to use a lot of steam?

**Question 1**

Which nationality invented the steam turbine?

**Question 2**

What was an example of a type of warship that required high speed?

**Question 3**

Which vessels other than warships typically require high speeds?

**Question 4**

What year was HMS Dreadnought launched?

**Question 5**

What substance was so widely available that land-based steam engines exhausted a large number of battleships?

**Question 6**

Which nationality invented HMS Dreadnought?

**Question 7**

What was an example of a type of warship that needed expansion engines?

**Question 8**

Which ships other than warships generally needed expansion engines?

**Question 9**

In what year was the First World War started?

**Text number 44**

Almost all nuclear power plants produce electricity by heating water into steam, which is used by a turbine connected to an electric generator. Nuclear-powered ships and submarines either use a steam turbine directly as their main power source, with generators providing auxiliary power, or use a turbo-electric transmission, where steam drives a turbo-generator and electric motors provide the power. A limited number of steam turbine engines have been produced. Some non-condensing direct-drive locomotives were built with some success for long-distance freight in Sweden and for express passenger services in the United Kingdom, but were not repeated. Elsewhere, notably in the United States, more advanced models with electric transmission were built on an experimental basis but were not repeated. It was found that steam turbines were not ideally suited to the railway environment and these locomotives did not succeed in displacing the classic piston steam locomotive in the same way that modern diesel and electric traction has done.

**Question 0**

What do nuclear power plants heat to produce electricity?

**Question 1**

What does the steam produced by a nuclear power plant drive?

**Question 2**

Where is the steam turbine connected in a nuclear power plant?

**Question 3**

What is it called when steam is used by a turbogenerator with an electric motor-driven power source?

**Question 4**

Which fast passenger trains in particular used non-condensing direct-drive locomotives?

**Question 5**

What do nuclear power plants heat to create steam turbines?

**Question 6**

What does the steam produced by the auxiliary power do?

**Question 7**

In a nuclear power plant, where is the diesel turbine connected?

**Question 8**

What is it called when steam is used by a turbogenerator with a diesel engine power source?

**Question 9**

Which high-speed passenger vessels in particular used non-condensing direct-drive locomotives?

**Text number 45**

The Rankine cycle is sometimes called the practical Carnot cycle, because when an efficient turbine is used, the TS diagram starts to resemble the Carnot cycle. The main difference is that heat addition (in the boiler) and removal (in the condenser) are isobaric (constant pressure) processes in the Rankine cycle and isothermal (constant temperature) processes in the theoretical Carnot cycle. In this cycle, a pump is used to pressurise the liquid, not gas, coming from the condenser. Pumping the liquid working fluid during the cycle requires only a small fraction of the energy needed to transport it compared to the energy needed to compress the working fluid in gaseous form in a compressor (as in the Carnot cycle). The cycle of a reciprocating steam engine differs from that of a turbine because condensation and re-evaporation occur in the cylinder or steam inlet passages.

**Question 0**

What is the name of the Rankine cycle?

**Question 1**

At what point in the Rankine cycle does heat rejection occur?

**Question 2**

What does isobaric mean?

**Question 3**

What is the term for a constant temperature?

**Question 4**

In which state in the Rankine cycle does the condenser receive the liquid?

**Question 5**

What is the name of the cycle condenser?

**Question 6**

At what point in the Rankine cycle does heat rejection occur?

**Question 7**

What does Carnot mean?

**Question 8**

What is the term for continuous energy?

**Question 9**

In which state is the working fluid in the Rankine cycle with the steam?

**Document number 449**

**Text number 0**

Oxygen is a chemical element with the symbol O and atomic number 8. It belongs to the calcogen group of the periodic table and is a highly reactive non-metal and oxidant that readily forms compounds (especially oxides) with most elements. Oxygen is the third most abundant element in the universe by mass after hydrogen and helium. At constant temperature and pressure, two atoms of the element bond to form dioxygen, a colourless and odourless diatomic gas with the formula O  
2Oxygengas is the most abundant   
diatomicgas in the Earth's atmosphere, accounting for 20.8% of the atmosphere. However, monitoring of atmospheric oxygen concentrations shows a global downward trend due to the burning of fossil fuels. Oxygen is the most abundant element in the Earth's crust as part of oxide compounds such as silica, accounting for almost half of the Earth's crustal mass.

**Question 0**

The periodic table of oxygen?

**Question 1**

What is the second most common element?

**Question 2**

Which gas makes up 20.8% of the Earth's atmosphere?

**Question 3**

How many atoms combine to form oxygen?

**Question 4**

Approximately how much oxygen is in the Earth's crust?

**Question 5**

What is the oxygen atomic number of an element?

**Question 6**

Which periodic table group does oxygen belong to?

**Question 7**

What are the most common compounds formed by oxygen?

**Question 8**

How abundant is oxygen compared to other elements?

**Question 9**

What do two oxygen atoms form under normal conditions?

**Question 10**

The atomic symbol for which element is O?

**Question 11**

Which element has the symbol 8?

**Question 12**

What is the most abundant element in the universe after hydrogen and helium?

**Question 13**

What makes up 28.0% of the Earth's atmosphere?

**Text number 1**

Many of the main classes of organic molecules in living organisms, such as proteins, nucleic acids, carbohydrates and fats, contain oxygen, as do the inorganic compounds in animal shells, teeth and bones. Most of the mass of living organisms is oxygen because it is part of water, the main constituent of life forms. Oxygen is used in cellular respiration and is released by photosynthesis, which uses the energy of sunlight to produce oxygen from water. Oxygen is too chemically reactive to remain free in the air without being constantly replenished by photosynthesis by living organisms. Another form of oxygen (allotrope), ozone (O  
3), strongly absorbs UVB radiation, wherebythe ozone layer at   
high altitudehelps to protect the biosphere from ultraviolet radiation, but is a pollutant near the surface, where it is a by-product of smog. At even higher low Earth orbital altitudes, there is enough atomic oxygen to cause erosion on spacecraft.

**Question 0**

Is oxygen released in cellular respiration?

**Question 1**

What energy does photosynthesis use to get oxygen from water?

**Question 2**

\_\_\_\_\_ Helps protect the biosphere from UV radiation.

**Question 3**

What elements are found in most organic organisms?

**Question 4**

Where do most living things have oxygen?

**Question 5**

Which life process produces oxygen in the presence of light?

**Question 6**

Where does your photosynthesis get oxygen from?

**Question 7**

Which form of oxygen consists of three oxygen atoms?

**Question 8**

What are some examples of organic proteins?

**Question 9**

What is used in photosynthesis and released in cellular respiration?

**Question 10**

What absorbs UBV radiation?

**Question 11**

What is UBV radiation near the surface?

**Text number 2**

In the late 1600s, Robert Boyle showed that air is needed for combustion. The English chemist John Mayow (1641-1679) refined this work by showing that fire requires only a portion of air, which he called spiritus nitroaereus or just nitroaereus. In an experiment, he found that placing either a mouse or a lighted candle in a closed vessel over water caused the water to rise and replace one-fourteenth of the volume of air before the subjects were extinguished. From this he concluded that nitrous oxide is consumed in both respiration and combustion.

**Question 0**

Who proved that air is needed for combustion?

**Question 1**

Which English chemist showed that fire only needs nitrous oxide?

**Question 2**

What does it take to both burn and breathe?

**Question 3**

In what year did John Mayow die?

**Question 4**

Which scientist showed that air is necessary for combustion?

**Question 5**

What name did John Mayow give to the part of the air that causes combustion?

**Question 6**

In which century did Mayow and Boyle conduct their experiment?

**Question 7**

What other activities did Mayow show nitrous oxide to be responsible for besides combustion?

**Question 8**

Which chemist showed that fire only needs a fraction of the air?

**Question 9**

Where did John Mayow show that air is needed?

**Question 10**

What years did chemist John Boyle live?

**Question 11**

When did Robert Mayow prove his theory?

**Question 12**

Who has refined Robert Mayow's work?

**Question 13**

What was John Boyle's occupation?

**Text number 3**

Meanwhile, on 1 August 1774, an experiment by the British priest Joseph Priestley exposed mercuric oxide (HgO) to sunlight in a glass tube, releasing a gas he called "deflogistic air". He found that candles burned brighter in the gas and that mice were more active and lived longer when they breathed it. After inhaling the gas himself, he wrote: "The sensation of it in my lungs was not very different from ordinary air, but I imagined that my chest felt strangely light and easy for some time afterwards". Priestley published his findings in 1775 in the article 'An Account of Further Discoveries in Air', which was included in the second volume of his book Experiments and Observations on Different Kinds of Air. Because he was the first to publish his findings, Priestley is usually given precedence in terms of discoveries.

**Question 0**

Who published "An Account of Further Discoveries in Air" in 1775?

**Question 1**

What was Joseph Priestley's occupation?

**Question 2**

Which compound did Priestley concentrate on using sunlight to make a gas he called "deflogistic air"?

**Question 3**

The symbol for mercuric oxide is?

**Question 4**

What chemical did Priestley use in his oxygen experiments?

**Question 5**

What did Priestley call the gas produced by his experiment?

**Question 6**

In what year did Priestley publish the results of his experiments?

**Question 7**

Why is Priestley usually given credit for being the first to find oxygen?

**Question 8**

What effect did inhaling the gas found by Priestley have on the mouse in the experiment?

**Question 9**

Who conducted the experiment on 4 August 1774?

**Question 10**

What was the focus of Joseph Priestley's test on 4 August 1774?

**Question 11**

What did Priestley publish in 1774?

**Question 12**

What name did Priestley give to the air he created?

**Text number 4**

One of the first known experiments on the relationship between combustion and air was carried out in the 2nd century BC by the Greek mechanics writer Philo Byzantine. In his work Pneumatica, Philo observed that when a vessel was turned over a burning candle and the neck of the vessel was surrounded by water, some of the water rose to the neck. Philo mistakenly thought that some of the air in the vessel had turned into a classical element, fire, and could thus escape through the pores of the glass. Many centuries later, Leonardo da Vinci followed up Philo's work by discovering that some air is consumed during combustion and respiration.

**Question 0**

Which inventor continued the discoveries of Philo Byzantium?

**Question 1**

Pneumatica by which Greek author?

**Question 2**

In what year were the first known experiments on combustion and air carried out?

**Question 3**

Philo of Byzantium \_\_\_\_ speculated that the air turned into fire...

**Question 4**

Which early Greek wrote about air and combustion experiments?

**Question 5**

What did Filon wrongly assume that the air became air?

**Question 6**

What was the title of Philo's work?

**Question 7**

Which famous artist later studied Philo's experiments?

**Question 8**

What made da Vinci think that a part is consumed during combustion?

**Question 9**

What kind of test did the Philo of Pneumatica take?

**Question 10**

In which century did Philo Pneumatica carry out his combustion experiments?

**Question 11**

Who continued the work of Philo of Pneumatica?

**Question 12**

What nationality was Leonardo da Vinci?

**Text number 5**

Highly concentrated oxygen sources promote rapid combustion. Fire and explosion hazards exist when concentrated oxidants and fuels are brought into close proximity; an ignition event such as heat or spark is required to initiate combustion. Oxygen is an oxidant, not a fuel, but it is nevertheless the major part of the chemical energy released in combustion. Oxygen compounds with a high oxidation potential, such as peroxides, chlorates, nitrates, perchlorates and dichromates, are also combustion hazards because they can release oxygen into the fire.

**Question 0**

What is needed for combustion to take place?

**Question 1**

Combustion is caused by the oxidant and the fuel. What role does oxygen play in combustion?

**Question 2**

Peroxides, nitrates and dichromates are examples of which types of compounds?

**Question 3**

Although \_\_\_ is not a fuel, it is the chemical compound that causes most explosions.

**Question 4**

What can concentrated oxygen produce?

**Question 5**

What does a spark or heat do to the progress of a fire?

**Question 6**

What is the oxygen in a fire instead of fuel?

**Question 7**

What is oxygen based on in combustion?

**Question 8**

What other sources of high oxidation potential can contribute to a fire?

**Question 9**

What do fast and dense oxygen sources contribute?

**Question 10**

What is oxygen instead of an oxidant?

**Question 11**

Where does the fuel come from?

**Question 12**

What is oxygen considered to be a hazard?

**Question 13**

What can release dichromats into a fire?

**Text number 6**

condensed O  
2 allows forfast and energetic progress of   
the application. Steel tubes and storage vessels used for the storage and transfer of both gaseous and liquid oxygen act as a fuel, and therefore O  
2 -  
design and manufacture require special trainingensure that ignition sources are minimised. The fire that killed the Apollo 1 crew in the launch pad test spread so quickly because the capsule was pressurized with pure O  
2 but at slightly above atmospheric pressure,used 1⁄3 normal pressure[k].

**Question 0**

\_\_\_\_\_\_ In both liquid and gaseous form, it can quickly lead to an explosion.

**Question 1**

To ensure the safety of future space flights, oxygen was used at a pressure \_\_\_\_\_ above normal.

**Question 2**

To reduce the potential for combustion, \_\_\_ is required for the safe handling of pure O.

**Question 3**

What does concentrated oxygen speed up considerably?

**Question 4**

What are the concerns about storing concentrated oxygen because of the danger it poses?

**Question 5**

What is required for the safety of oxygen handling during transport and storage?

**Question 6**

Who died in a fire in a pressurised oxygen cabin?

**Question 7**

How do steel pipes allow combustion to proceed?

**Question 8**

What kind of fire killed the Apollo 1 crew?

**Question 9**

What does condensed O allow combustion?

**Text number 7**

Oxygen is present in the atmosphere in small amounts as carbon dioxide (CO  
2The Earth'crust is largely composed of silica (silicon oxide SiO  
2, found in granite and quartz), aluminium (aluminium oxide Al  
2O  
3, found in bauxite and corundum), iron(iron (III) oxide Fe  
2O  
3, found in hematite and rust) and calcium carbonate (in   
  
limestoneMourous crust is   
  
alsocomposed of oxygen compounds, in particular various complex silicates (in silicate minerals). The earth's mantle, which is much more massive than the crust, is largely composed of magnesium and iron silicates.

**Question 0**

Magnesium and iron silicates make up part of the Earth's \_\_\_.

**Question 1**

Granite is largely composed of which chemical compound?

**Question 2**

Oxygen is in the atmosphere through what?

**Question 3**

In which compound does oxygen occur in small amounts in the atmosphere?

**Question 4**

Which geological feature is composed of oxygen oxides?

**Question 5**

Which part of the Earth is composed mainly of iron and magnesium silicates?

**Question 6**

Which part of the Earth's geological structure is larger than the Earth's crust?

**Question 7**

What other compounds, apart from oxides, make up a large part of the Earth's crust?

**Question 8**

What is CO?

**Question 9**

What is SiO?

**Question 10**

What is AlO?

**Question 11**

What is Fe2O?

**Text number 8**

John Dalton's original atomic hypothesis assumed that all elements were monatomic and that the ratio of atoms in compounds to each other was generally the simplest. For example, Dalton assumed that the formula for water was HO, which gave oxygen an atomic mass of 8 times that of hydrogen, instead of the current figure of about 16. The atomic mass of oxygen was therefore 8 times that of hydrogen. In 1805, Joseph Louis Gay-Lussac and Alexander von Humboldt showed that water is composed of two volumes of hydrogen and one volume of oxygen; and by 1811, Amedeo Avogadro had arrived at a correct interpretation of the composition of water, based on what is now called Avogadro's law and the assumption of diatomic molecules of elements[a].

**Question 0**

What did John Dalton think that all the elements were present in number in compounds?

**Question 1**

What did Dalton think were the relationships between atoms in compound atoms?

**Question 2**

What was Dalton's incorrect formula for water?

**Question 3**

Which element did Gay-Lussac and von Humboldt find to be twice as abundant in water as oxygen?

**Question 4**

What was the theory that led to the hypothesis of diatomic molecules in 1811?

**Question 5**

What did John Dalton perform in 1805?

**Question 6**

What did Dalton assume about OH?

**Question 7**

What did Joseph Louis von Humboldt and Alexander Gay-Lussac show about water?

**Question 8**

In what year did Joseph Louis von Humboldt define the formula for water?

**Question 9**

Which law was created in 1805?

**Text number 9**

Highly combustible materials that leave little residue, such as wood or coal, were thought to consist mostly of flogging, while non-combustible, corrosive materials such as iron contained very little. Air was not a factor in the flogiston theory, and the first quantitative experiments were not carried out to test the idea; instead, the theory was based on observations of what happens when something burns, i.e. that most ordinary objects seem to lighten and appear to lose something in the process. The fact that the total weight of a substance like wood increases when it burns was hidden behind the buoyancy of gaseous products of combustion. One of the first hints that the flogiston study was flawed was that metals also gain weight as they rust (when they were assumed to lose flogiston).

**Question 0**

What substances were thought to be present that left little residue?

**Question 1**

In which combustible substances was philogistics considered to be of minor importance?

**Question 2**

What specific property of combustion was missing from the theory of philogiston?

**Question 3**

Which material's weight gain during rusting was an early clue that the Philogiston theory was wrong?

**Question 4**

What property do most objects have after burning?

**Question 5**

What was most of the iron found to be made of?

**Question 6**

Which highly flammable materials are corrosive?

**Question 7**

What was the first clue that the flogiston theory was correct?

**Question 8**

Who was thought to have a lot of iron?

**Text number 10**

In this di-acid, two oxygen atoms are chemically bonded together. The bond can be described in different ways depending on the level of theory, but it is reasonably and simply described as a covalent double bond formed by the filling of molecular orbitals formed by the atomic orbitals of the individual oxygen atoms, the filling of which results in a bond of order two. More precisely, the double bond is the result of the successive filling of the orbitals from low to high energy, Aufbau, and the resulting 2s:n electrons after the successive filling of the low σ and σ\* orbitals; σ the overlap of the 2p orbitals of two atoms parallel to the O-O molecular axis and π the overlap of two pairs of 2p orbitals of two atoms perpendicular to the O-O molecular axis, followed by the cancellation of the contributions from the two remaining six 2p electrons after they have partially filled the lowest π and π\* orbitals.

**Question 0**

What is the simplest way to describe oxygen?

**Question 1**

What is the bonding order of oxygen molecules?

**Question 2**

What is the descriptive term for the low-energy/high-energy bond?

**Question 3**

How are two oxygen atoms bonded together in a diatomaceous earth?

**Question 4**

Where does a covalent double bond come from ?

**Question 5**

How is the covalent bonding of dihydrogen explained?

**Question 6**

What causes covalent bonding?

**Question 7**

On which axis do the 2p orbitals overlap?

**Question 8**

How many pairs of 2p orbitals are there along the O-O axis?

**Text number 11**

Oxygen was discovered independently by Carl Wilhelm Scheele in Uppsala in 1773 or earlier and Joseph Priestley in Wiltshire in 1774, but Priestley is often preferred because his work was published first. The name oxygen was coined in 1777 by Antoine Lavoisier, whose experiments with oxygen helped to discredit the then popular flogiston theory of combustion and corrosion. The name derives from the Greek roots ὀξύς oxys, 'acid', literally 'sharp', referring to the acidic taste of acids, and -γενής -genes, 'producer', literally 'generator', because at the time of its naming it was mistakenly believed that all acids needed oxygen for their composition. Oxygen is commonly used in the production chain of steel, plastics and textiles, in the brazing, welding and cutting of steel and other metals, as rocket fuel, in oxygen therapy and in life support systems in aircraft, submarines, space flight and diving, among other things.

**Question 0**

When did Carl Wilhelm Scheele discover oxygen?

**Question 1**

In what year did Joseph Priestley identify oxygen?

**Question 2**

What gave Priestley the right to claim to be the first oxygen discoverer?

**Question 3**

Which scientist was the first to use the word oxygen ?

**Question 4**

Which earlier work did Lavoisier's experiments cast doubt on?

**Question 5**

When did Carl Priestly discover oxygen?

**Question 6**

When did Joseph Scheele discover oxygen?

**Question 7**

Who invented the name oxygen in 1774?

**Question 8**

Whose experiments with oxygen led to the popular theory of combustion and corrosion?

**Text number 12**

This combination of cumulations and σ- and π- overlaps leads to the nature and reactivity of the double bond of dioxide and the fundamental state of triplet electrics. An electron configuration with two unpaired electrons, as in the case of dioxide (see filled π\* orbitals in the figure), orbitals with the same energy - i.e. which are degenerate - is a configuration called the spin-triplet state. Thus, the ground state of   
the O2 molecule is called triplet oxygen.[b] The highest energy, partially filled orbitals are anti-bonded, so filling them weakens the bond order from three to two. Because of its unpaired electrons, triplet oxygen reacts only slowly with most organic molecules that have paired electron spins; this prevents spontaneous combustion.

**Question 0**

What is the term for the arrangement of two unpaired electrons in dioxygen?

**Question 1**

What is the O2 molecule called in its ground state?

**Question 2**

What causes triplet oxygen to react slowly?

**Question 3**

What kind of combustion is prevented by the slow reaction of triplet oxygen?

**Question 4**

What are the higher orbitals that are poorly filled with oxygen?

**Question 5**

What is the fundamental state of the O molecule?

**Question 6**

What is the nature of the triplet bond of dioxide?

**Question 7**

What does double oxygen react slowly with?

**Question 8**

What does double oxygen, which reacts slowly with most organic molecules, prevent?

**Text number 13**

In one experiment, Lavoisier found that heating tin and air in a closed container did not increase weight. He found that air flowed in when he opened the container, indicating that part of the air barrier had worn away. He also found that the weight of the tin had increased, and this increase was the same as the weight of the air flowing back in. This and other combustion experiments were documented in his book Sur la combustion en général, published in 1777. In that work he showed that air is a mixture of two gases: 'vital air', which is essential for combustion and respiration, and azote (Gk. ἄζωτον 'inanimate'), which supports neither. Azote later became nitrogen in English, although it has retained its name in French and several other European languages.

**Question 0**

What did Lavoisier conclude in his experiments that combustion consumes?

**Question 1**

How did Lavoisier discover that the tin he used in his experiment had increased?

**Question 2**

What did Lavoisier find that the air had lost as much as the tin had gained?

**Question 3**

What year did Lavoisier publish his work on combustion?

**Question 4**

Without the second part, what did Lavoisier consider lifeless?

**Question 5**

What is another term for vital air?

**Question 6**

What is the English word for nitrogen?

**Question 7**

When was the Sur book published?

**Text number 14**

Trioxyacetic acid (O  
3), commonly knownas ozone, is a highly reactive oxygen allotrope that damages lung tissue. Ozone is formed in the upper atmosphere when O  
  
2 combines with atomic oxygen, which is produced  
  
the  
  
splitting of O  
  
2(UV) radiation. ozone is strongly absorbed in the UV spectrum, the ozone layer in the upper atmosphere acting   
  
  
  
  
as a shield to the Earth's radiation.Near the Earth's surface, it is a pollutant formed as a by-product of car exhaust emissions.In 2001, a metastabletetra-acid molecule (O  
4)was discoveredand assumed to be one of the six phases of solid oxygen.In2006, it was shown that this phase, formed by compressing O  
2 to 20 GPa, is in fact a rhombohedral O  
8 clusterThis cluster can be a much more efficient oxidant than O  
2 or O  
3 and can therefore be used as rocket fuelIn 1990, a metallic phase was discovered when solid oxygen was subjected to pressures above 96 GPa, and in 1998 it was shown that at very low temperatures this phase becomes superconducting

**Question 0**

What is the most frequently used name for O3?

**Question 1**

Where does ozone come from as a reactive component of oxygen?

**Question 2**

What does the property of ozone to cause damage affect?

**Question 3**

What is the role of ozone on the planet?

**Question 4**

What light radiation is absorbed by ozone?

**Question 5**

What is the name of the trioxide gene (O2)?

**Question 6**

What is another term for the upper atmosphere?

**Question 7**

What was found in 2001 for the solid oxygen phase?

**Question 8**

What was observed in 2006 for O4?

**Text number 15**

A common allotrope of elemental oxygen on Earth is called di-oxygen  
, a  
form of O  
2seis a major component of the Earth's atmosphere (see occurrence). O2 has a bond length of 121 pm and a bond energy of 498 kJ-mol-1, which is lower than the energy of other double bonds or single bond pairs present in the biosphere, and is responsible for the exothermic reaction of O2 with any organic molecule. Because of its energy content, O2 is used by complex life forms such as animals for cellular respiration (see Biological role)Otheraspects ofO  
2are discussedat the end of this article

**Question 0**

What is the most common form of oxygen on Earth?

**Question 1**

What is the scientific name for oxygen?

**Question 2**

What part of the Earth's atmosphere is made up of oxygen?

**Question 3**

What property of oxygen makes it essential for life?

**Question 4**

What do animals use oxygen for?

**Question 5**

What is the Earth's oxygen, O, called?

**Question 6**

What is the binding energy of 121 pm?

**Question 7**

Which bond has a length of 498 kJ-mol-1?

**Question 8**

Why do animals use O2 for biological respiration?

**Text number 16**

In 1891, Scottish chemist James Dewar was able to produce enough liquid oxygen for research. In 1895, German engineer Carl von Linde and British engineer William Hampson independently developed the first commercially viable process for producing liquid oxygen. Both men lowered the temperature of the air until it liquefied, and then distilled the gas components by boiling them one by one and collecting them. Later, in 1901, welding was   
first demonstrated by burning  
a mixture ofacetylene and pressurised O  
2  
This method of welding and cutting metal later became more common

**Question 0**

Which chemist managed to produce enough liquid oxygen for research?

**Question 1**

What year did Dewar experiment with liquid oxygen?

**Question 2**

When was liquid oxygen developed for commercial use?

**Question 3**

Which welding process was introduced in 1901?

**Question 4**

Who produced enough oxygen for research in 1819?

**Question 5**

What was developed in 1859?

**Question 6**

What did Carl von Hampson and William Linde develop?

**Question 7**

What was first introduced in 1910?

**Text number 17**

Oxygen is more soluble in water than nitrogenWater in equilibrium with air contains about 1 molecule of dissolved O  
2 for every 2 molecules of N  
2 at an atmospheric ratio of about 1:4  
  
moleculeThesolubility ofoxygenin water depends ontemperature, and is about twice as soluble at 0 °C (14.6 mg-L-1 ) as at 20 °C (7.6 mg-L-1 ). Fresh water at 25 °C and at one standard atmospheric pressure (101,3 kPa) contains about 6,04 millilitres (ml) of oxygen per litre, compared with about 4,95 ml per litre in seawater. At 5 °C, the solubility increases to 9,0 ml (50 % more than at 25 °C) per litre of water and 7,2 ml (45 % more) per litre of seawater.

**Question 0**

Which water constituent is more soluble than nitrogen?

**Question 1**

On what chemical property does the solubility of oxygen depend?

**Question 2**

How much oxygen is in a litre of fresh water under normal conditions?

**Question 3**

What kind of water is slower to dissolve oxygen in?

**Question 4**

How much more oxygen dissolves at 0°C than at 20°C?

**Question 5**

What is more water soluble than nitrogen?

**Question 6**

What does air in equilibrium with water contain?

**Question 7**

What does the solubility of water in oxygen depend on?

**Question 8**

What is 103.1 kPa?

**Text number 18**

Oxygen is the most abundant chemical element by mass in the Earth's biosphere, air, sea and land. Oxygen is the third most abundant chemical element in the universe after hydrogen and helium. About 0.9% of the Sun's mass is oxygen. Oxygen makes up 49.2% of the mass of the Earth's crust and is the main component of the world's oceans   
  
(88.8% by mass). Oxygen gas is the second most abundant component of the Earth's atmosphere, accounting for 20.8% by volume and 23.1% by mass (about 1015 tonnes).[d] The Earth is unusual among the planets in the Solar System in having such a high concentration of oxygen gas in its atmosphere:Mars (0.1%by volume ofO  
2) and Venus have much lower concentrations.TheO  
2surrounding the other planetsis produced solelyby the action of   
  
ultraviolet radiationoxygen-containing molecules such as carbon dioxide.

**Question 0**

Where does oxygen rank in terms of mass in the Earth's biosphere?

**Question 1**

How is oxygen classified as the abundance of the universe?

**Question 2**

How much of the sun is made up of oxygen?

**Question 3**

In which mass is oxygen a major component?

**Question 4**

How is oxygen produced from carbon dioxide on other planets in the solar system?

**Question 5**

What is the most abundant mass element in the Earth's biosphere?

**Question 6**

Which elements follow oxygen as the most abundant elements in the universe?

**Question 7**

What makes up 49.2% of the Sun's mass?

**Question 8**

What makes up 0.9% of the mass of the Earth's crust?

**Question 9**

What makes up 23.1% of the Earth's mass?

**Text number 19**

In the late 19th century, scientists realised that air could be liquefied and its components insulated by compressing and cooling it. Swiss chemist and physicist Raoul Pierre Pictet evaporated liquid sulphur dioxide into liquid carbon dioxide, which in turn was evaporated to cool the oxygen gas enough to liquefy it. On 22 December 1877, he sent a telegram to the French Academy of Sciences in Paris announcing his discovery of liquid oxygen. Just two days later, French physicist Louis Paul Cailletet announced his own method for liquefying molecular oxygen. In both cases, only a few drops of liquid were produced, so no meaningful analysis could be made. Oxygen was first liquefied at steady state on 29 March 1883 by Polish scientists Zygmunt Wróblewski and Karol Olszewski of Jagiellonian University.

**Question 0**

In what century did scientists discover that they could liquefy air?

**Question 1**

How were the researchers able to liquefy the air?

**Question 2**

Which scientist told the French Academy of Sciences that he had discovered how to liquefy oxygen?

**Question 3**

What small amount of liquid oxygen did the early French experimenters produce?

**Question 4**

On what day was oxygen liquefied to a stable form?

**Question 5**

What did Pierre Raoul Pictet do for a living?

**Question 6**

What was sent on 29 December 1877?

**Question 7**

What was first liquefied at steady state on 22 March 1883?

**Question 8**

Who liquefied oxygen to a stable state on 22 March 1883?

**Question 9**

Which university were Zygumunt Olszewski and Karol Wroblewski from?

**Text number 20**

Planetary geologists have measured different abundances of oxygen isotopes in samples from Earth, the Moon, Mars and meteorites, but have long been unable to obtain reference values for the isotopic ratios on the Sun, which are believed to be the same as those in the Sun's primordial nebula. Analysis of a flint disc returned from the Genesis spacecraft, which was exposed to solar winds in space and fell, has shown that the Sun contains more oxygen-16 than the Earth. The measurement suggests that an unknown process has consumed oxygen-16 from the Sun's disk of protoplanetary material before the dust particles that formed the Earth coalesced.

**Question 0**

Which celestial body avoided attempts to measure oxygen?

**Question 1**

Which molecule has more molecules in the Sun than on Earth?

**Question 2**

Which spacecraft contained data to determine the oxygen content of the Sun?

**Question 3**

What process was involved in the depletion of oxygen from the sun 16?

**Question 4**

Before the formation of which planet did Sol lose oxygen 16?

**Question 5**

Where have Genesis geologists measured oxygen isotopes?

**Question 6**

Where were the Genesis geologists unable to measure oxygen?

**Question 7**

What does the Planetary Spacecraft analyse?

**Question 8**

Which country has a higher proportion of oxygen-16 than the Earth?

**Text number 21**

Singlet oxygen   
refers to several  
species of molecular O  
2higher  
energy  
all electron spins are evenIt is much more reactive  
with organic molecules   
than molecular oxygen per se. In nature, singlet oxygen is commonly formed from water during photosynthesis using the energy of sunlight. It is also produced in the troposphere by photolysis of ozone under the influence of short-wavelength light and by the immune system as a source of active oxygen. Carotenoids in photosynthetic organisms (and possibly animals) play an important role in absorbing singlet oxygen energy and converting it to an unexcited ground state before it can cause damage to tissues.

**Question 0**

What is the name of the form of oxygen in which the electrons are in pairs?

**Question 1**

How is the singlet oxygen more reactive?

**Question 2**

In which process is singlet oxygen usually formed?

**Question 3**

By what process is singlet oxygen produced in the troposphere?

**Question 4**

Which organisms absorb singlet oxygen to prevent harm?

**Question 5**

What is the energy produced in nature during photosynthesis?

**Question 6**

What is paired oxygen?

**Question 7**

Where is paired oxygen produced?

**Question 8**

What plays an important role in oxygen absorption?

**Text number 22**

Palaeoclimatologists measure the ratio of oxygen-18 to oxygen-16 in the shells and skeletons of marine organisms to determine what the climate was like millions of years ago (see oxygen isotope ratio cycle). Seawater molecules containing the lighter isotope, oxygen-16, evaporate slightly faster than water molecules containing oxygen-18, which is 12% heavier; this difference increases at lower temperatures. At lower global temperatures, snow and rain from evaporated water tends to contain more oxygen-16, and the remaining seawater tends to contain more oxygen-18. Marine organisms then incorporate more oxygen-18 into their skeletons and shells than in warmer climates. Palaeoclimatologists also measure this relationship directly from water molecules in ice core samples up to hundreds of thousands of years old.

**Question 0**

Which group of researchers is trying to measure oxygen levels in marine animals?

**Question 1**

What weather phenomenon do paleoclimatologists want to know about?

**Question 2**

How much heavier is oxygen 18 than oxygen 16?

**Question 3**

What kind of oxygen do marine animals get more of in cooler climates?

**Question 4**

In which climate is oxygen 18 higher in seawater?

**Question 5**

Who measures the oxygen-18 and oxygen-16 concentrations in the bones of all organisms?

**Question 6**

What is oxygen-16 lighter than?

**Question 7**

How much lighter is oxygen-18?

**Question 8**

Water higher oxygen-16 experienced higher what?

**Text number 23**

Oxygen has two spectrophotometric absorption bands, peaking at wavelengths of 687 and 760 nm. Some remote sensing experts have proposed using measurements of the radiation from the vegetation canopy in these bands to characterise the health of plants from a satellite. This approach takes advantage of the fact that in these bands it is possible to distinguish the reflectance of vegetation from its fluorescence, which is much weaker. The measurement is technically difficult due to the low signal-to-noise ratio and the physical structure of the vegetation, but it has been proposed as a possible method for monitoring the carbon cycle from satellites worldwide.

**Question 0**

At what wavelength are the spectrophotometric bands at their maximum?

**Question 1**

For which event would the measurement of vegetation radiation provide information?

**Question 2**

Where would scientists like to measure radiation from vegetation?

**Question 3**

What scale do scientists use to show vegetation measurements?

**Question 4**

What kind of sensor do scientists want to use to measure global radiation?

**Question 5**

What are the wavelength peaks at 680 and 768 nm?

**Question 6**

What have researchers proposed to use to describe the state of the plant substrate?

**Question 7**

What is difficult about the satellite-to-node relationship?

**Text number 24**

In triplet form, O  
2 molecules are paramagnetic. In other words, they give oxygen a magnetic character when it is in the presence of a magnetic field because of the spin-magnetic moments of the odd electrons of the molecule and the negative exchange energybetweenneighbouring O  
2molecules  
Liquidoxygen attracts a magnet to such an extent that, in laboratory demonstrations, a bridge of liquid oxygen can be supported against its own weight between the poles of a strong magnet[c].

**Question 0**

What is the magnetic nature of triplet O2?

**Question 1**

In experiments, a bridge can be built between the poles of a magnet, consisting of which element?

**Question 2**

What spin can cause a magnetic effect on oxygen molecules?

**Question 3**

What kind of field is needed to create a magnetic effect on oxygen molecules?

**Question 4**

What device is used to test the magnetic attraction of liquid oxygen?

**Question 5**

What are O molecules in triplet form?

**Question 6**

Why are O molecules paramagnetic?

**Question 7**

What are the poles of a powerful magnet attracting?

**Text number 25**

Reactive oxygen species, such as superoxide ion (O-  
2) and hydrogen peroxide(H  
2O  
2), are dangerousby-products of oxygen use in organisms. The immune system of higher organisms produces peroxide, superoxide and singlet oxygen to destroy invading microbes. Reactive oxygen species also play an important role in the plant hypersensitive response to pathogen attack. Oxygen is toxic to obligately anaerobic organisms, which were the dominant form of early life on Earth until O  
2 began to accumulate in the atmosphere2.5 billion years ago during the Great Oxidation Event, about a billion years after the first appearance of these organisms.

**Question 0**

What do reactive forms of oxygen produce in organisms?

**Question 1**

Why do organisms produce peroxide and superoxide?

**Question 2**

What does reactive oxygen work against in plant defence?

**Question 3**

To which organisms is oxygen toxic?

**Question 4**

When did O2 start to accumulate in the atmosphere?

**Question 5**

What is 2H02?

**Question 6**

What is the formula for reactive oxygen ion?

**Question 7**

What are the products of oxygen use in organisms?

**Question 8**

What started accumulating 5.2 billion years ago?

**Question 9**

Which event happened 5.2 billion years ago?

**Text number 26**

Oxygen condenses at 90.20 K (-182.95 °C, -297.31 °F) and freezes at 54.36 K (-218.79 °C, -361.82 °F). Both liquid and solid O  
2 are brightsubstances with a pale sky-blue colour due to the absorption of red light (as opposed to the sky-blue colour due   
to the Rayleigh scattering of blue light  
).Very pure liquid O  
2 is usually obtained  
by fractional distillation  
 of   
liquefiedair. Liquid oxygen can also be produced by condensing air using liquid nitrogen as a coolant. It is a highly reactive substance and must be kept separate from combustible materials.

**Question 0**

At what temperature does oxygen condense?

**Question 1**

What is the brightness of liquid oxygen?

**Question 2**

What substance is used to produce high quality liquid O2?

**Question 3**

What element is used as a coolant in the production of liquid oxygen?

**Question 4**

From which materials must liquid oxygen be separated?

**Question 5**

What condenses at 54.36 K?

**Question 6**

What freezes at 90.20 K?

**Question 7**

What is red in both liquid and solid form?

**Question 8**

Why is O2 red?

**Text number 27**

Free oxygen also occurs as a solution in the world's water bodies  
. The increased solubility ofO  
2  
lowertemperatures (see Physical properties) has important implications for life in the oceans, as there is much more life in polar seas because of their higher oxygen content. Water contaminated by plant nutrients such as nitrates or phosphates can promote algal growth through a process called eutrophication, and the decomposition of these organisms and other biomaterials can reduce O  
2 in eutrophicwater bodies. Researchers assess this aspect of water quality by measuringbiochemical oxygen demand of water, i.e. theamount ofO  
2needed to restore normal water levels

**Question 0**

Where on Earth is there free oxygen?

**Question 1**

At which temperatures is O2 more soluble?

**Question 2**

Why is there more life in polar waters?

**Question 3**

What measurements do scientists use to determine water quality?

**Question 4**

Water pollution with nitrates and phosphates contributes to the growth of what?

**Question 5**

Why is there less life in the polar oceans?

**Question 6**

Which pollution process contributes to the growth of nitrates?

**Question 7**

What can reduce O2 density in eutrophic water bodies?

**Question 8**

What do phosphates do to nitrate growth?

**Text number 28**

Free oxygen gas was almost non-existent in the Earth's atmosphere before photosynthetic archaea and bacteria evolved, probably about 3.5 billion years ago. Free oxygen was first present in significant quantities during the Palaeoproterozoic era (3.0-2.3 billion years ago). During the first billion years, the free oxygen produced by these organisms combined with iron dissolved in the oceans to form iron formations. When such oxygen sinks became saturated, free oxygen began to be released from the oceans between 3 and 2.7 billion years ago, reaching 10% of its current level around 1.7 billion years ago.

**Question 0**

When did photosynthetic organisms evolve on Earth?

**Question 1**

During which eon did free oxygen start to become abundant?

**Question 2**

What did oxygen and iron first combine to form?

**Question 3**

How long ago was the oxygen content 10% of what it is today?

**Question 4**

When did oxygen start to migrate from the oceans to the atmosphere?

**Question 5**

What evolved 5.3 billion years ago?

**Question 6**

Which eon occurred 3.3-2.0 billion years ago?

**Question 7**

What happened 3.7-2 billion years ago?

**Question 8**

What did oxygen achieve 1.2 billion years ago?

**Text number 29**

The unusually high concentration of oxygen gas on Earth is the result of the oxygen cycle. This biogeochemical cycle describes the movement of oxygen within and between the Earth's three main reservoirs - the atmosphere, biosphere and lithosphere. The main driving force of the oxygen cycle is photosynthesis, which is responsible for the Earth's current atmosphere. Photosynthesis releases oxygen into the atmosphere, while respiration and decomposition remove it from the atmosphere. In the current equilibrium, production and consumption occur at the same rate, i.e. about 1/2000 of the total amount of oxygen in the atmosphere per year.

**Question 0**

What produces high oxygen levels on Earth?

**Question 1**

What is the process of oxygen circulation?

**Question 2**

How many places is oxygen stored in the cycle?

**Question 3**

Which process is responsible for the oxygen content of the planet?

**Question 4**

What does photosynthesis release into the Earth's atmosphere?

**Question 5**

What does breathing release into the atmosphere?

**Question 6**

What are the three main oxygen cycles on Earth?

**Question 7**

What happens at the same rate as 1/200 of the total amount of oxygen in the atmosphere per year?

**Question 8**

Which oxygen reservoir is the driving force of the oxygen cycle?

**Text number 30**

In the second main O  
2 gas production method, clean, dry air is passed through a single layer of a pair of identical zeolite molecular sieves, whereby nitrogen is absorbed and the gas stream contains 90-93% O  
2Simultaneous nitrogen gasis released from another nitrogen-saturated zeolite bed by lowering the chamber operating pressure and passing some of the oxygen gas from the producer nitrogen through it in the opposite direction of flow. After a set cycle duration, the two layers are switched, allowing a continuous supply of gaseous oxygen through the pipeline. This is called pressure swing adsorption. Oxygen gas is increasingly being obtained by these cryogen-free techniques (see also related vacuum adsorption).

**Question 0**

What mechanism can be used to produce oxygen?

**Question 1**

What percentage of oxygen is produced by a zeolite sieve?

**Question 2**

What gas does a zeolite sieve absorb when it produces oxygen?

**Question 3**

What type of technology is non-organic separation of gases?

**Question 4**

How much screening is used in gas production?

**Question 5**

Which beds are nitrogen saturated?

**Question 6**

What is called swing pressure adsorption?

**Question 7**

What does it mean to supply a gas stream of 9-93% O2?

**Text number 31**

Oxygen gas can also be produced by electrolysis of water into molecular oxygen and hydrogen. Direct current   
electricitymust be used: if alternating current is used, the gases in each branch consist of hydrogen and oxygen in an explosive ratio of 2:1. Contrary to popular belief, the 2:1 ratio observed in DC electrolysis of acidified water does not prove that the empirical formula for water is H2O, unless certain assumptions are made about the molecular formulae of hydrogen and oxygen. A similar method is electrocatalytic O  
2 -evolutionary  
 oxidesand oxoacids. Chemical catalysts can also be used, as in chemical oxygen generators or oxygen candles, which are used as part of the life support equipment in submarines and are still standard equipment in commercial airliners in depressurisation situationsAnother air separation technique involves forcing air to dissolve through zirconium dioxide-based ceramic membranes under either high pressure or electric current to produce near-pure O  
2 gas

**Question 0**

Which electrolysis process can be used to produce oxygen and hydrogen?

**Question 1**

What does electrolysis of water produce?

**Question 2**

What kind of electric current is needed for electrolysis?

**Question 3**

What is the source of electrocatalytic oxygen production?

**Question 4**

What other catalysts can be used to produce oxygen?

**Question 5**

What can be produced by electrolysis of molecular water?

**Question 6**

Why should direct current electricity not be used?

**Question 7**

Which chemical catalysts can be used in the electrocatalytic evolution of O2?

**Question 8**

Where do oxo acids develop from?

**Text number 32**

Oxygen is supposedly a mild euphoric agent and has been used in the past for recreational purposes in oxygen bars and sports. Since the   
late 1990s, oxygen bars in Japan, California and Las Vegas, Nevada have been   
facilities that offer higher than normal O  
2 exposure for a feeProfessional athletes, especially in American football, sometimes go off the field between games to use oxygen masks"boost" their performance. The pharmacological effect is questionable; a placebo effect   
is a more likely explanation  
available studies supportperformance-enhancing effect enriched O  
2  
inhaled  
during   
aerobicexercise.

**Question 0**

How is oxygen used as a euphoric agent in bars?

**Question 1**

What is the effect of oxygen on humans?

**Question 2**

What are professional athletes trying to increase the amount of oxygen they breathe?

**Question 3**

What kind of exercise has been shown to increase performance thanks to oxygen?

**Question 4**

What is the most likely effect of breathing oxygen?

**Question 5**

What is considered a recreational euphoric substance?

**Question 6**

Which institutions have existed since 1990?

**Question 7**

Where have the oxygen bars been since 1990?

**Question 8**

Which pharmacological effect is the most likely explanation for the oxygen "effect"?

**Text number 33**

Hyperbaric medicine uses special oxygen chambers to raise the O  
aroundthe patientand, if necessary, the nursing staffCarbon monoxide poisoning, gas gangrene and decompression sickness (decompression sickness) are sometimes treated with these devices. Increasedlevels ofO  
2 in the lungs help to displace carbon monoxidefrom the haemoglobin heme fraction. Oxygen gas is toxic to the anaerobic bacteria that cause gas gangrene, so increasing its partial pressure helps to kill them. Decompression   
sicknessoccurs in divers who decompress too quickly after a dive, causing bubbles of inert gas, mainly nitrogen and helium, to form in their blood.O  
2 Pressurising assoonas possibleis part of the treatment

**Question 0**

What device is used to treat different diseases, such as carbon monoxide poisoning?

**Question 1**

What is displaced by the elevated oxygen content in the patient's lungs?

**Question 2**

To which gas-killing pathogens is oxygen toxic?

**Question 3**

What happens after a dive when a diver decompresses too quickly?

**Question 4**

What medicines are used in hyperbaric chambers?

**Question 5**

What are medical chambers used to treat?

**Question 6**

What is the toxic carbon monoxide that can cause gas gangrene?

**Question 7**

Who gets decompression sickness?

**Text number 34**

O  
2:  
taking airis  
an essential purpose of   
breathing, so in medicine oxygen supplementation is used. The treatment not only increases the oxygen content of the patient's blood, but also has the side effect of reducing circulatory resistance in many diseased lungs, thus easing the workload on the heart. Oxygen therapy is used to treat emphysema, pneumonia, some heart diseases (heart failure), some diseases that cause increased pulmonary arterial pressure and any disease that impairs the body's ability to take up and use gaseous oxygen.

**Question 0**

In which process is oxygen uptake necessary?

**Question 1**

What drug therapy is used to increase the patient's oxygenation capacity?

**Question 2**

Which organ's workload can be reduced by reducing the circulatory resistance of the lungs?

**Question 3**

What medical treatment is used for patients with heart and lung diseases?

**Question 4**

What does oxygen therapy do for the body?

**Question 5**

What is the essential purpose of supplements?

**Question 6**

In what sector is breathing used?

**Question 7**

What is oxygen therapy used for?

**Question 8**

What does treatment alone do?

**Text number 35**

Because of its electronegativity, oxygen forms chemical bonds with almost all other elements to form corresponding oxides. The surface of most metals, such as aluminium and titanium, oxidises in the presence of air and is covered by a thin film of oxide, which passivates the metal and slows down corrosion. Many oxides of transition metals are unstoichiometric compounds with slightly less metal than the chemical formula indicates. For example, the mineral FeO (wüstite) is written as Fe  
1 - xO, where x is usually about 0.05.

**Question 0**

What property of oxygen causes it to form bonds with other elements?

**Question 1**

What is the usual form of oxygen-bound compounds?

**Question 2**

What is the mineral wüstite?

**Question 3**

What does oxygen do to the surface of metals?

**Question 4**

What is delayed by the oxide film of metals?

**Question 5**

What does oxygen form bonds with?

**Question 6**

Why does oxygen form bonds with all other elements?

**Question 7**

Which mineral is written as Fe1 - oX?

**Question 8**

What is X in Fe1 - oX?

**Text number 36**

People climbing mountains or flying in unpressurised fixed-wing aircraft sometimes haveextraO  
2.[h(Pressurised) commercial aircraft passengers are automatically provided with anO  
2emergency reservein case of a cabin depressurisation. A sudden drop in cabin pressure activates the chemical oxygen generators above each seat, causing the oxygen masks to drop. When the mask is pulled to "start the flow of oxygen", as the cabin safety instructions say, iron flakes are drawn into the sodium chlorate inside the canister. The exothermic reaction produces a steady stream of oxygen gas.

**Question 0**

What event would cause air passengers to need supplementary oxygen?

**Question 1**

What type of emergency oxygen is produced by airlines?

**Question 2**

What is the reaction in the emergency oxygen generator of an aircraft?

**Question 3**

Which gas is produced by the exothermic reaction of an airline?

**Question 4**

Who sometimes has extra O accessories?

**Question 5**

Who has O in the emergency stock?

**Question 6**

If cabin pressurisation is possible, what can passengers use?

**Question 7**

What kind of reaction produces oxygen in aircraft cabins?

**Text number 37**

Oxygen storage methods include high-pressure oxygen tanks, cryogenic agents and chemical compounds. For economic reasons, oxygen is often transported in bulk as a liquid in specially insulated tankers, as one litre of liquefied oxygen is equivalent to 840 litres of gaseous oxygen at atmospheric pressure and 20°C. Such tankers are used to fill bulk liquid oxygen storage tanks outside hospitals and other facilities where large quantities of pure oxygen gas are required. The liquid oxygen is passed through heat exchangers that convert the cryogenic liquid into a gas before it enters the building. Oxygen is also stored and transported in smaller cylinders containing compressed gas, a form used in certain portable medical applications and in oxygen welding and cutting.

**Question 0**

What are oxygen containers, cryogenic substances and chemical compounds for oxygen?

**Question 1**

In which state is oxygen transported in bulk?

**Question 2**

How is oxygen transported in bulk?

**Question 3**

In what form is oxygen transported in smaller tanks?

**Question 4**

What kind of organisation would need large quantities of clean oxygen?

**Question 5**

What is the storage method for cryogenic and chemical compounds?

**Question 6**

Why is oxygen often transported in cryogenic products?

**Question 7**

What is the equivalent of 804 litres of gaseous oxygen?

**Question 8**

Which must be at a temperature of 28 °C?

**Text number 38**

The main classes of organic compounds containing oxygen are (R is the organic group): alcohols (R-OH), ethers (R-O-R), ketones (R-CO-R), aldehydes (R-CO-H), carboxylic acids (R-COOH), esters (R-COO-R), acid anhydrides (R-CO-O-CO-R) and amides (R-C(O)-NR  
2). There are polyvalentorganic solvents containing oxygen, such as acetone, methanol, ethanol, isopropanol, furan, THF, diethyl ether, dioxane, ethyl acetate, DMF, DMSO, acetic acid and formic acid. Acetone ((CH  
3)  
2CO) and phenol (C  
6H  
5OH) are used as feedstocksin the synthesis of a wide range of substances. Other important oxygen-containing organic compounds are glycerol, formaldehyde, glutaraldehyde, citric acid, acetic anhydride and acetamide. Epoxides are ethers in which the oxygen atom is part of a three-atom ring.

**Question 0**

Which compounds, such as acetone, contain oxygen?

**Question 1**

In which group of compounds is oxygen an essential element?

**Question 2**

What roles do compounds like phenol and acetone play in the manufacture of many other substances?

**Question 3**

In which compound is oxygen part of the ring arrangement?

**Question 4**

How are oxygen-containing compounds handled in the shop?

**Question 5**

Which important solvents contain oxygen?

**Question 6**

Which compounds contain oxygen?

**Question 7**

What is O-R-O?

**Question 8**

What is R-OC-R?

**Question 9**

What is R-OOC-R?

**Text number 39**

The element is present in almost all biomolecules that are important for life (or that it produces). Only a few common complex biomolecules, such as squalene and carotenes, do not contain oxygen. Of the biologically relevant organic compounds, carbohydrates contain the most oxygen by mass. All fats, fatty acids, amino acids and proteins contain oxygen (because these acids and their ester residues contain carbonyl groups). Oxygen is also presentin phosphate groups(PO3-  
4) in the biologicallyimportant energy molecules ATP and ADP, in the backbone and purines of RNA and DNA (except adenine) and pyrimidine, and in bones as calcium phosphate and hydroxylapatite.

**Question 0**

What molecules is oxygen found in?

**Question 1**

How many biomolecules do not contain oxygen?

**Question 2**

Which organic compounds contain the most oxygen by mass?

**Question 3**

Which other organic compounds contain oxygen in addition to fats, fatty acids and amino acids?

**Question 4**

Which calcium-containing part of the body does oxygen belong to?

**Question 5**

What are the elements in all biomolecules?

**Question 6**

What element do squalene and carotenes contain?

**Question 7**

What are APT and ADP?

**Question 8**

Which carbohydrates have the highest mass?

**Text number 40**

Oxygen toxicity to the lungs and central nervous system   
can also occur in deep and surface dProlonged inhalation of an air mixture with an O  
2 partial pressure above 60 kPa can eventually lead to permanentpulmonary fibrosis. Exposure to O  
2 partial pressures above 160kPa (about 1.6 atm) can lead to convulsions (usually fatal for divers). Acute oxygen poisoning (which causes convulsions, its most feared effect on divers) can occur from inhaling a mixture of air containing 21% O  
2 at a depth of 66 metres or more; the same can happen from inhaling 100% O  
2 at a depth of only 6 metres

**Question 0**

What health conditions can deep-sea diving cause?

**Question 1**

What can result from prolonged breathing of oxygen at 60 kPa?

**Question 2**

What higher pressures can lead to seizures?

**Question 3**

What is the most feared space that divers want to avoid?

**Question 4**

What physical condition can cause acute oxygen poisoning?

**Question 5**

What can happen when you breathe oxygen at 60 atm?

**Question 6**

What can be caused by exposure to a partial pressure of gas above 166 kPa?

**Question 7**

What can happen when you breathe 26% O2 at 62 metres?

**Question 8**

What can happen if you breathe 100% O2?

**Text number 41**

Breathingpure O  
2in space applicationssuch as some modern space suits or early spacecraft like the Apollo, does not  
cause damage because the overall pressure is low. For spacesuits, the O  
2 sub-pressure in the breathing gas is generally30 kPa (1.4 times normal), and the resulting O  
2 sub-pressure in the astronaut's arterial blood is onlyslightly higher than the normal O  
2 sub-pressureatsea(for more information on this see spacesuit and arterial blood gas)

**Question 0**

Why is breathing oxygen in a spacecraft not dangerous to your health?

**Question 1**

What is the partial pressure of oxygen in spacesuits?

**Question 2**

How much oxygen is normal to breathe in spacesuits?

**Question 3**

What is the comparison with sea level and oxygen levels in spacesuits?

**Question 4**

How much damage does breathing oxygen in space cause?

**Question 5**

What damage was caused by breathing pure O in space applications?

**Question 6**

Why did inhaling pure O in space cause no harm?

**Question 7**

What is measured at 1.4 kPa?

**Question 8**

What is the partial pressure of O in the breathing gas?

**Text number 42**

Oxygen gas (O  
2) can be toxic at highpartial pressures, which can cause seizures and other health problems.[j] Oxygen toxicity usually begins to occur at partial pressures above 50 kilopascals (kPa), equivalent to about 50 percent oxygen composition at constant pressure or 2.5 times the normal sea level O  
2 partial pressure of about 21 kPa. This is not a problem,  
for patients using   
a diaphragmaticventilator, because in medical applications the gas delivered through oxygen masks is usually only 30-50%O  
2  
volume(about 30 kPa at constant pressure) (although this figure also varies greatly depending on the type of mask).

**Question 0**

When can oxygen gas cause a toxic condition?

**Question 1**

At what point does oxygen toxicity start to occur?

**Question 2**

What is the equivalent of 50 kilopascals?

**Question 3**

Which medical device can cause concern about oxygen poisoning?

**Question 4**

What percentage of oxygen does a medical mask usually produce?

**Question 5**

When can partial oxygen be toxic?

**Question 6**

What is the equivalent of 5% oxygen consumption?

**Question 7**

What does kAp mean?

**Question 8**

What consists of 21-50% by volume of O2?

**Document number 450**

**Text number 0**

The 1973 oil crisis began in October 1973, when the members of the Organisation of Petroleum Exporting Countries (OAPEC, which consists of the Arab members of OPEC plus Egypt and Syria) declared an oil embargo. By the end of the embargo in March 1974, oil prices worldwide had risen from $3 a barrel to almost $12; in the United States, prices were considerably higher. The blockade triggered an oil crisis, or 'shock', which had many short- and long-term effects on world politics and the global economy. It was later called the 'first oil shock', followed by the oil crisis of 1979, which was called the 'second oil shock'.

**Question 0**

When did the 1973 oil crisis start?

**Question 1**

What was the price of oil in March 1974?

**Question 2**

When was the second oil crisis?

**Question 3**

What was another term used for the oil crisis?

**Question 4**

Who declared the oil embargo?

**Question 5**

When did OPEC start?

**Question 6**

What action did the United States take that triggered the second oil shock?

**Question 7**

What was the price of oil in 1979 before it went up?

**Question 8**

What was the global oil price in 1979?

**Question 9**

Which term describes what happened in 1979 when oil prices in the US were higher?

**Question 10**

In which month did the oil crisis start?

**Question 11**

Who were the OAPEC members involved?

**Question 12**

What was the name of the oil crisis

**Question 13**

What happened after this oil crisis?

**Question 14**

What caused the crisis?

**Text number 1**

The crisis had a major impact on international relations and caused discord within NATO. Some European countries and Japan sought to distance themselves from US foreign policy in the Middle East to avoid being boycotted. Arab oil producers linked any future political changes to peace between the warring parties. The Nixon administration therefore initiated multilateral negotiations with the warring parties. They arranged Israel's withdrawal from the Sinai Peninsula and the Golan Heights. By 18 January 1974, US Secretary of State Henry Kissinger had negotiated the withdrawal of Israeli forces from parts of the Sinai Peninsula. The promise of a negotiated settlement between Israel and Syria was enough to convince Arab oil producers to lift the embargo in March 1974.

**Question 0**

Why did European countries and Japan separate themselves from the United States during the crisis?

**Question 1**

How did the Nixon administration negotiate with uncooperative countries?

**Question 2**

On what day did Henry Kissinger negotiate the withdrawal of Israeli troops from the Sinai Peninsula?

**Question 3**

When did Arab oil producers lift the embargo?

**Question 4**

How did the crisis affect the Arabs?

**Question 5**

What did Israel and Syria do to avoid a boycott?

**Question 6**

What did Arab oil producers have in common with Japan?

**Question 7**

What did NATO negotiate?

**Question 8**

What did Japan raise in March 1974?

**Question 9**

Where did the oil crisis cause the abyss?

**Question 10**

Which European nations and which country broke away from the United States for this reason?

**Question 11**

Who linked future political changes to peace?

**Question 12**

What negotiations did the Nixon administration start?

**Question 13**

Which country was supposed to withdraw from the Sinai Peninsula?

**Text number 2**

On 15 August 1971, the United States unilaterally withdrew from the Bretton Woods Agreement. The United States abandoned the gold standard, under which the value of the dollar was pegged to the price of gold and all other currencies were pegged to the dollar, whose value was left to "float" (rise and fall according to market demand). Shortly afterwards, the UK followed suit and liberalised sterling. Other industrialised countries followed suit with their own currencies. Anticipating that currency values would fluctuate unpredictably for some time, the industrialised countries increased their reserves (by expanding their money reserves) to much higher levels. The result was a depreciation of the dollar and other developed country currencies. As oil was priced in dollars, the real incomes of oil producers fell. In September 1971, OPEC issued a joint communiqué announcing that from now on it would price oil in a fixed amount of gold.

**Question 0**

When did the United States withdraw from the Bretton Woods agreement?

**Question 1**

What does it mean when currencies are left "floating"?

**Question 2**

Why did the developed world's dollars weaken?

**Question 3**

When did oil start to be priced according to gold?

**Question 4**

Why did oil start to be priced in gold?

**Question 5**

In what year did OPEC withdraw from the Bretton Woods agreement?

**Question 6**

What happened to the value of other currencies when the US gave up oil?

**Question 7**

What was Britain doing in September 1971?

**Question 8**

Why did the OPEC dollar fall in value?

**Question 9**

When was oil priced in sterling?

**Question 10**

Where did the United States withdraw from in 1971?

**Question 11**

What did the United States give up?

**Question 12**

What does the value of the dollar do?

**Question 13**

What does the floating of the dollar mean?

**Question 14**

When did OPEC adopt the Joint Communication?

**Text number 3**

This contributed to the "oil shocks". After 1971, OPEC was slow to adjust prices to reflect this depreciation. Between 1947 and 1967, the dollar price of oil had risen by less than 2% a year. Before the oil shocks, the price had also remained fairly stable against other currencies and commodities. OPEC ministers had not developed institutional mechanisms to update prices in line with changing market conditions, so their real income lagged behind. The substantial price increases of 1973-1974 largely restored their prices and corresponding incomes to Bretton Woods levels in terms of commodities such as gold.

**Question 0**

How much did the price of oil rise between 1947 and 1967?

**Question 1**

When did OPEC start to readjust the price of oil?

**Question 2**

When did oil finally return to Bretton Woods levels?

**Question 3**

Oil prices are generally a stable commodity until when?

**Question 4**

How much had the price of gold risen since 1971?

**Question 5**

What was the price of gold before the oil shock?

**Question 6**

What happened to the Bretton Woods revenues because prices were out of sync with the market?

**Question 7**

When did the institutional mechanisms finally return to the Bretton Woods level?

**Question 8**

When did commodities adjust to oil prices?

**Question 9**

Who was slow to adjust prices?

**Question 10**

In what years did the dollar price of oil rise by 2% a year?

**Question 11**

What happened between 1973 and 1974?

**Question 12**

Prices remained stable until when?

**Text number 4**

On October 6, 1973, Syria and Egypt, with the support of other Arab countries, launched a surprise attack against Israel on Yom Kippur. This renewal of hostilities in the Arab-Israeli conflict released the economic pressure on oil prices. Iran was at the time the world's second largest oil exporter and a close ally of the US. Weeks later, the Shah of Iran said in an interview, "Of course [oil prices] will rise... Sure! And how!... You [the West] have raised the price of the wheat you sell us by 300%, and the same goes for sugar and cement... You buy our crude oil and sell it back to us refined into petrochemical products at a hundred times the price you have paid us... It is only fair that from now on you should pay more for your oil. Let's say ten times more."

**Question 0**

When did Syria and Egypt launch a surprise attack on Israel?

**Question 1**

Who was the world's second largest oil producer?

**Question 2**

How many times more did other countries have to pay for oil after the surprise attack?

**Question 3**

Which oil producer is a close ally of the US?

**Question 4**

Why did the Shah of Iran give the interview?

**Question 5**

What did Iran do on Yom Kippur on 6 October 1973?

**Question 6**

Who was the world's second largest wheat exporter to the Middle East?

**Question 7**

What did Syria decide the price of oil should be after the attack?

**Question 8**

What did Egypt say about Iran raising the price of the wheat it sells?

**Question 9**

At what price does Syria sell refined oil to the Middle East?

**Question 10**

What happened on 6 October 1973 with Syria and Egypt?

**Question 11**

On what holiday did Syria and Egypt launch an attack?

**Question 12**

How big an oil exporter was Iran?

**Question 13**

What was Iran's relationship with the United States at the time?

**Question 14**

How much did they say was fair to raise prices?

**Text number 5**

In response to US aid to Israel, OPEC raised the price of oil by 70% to $5.11 a barrel on 16 October 1973. The following day, the oil ministers agreed to a trade embargo, to cut production by 5% of September's output and to continue cutting production in 5% monthly increments until economic and political objectives were met. On 19 October, Nixon asked Congress to provide Israel with $2.2 billion in emergency aid, including $1.5 billion in direct assistance. George Lenczowski writes: "Military supplies did not exhaust Nixon's enthusiasm to prevent Israel's collapse...". This [$2.2 billion] decision triggered a joint OPEC response." Libya immediately announced a ban on oil shipments to the US. Saudi Arabia and other oil-producing Arab states joined the embargo on 20 October 1973. At its meeting in Kuwait, OAPEC declared an embargo that curbed exports to various countries and blocked all oil shipments to the United States as the "principal hostile country".

**Question 0**

Why did OPEC raise oil prices to $5.11?

**Question 1**

When did they raise the price of oil to $5.11?

**Question 2**

Why did the oil ministers agree to cut oil production?

**Question 3**

How much emergency aid was given to Israel?

**Question 4**

Why did OPEC block oil supplies to the US?

**Question 5**

What did Geroge Lenczowski do to the price of oil on 16 October 1973?

**Question 6**

What did different countries ask Congress to do?

**Question 7**

Which decision prompted the response of the main hostile country?

**Question 8**

What was the immediate announcement by Kuwait?

**Question 9**

What did Nixon join on 20 October 1973?

**Question 10**

What did OPEC do to oil prices on 16 October?

**Question 11**

How many percent did OPEC raise the price of oil?

**Question 12**

What was the price of oil after the increase?

**Question 13**

Who announced a ban on oil supplies to the US?

**Question 14**

When did Saudi Arabia join the embargo?

**Text number 6**

Part of the revenue was distributed as grants to other underdeveloped countries whose economies had suffered between rising oil prices and falling prices for their own exports as Western demand fell. Much of it was spent on arms purchases, which exacerbated political tensions, particularly in the Middle East. Saudi Arabia spent over $100 billion in the following decades to help spread its fundamentalist interpretation of Islam, known as Wahhabism, around the world through religious charities such as the al-Haramain Foundation, which often also distributed funds to violent Sunni extremist groups such as al-Qaeda and the Taliban.

**Question 0**

How much did Saudi Arabia spend to spread Wahhabism?

**Question 1**

Which group benefited from the funds distributed by the religious charity, al-Haramain Foundation?

**Question 2**

Part of the revenue was used to buy weapons, which increased political tensions, especially in which region?

**Question 3**

What is one reason why underdeveloped countries were subsidised by oil revenues?

**Question 4**

What is a fundamentalist interpretation of Islam?

**Question 5**

How much did Saudi Arabia spend on Western oil demand?

**Question 6**

Some of the export commodities used to buy oil helped create tensions where?

**Question 7**

When did Saudi Arabia spend 100 billion on oil?

**Question 8**

What is the fundamentalist interpretation of al-Haramain?

**Question 9**

What is one reason why Al-Qaeda received help from extremists?

**Text number 7**

In the United States, researchers argue that even before 1973, there was a negotiated settlement based on equality between the two sides. The possibility that the Middle East could become another superpower confrontation with the Soviet Union worried the US more than oil. Moreover, interest groups and government agencies more concerned about energy were no match for Kissinger's supremacy. In the US, production, distribution and price shocks 'have been responsible for recession, excessive inflation, declining productivity and slowing economic growth. "

**Question 0**

What is one reason why US manufacturing has been held responsible for the recession and economic slowdown?

**Question 1**

The US is concerned about the confrontation in the Middle East with which other country?

**Question 2**

The researchers found that there was already an agreement between the two sides before what date?

**Question 3**

Energy-concerned interest groups and government agencies were no match for whom?

**Question 4**

What has the Soviet Union been held responsible for in terms of oil?

**Question 5**

What is the US more worried about than inflation?

**Question 6**

Where did the Middle East not fit in?

**Question 7**

What was already in the Soviet Union before 1973?

**Question 8**

What were the Soviet Union and the United States more concerned about?

**Text number 8**

The blockade had a negative impact on the US economy, as it created immediate demands to address threats to US energy security. At the international level, the rise in prices changed competitive positions in many industries, including the automotive sector. Macroeconomic problems consisted of both inflationary and deflationary effects. The blockade left oil companies looking for new ways to increase oil supplies, even in difficult terrain such as the Arctic. It usually took five to ten years to find oil and develop new fields before significant production was achieved.

**Question 0**

What is negatively affecting the US economy?

**Question 1**

Which industry's competitive position is affected at international level?

**Question 2**

Which problem consists of both inflationary and deflationary effects?

**Question 3**

The oil crisis prompted oil companies to increase oil supplies in which region?

**Question 4**

How long will it take before there is significant oil production in the new areas?

**Question 5**

What were the negative impacts of the development of new oil fields?

**Question 6**

How did the development of new oil fields affect the US economy?

**Question 7**

What has energy security done at international level?

**Question 8**

What is the problem with the drive to increase oil supplies and the threats to US energy security?

**Question 9**

What macroeconomic problems led oil companies to look for?

**Text number 9**

The blockade was not uniform throughout Europe. Of the nine members of the European Economic Community (EEC), the Netherlands suffered a total embargo, the UK and France received almost uninterrupted supplies (because they had refused to allow the US to use their airports and had embargoed arms and supplies to both Arabs and Israelis), while six others suffered partial cuts. The UK had traditionally been an ally of Israel, and Harold Wilson's government supported the Israelis during the Six Day War. His successor, Ted Heath, changed this policy in 1970 and called for Israel to withdraw to the pre-1967 borders.

**Question 0**

Which country was placed under a total embargo by the EEC?

**Question 1**

The UK and France did not stop oil supplies because they did not allow any country to use their airport?

**Question 2**

Which country is Israel's traditional ally?

**Question 3**

Harold Winston's support for which country during the Six Day War?

**Question 4**

Who wanted Israel to withdraw from the border?

**Question 5**

What was the embargo like in Israel?

**Question 6**

What did the Netherlands not allow America to use during the embargo?

**Question 7**

Who did the EEC support during the Six Day War?

**Question 8**

Whose traditional ally is France?

**Question 9**

What did Harold Wilson urge Israel to do in 1970?

**Text number 10**

Although the embargo did not affect the UK, it did face its own oil crisis - the series of strikes by coal miners and railway workers in the winter of 1973-74 became a major factor in the change of government. Heath asked Britons to heat just one room in their houses during the winter. The UK, Germany, Italy, Switzerland and Norway banned flying, driving and boating on Sundays. Sweden rationed petrol and heating oil. The Netherlands imposed prison sentences for those who used more electricity than their ration.

**Question 0**

Which country has not been badly affected by the embargo?

**Question 1**

What caused the UK to have an oil crisis in its own country?

**Question 2**

When did the series of attacks take place?

**Question 3**

Name one country that has banned boating, driving and flying on Sundays.

**Question 4**

Which country rationed petrol and heating gas?

**Question 5**

What did the UK ban on Sunday because of the embargo?

**Question 6**

What did the railwaymen ration?

**Question 7**

What happened in the UK if you used more electricity than your dose?

**Question 8**

Which countries are not affected by a change of government?

**Question 9**

What did Heath ask Norway to do during the winter?

**Text number 11**

Price controls exacerbated the crisis in the US. The system limited the price of "old oil" (oil already discovered) while allowing new oil to be sold at a higher price to encourage investment. Old oil was predictably withdrawn from the market, increasing the scarcity of oil. The rule also prevented the development of alternative forms of energy. The purpose of the rule was to encourage oil exploration. Scarcity was addressed by rationing (as in many countries). Motorists faced long queues at petrol stations from the summer of 1972 and these increased by the summer of 1973.

**Question 0**

What exacerbated the oil crisis in the US?

**Question 1**

Why is newly discovered oil being sold at a higher price?

**Question 2**

Why was the old oil withdrawn from the market?

**Question 3**

How was scarcity managed in many countries?

**Question 4**

Why was old oil sold at a higher price?

**Question 5**

What happened when the new oil was withdrawn from the market?

**Question 6**

What was regulation intended to promote in the market?

**Question 7**

What measures have been taken to tackle price controls?

**Question 8**

How did old oil affect motorists in many countries?

**Text number 12**

In 1973, Nixon appointed William E. Simon as the first administrator of the Federal Energy Office, a short-term organization created to coordinate the response to the embargo. Simon allocated to the states for 1974 the same amount of domestic oil as each had consumed in 1972, which suited states with no population growth. In other states, there were often queues at gas stations. The American Automobile Association reported that in the last week of February 1974, 20 percent of American gasoline stations were out of fuel.

**Question 0**

Who is the first administrator of the Federal Energy Agency?

**Question 1**

When did Nixon pick him?

**Question 2**

Why was this short-term organisation set up?

**Question 3**

According to AAA, what is the percentage of petrol stations that ran out of petrol?

**Question 4**

What percentage of American gas stations were fuel-less in 1973?

**Question 5**

What was Nixon's name in 1973?

**Question 6**

What was the American Automobile Association founded for?

**Question 7**

How much oil did Nixon give to the states in 1974?

**Question 8**

What was common in states with no population growth?

**Text number 13**

To reduce consumption, a national maximum speed limit of 55 mph (about 88 km/h) was introduced in 1974 by the Emergency Highway Energy Conservation Act. Development of a strategic petroleum reserve began in 1975, and a cabinet-level Department of Energy was established in 1977, followed by the National Energy Policy Act of 1978. On November 28, 1995, Bill Clinton signed the National Highway Designation Act, which ended the federal 55 mph speed limit and allowed states to reinstate the previous maximum speed limit.

**Question 0**

What is the speed limit set to reduce consumption?

**Question 1**

What is the name of the law that set the speed limit?

**Question 2**

Who was the president who ended the emergency law on energy saving measures?

**Question 3**

When was the national highway designation law signed?

**Question 4**

When was the Cabinet-level Ministry of Energy established?

**Question 5**

What was enacted on 28 November 1995 by the Emergency Highway Energy Conservation Act?

**Question 6**

What is the name of the president who set the speed limit?

**Question 7**

What did the Department of Energy stop doing in 1974?

**Question 8**

What did the Department of Energy stop doing on 28 November 1995?

**Question 9**

Which speed was prevented by the national road sign law?

**Text number 14**

The energy crisis led to increased interest in renewables, nuclear power and domestic fossil fuels. Criticism has been levelled at the fact that post-crisis US energy policy has been dominated by a crisis mentality, promoting costly quick fixes and one-off solutions that do not take into account market and technological realities. Instead of providing stable rules that support basic research and leave ample room for entrepreneurship and innovation, Congress and presidents have repeatedly supported policies that promise politically expedient solutions with questionable prospects.

**Question 0**

What triggered the increased interest in renewable resources?

**Question 1**

Criticism has been levelled that energy policy is an expensive quick fix that ignores what facts?

**Question 2**

Who has supported policies whose solutions sound good but whose prospects are poor?

**Question 3**

What types of energy attracted interest in one-off solutions?

**Question 4**

How have American entrepreneurs been criticised since the crisis?

**Question 5**

What policies have been promoted thanks to nuclear power?

**Question 6**

What are the results of a renewable energy policy?

**Question 7**

What has politically correct nuclear policy contributed to in America?

**Text number 15**

In 2004, classified documents revealed that the United States was so alarmed by rising oil prices and the challenges posed by underdeveloped countries that it briefly considered military action to take the oil fields of the Middle East by force in late 1973. Although no specific plan was mentioned, a conversation between the US Defence Secretary James Schlesinger and the British Ambassador to the US, Lord Cromer, revealed that Schlesinger had told him that 'it was no longer obvious to him that the United States could not use force'. British Prime Minister Edward Heath was so concerned about this prospect that he commissioned a British intelligence assessment of US intentions which stated that the US 'might feel that it could not tolerate a situation where the US and its allies were at the mercy of a small group of irrational countries' and that they would prefer a rapid operation to seize oil fields in Saudi Arabia and Kuwait and possibly Abu Dhabi if military action was decided upon. Although the Soviet response to such an act would probably not involve force, the intelligence service warned that "an American occupation would have to last 10 years while the West developed alternative energy sources, and would lead to the 'total alienation' of the Arabs and most of the rest of the Third World".

**Question 0**

Which country was considering war to take over the oil fields of the Middle East by force?

**Question 1**

Which country was worried that the US would invade the Middle East?

**Question 2**

How long should it take to conquer the Middle East in order to develop renewable resources?

**Question 3**

Who would be alienated by the occupation?

**Question 4**

What action was the United States going to take in 2004 in response to the rise in oil prices?

**Question 5**

What revealed British intentions in the Middle East about oil prices in 2004?

**Question 6**

What had Edward Heath told Lord Cromer about the Middle East?

**Question 7**

What did British Ambassador Lord Cromer order because he was concerned about US actions in the Middle East?

**Question 8**

What would be Kuwait's response to US action?

**Text number 16**

Although Japan had no historical links with the Middle East, it was the country most dependent on Arab oil. In 1970, 71% of its imported oil came from the Middle East. On 7 November 1973, the governments of Saudi Arabia and Kuwait declared Japan a 'non-friendly' country to encourage it to change its non-alignment policy. In December, it received a 5% cut in production, causing a panic. On 22 November, Japan issued a statement in which it "affirmed that Israel should withdraw from all 1967 territories, supported Palestinian self-determination and threatened to reconsider its policy towards Israel if Israel refused to accept these preconditions". By 25 December, Japan was considered a pro-Arab state.

**Question 0**

Which country is most dependent on Arab oil?

**Question 1**

How much imported oil comes from the Middle East?

**Question 2**

What did the governments of Saudi Arabia and Kuwait do to force Japan to become more involved in the crisis?

**Question 3**

When did Japan issue a statement calling on the Israelis to withdraw from Palestine?

**Question 4**

When was Japan recognised as an Arab-friendly country?

**Question 5**

Which country has the most non-violent policies?

**Question 6**

What action was taken against Japan on 25 December to change its policy?

**Question 7**

What did Israel do to Japan's imported oil to force its involvement in the crisis?

**Question 8**

When was Israel declared an unfriendly country?

**Question 9**

When Japan received 71% of its oil imports from the Middle East in December, what was the public reaction?

**Text number 17**

The Soviet invasion of Afghanistan was just one sign of insecurity in the region, which was also marked by increased US arms sales, technology and outright military presence. Saudi Arabia and Iran became increasingly dependent on US security guarantees to manage both external and internal threats, including increased military competition between them for increased oil revenues. Both states competed for an advantage in the Gulf and used the increased revenues to finance expanded militaries. By 1979, Saudi Arabia's arms purchases from the United States were five times greater than Israel's. Another reason for Saudi Arabia's large-scale arms purchases from the United States was that in January 1979 the Shah failed to control Iran, a non-Arab but largely Shi'ite-dominated state which, following the 1979 Iranian Revolution, came under the rule of a theocratic Islamist government led by Ayatollah Ruhollah Khomeini. Saudi Arabia, on the other hand, is an Arab, predominantly Sunni Muslim state governed by a quasi-absolutist monarchy. After the Iranian revolution, the Saudis were forced to deal with the possibility of internal instability through the radicalisation of Islamism, which was quickly exposed when Wahhabi extremists seized the Grand Mosque of Mecca in November 1979 and when a Shiite insurgency broke out in Saudi Arabia's oil-rich Al-Hasa region in December that year. In November 2010, Wikileaks leaked confidential diplomatic cables about the US and its allies, revealing that the late King Abdullah of Saudi Arabia urged the US to attack Iran to destroy its potential nuclear weapons programme and described Iran as a "snake whose head should be cut off without delay".

**Question 0**

Which country's invasion shows the insecurity of the Middle East?

**Question 1**

Which countries became dependent on the US security guarantee against threats?

**Question 2**

Which country's arms purchases from the US grew 5 times as much as Israel's?

**Question 3**

When did the Shah's empire begin to collapse?

**Question 4**

When did the Wahhabis take over the Grand Mosque in Mecca?

**Question 5**

Which country was invaded by Saudi Arabia in 1979?

**Question 6**

What other signs of insecurity are there in Mecca?

**Question 7**

What was the Gulf dependent on Saudi control?

**Question 8**

What is another reason why Al-Hasa bought arms from Russia?

**Question 9**

What kind of Sunni Muslim monarchy will rule Iran?

**Text number 18**

The crisis reduced demand for large cars. Cars imported from Japan, mainly the Toyota Corona, Toyota Corolla, Datsun B210, Datsun 510, Honda Civic, Mitsubishi Galant (Chrysler's forced import sold as the Dodge Colt), Subaru DL and later the Honda Accord, had four-cylinder engines that were more fuel efficient than typical American V8 and six-cylinder engines. Japanese imports became mass market leaders as their body structure and front-wheel drive became de facto standards.

**Question 0**

What were the least popular car sizes during the crisis?

**Question 1**

Which country's cars were more in demand because they were more fuel efficient?

**Question 2**

What kind of engines do American cars typically have?

**Question 3**

Which country's imports effectively became the leaders of the mass market?

**Question 4**

What standards did American cars set for the car industry?

**Question 5**

Which two cars with V8 engines were more fuel efficient?

**Question 6**

What kind of body structure does an American car usually have?

**Question 7**

Which country became the leading importer of large cars?

**Question 8**

What increased the demand for six-cylinder cars?

**Text number 19**

Some buyers complained about the small size of the first Japanese compacts, and both Toyota and Nissan (then known as Datsun) introduced larger cars such as the Toyota Corona Mark II, Toyota Cressida, Mazda 616 and Datsun 810, which added passenger space and amenities such as air conditioning, power steering, AM-FM radio and even power windows and central locking, without increasing the price of the car. Ten years after the 1973 oil crisis, Honda, Toyota and Nissan, affected by the 1981 voluntary export restrictions, opened US assembly plants and set up their luxury divisions (Acura, Lexus and Infiniti) to differentiate themselves from their mass-market brands.

**Question 0**

When did Honda, Toyota and Nissan open their US assembly plants?

**Question 1**

Name the larger car that Toyota developed when buyers complained about compact cars?

**Question 2**

Name one additional component that was added to the production of compact products.

**Question 3**

Name Toyota's luxury division.

**Question 4**

Which Mazda opened in 1973 in the United States?

**Question 5**

What was Mazda founded in the United States in 1973?

**Question 6**

What did Mazda want to differentiate itself from by opening assembly plants in 1973?

**Question 7**

What did some buyers not like about Acura?

**Question 8**

Which two things were added to the Lexus in 1981?

**Text number 20**

Compact trucks such as the Toyota Hilux and Datsun Truck were introduced, followed by the Mazda Truck (sold as the Ford Courier) and the Isuzu-based Chevrolet LUV. Mitsubishi rebranded its Forte as the Dodge D-50 a few years after the oil crisis. Mazda had joint partnerships with Ford, Chrysler and GM, Mitsubishi and Isuzu respectively. Later, the American manufacturers introduced their domestic replacements (Ford Ranger, Dodge Dakota and Chevrolet S10/GMC S-15), thus ending their import obligations.

**Question 0**

Name Toyota's compact truck type?

**Question 1**

Why did Mitsubishi rename its Forte?

**Question 2**

Mazda, Mitsubishi and Isuzu in partnership with which American car manufacturer?

**Question 3**

When American car manufacturers launched their domestic substitutes, what policy ended?

**Question 4**

What name did Toyota rebrand the Forte under?

**Question 5**

What is a Dodge-built light truck?

**Question 6**

Which companies did Toyota, Chevrolet and Dodge have joint partnerships with?

**Question 7**

When Japanese companies launched compact trucks, what policy ended?

**Question 8**

What compact trucks has Toyota launched?

**Text number 21**

The increase in the number of cars imported into North America forced General Motors, Ford and Chrysler to introduce smaller and more fuel-efficient models for domestic sales. By the late 1970s, Chrysler's Dodge Omni/Plymouth Horizon, Ford Fiesta and Chevrolet Chevette were equipped with four-cylinder engines and had room for at least four passengers. By 1985, the average American vehicle was getting 17.4 miles to the gallon, up from 13.5 miles to the gallon in 1970. Improvements were maintained even though the price of a barrel of oil remained constant at $12 between 1974 and 1979. Sales of large sedans recovered for most makes (except Chrysler) within two model years of the 1973 crisis. The Cadillac DeVille and Fleetwood, Buick Electra, Oldsmobile 98, Lincoln Continental, Mercury Marquis and many other luxury-oriented sedans became popular again in the mid-1970s. The only full-size models that did not recover were lower-priced models like the Chevrolet Bel Air and Ford Galaxie 500. Slightly smaller mid-size models such as the Oldsmobile Cutlass, Chevrolet Monte Carlo, Ford Thunderbird and many others sold well.

**Question 0**

Why did GM, Ford and Chrysler bring fuel-efficient and small cars to the US market?

**Question 1**

How many passengers can you fit in a Ford Fiesta?

**Question 2**

By what year did the mpg of American cars start to improve?

**Question 3**

Name the luxury model that became popular in the mid-1970s.

**Question 4**

Which full-size model cars were not popular?

**Question 5**

What did rising oil prices force GM, Ford and Chrysler to do?

**Question 6**

What was the average mpg of American cars in 1979?

**Question 7**

What was the price of a barrel of oil in 1970?

**Question 8**

What are the two small car models that did not recover in 1974?

**Question 9**

How many passengers did the Chevrolet Bel Air model carry in 1970?

**Text number 22**

Federal safety standards such as NHTSA's Federal Motor Vehicle Safety Standard 215 (which applies to safety bumpers) and compact vehicles like the 1974 Mustang I were the prelude to the DOT's "downsizing" of vehicle classes. By 1977, GM's full-size cars reflected the crisis. By 1979, almost all American full-size cars had shrunk, with smaller engines and smaller exteriors. Chrysler ceased production of its full-size luxury sedans at the end of the 1981 model year and switched instead to front-wheel drive cars in 1982 (with the exception of the M-body Dodge Diplomat/Plymouth Gran Fury and Chrysler New Yorker Fifth Avenue sedans).

**Question 0**

By what year did full-size American cars shrink in size?

**Question 1**

By what year did Chrysler discontinue its full-size luxury model?

**Question 2**

Which car shows a DOT class check?

**Question 3**

What happened to safety bumpers in 1979?

**Question 4**

When did Dodge stop producing its full-size sedans?

**Question 5**

What vehicle categories did the Plymouth Gran Fury belong to?

**Question 6**

What type of vehicle did Chrysler move to in 1977?

**Question 7**

What are the two changes made to GM vehicles in 1982?

**Text number 23**

OPEC soon lost its dominant position, and in 1981 its production overtook that of other countries. Moreover, its own member countries were divided. Saudi Arabia, trying to regain market share, increased production, which put downward pressure on prices and reduced or eliminated profits for high-cost producers. The world price, which had peaked at nearly $40 a barrel during the 1979 energy crisis, fell to less than $10 a barrel in the 1980s. Adjusted for inflation, oil briefly fell back to pre-1973 levels. This 'selling price' was a windfall for oil-importing countries, both developing and developed.

**Question 0**

When did OPEC oil production surpass OPEC?

**Question 1**

What year did the price of oil fall to $10 a barrel?

**Question 2**

Why did Saudi Arabia try to increase production and reduce profits for high-cost producers?

**Question 3**

What was the highest oil price in 1979 during the oil crisis?

**Question 4**

In what year did Saudi Arabia exceed the oil production of other countries?

**Question 5**

What did OPEC do to gain market share in 1979?

**Question 6**

What were the two consequences of OPEC pushing down the price of oil in 1981?

**Question 7**

What was the peak of the world oil price in 1973?

**Question 8**

How low did oil prices fall during the 1979 oil crisis?

**Document number 451**

**Text number 0**

European Union law consists of treaties and legislation, such as regulations and directives, which have a direct or indirect effect on the laws of the Member States of the European Union. The three sources of European Union law are primary law, secondary law and supplementary law. The main sources of primary law are the Treaties establishing the European Union. Secondary sources are regulations and directives based on the Treaties. The European Union's legislature consists mainly of the European Parliament and the Council of the European Union, which, according to the Treaties, may adopt secondary legislation to achieve the objectives set out in the Treaties.

**Question 0**

What is European Union law?

**Question 1**

What are the main sources of primary legislation?

**Question 2**

What are the secondary sources of primary law?

**Question 3**

Which two bodies make up the legislative body of the European Union?

**Question 4**

What is European Union law?

**Question 5**

How does European Union legislation affect national legislation?

**Question 6**

What are the three sources of European Union law?

**Question 7**

What are the main legislative bodies of the European Union?

**Question 8**

What are the three main sources of European Union legislation?

**Question 9**

What are the main sources of primary legislation?

**Question 10**

What makes up the European Union's legislature?

**Question 11**

How many sources of European Union law are there?

**Question 12**

What are the three sources of American Union law?

**Question 13**

What is American Union law?

**Question 14**

Which are not the three sources of European Union law?

**Question 15**

What is the last source of European Union law?

**Question 16**

What is the American Union legislature made up of?

**Text number 1**

European Union law is applied by the courts of the Member States and the Court of Justice of the European Union. Where national law provides for lesser rights, national courts can enforce European Union law. In the case of European Union law that should have been transposed into national law, such as directives, the European Commission can bring an action against a Member State under the Treaty on the Functioning of the European Union. The European Court of Justice is the highest court that can interpret EU law. The case law of the Court of Justice, international law and general principles of European Union law are complementary sources of European Union law.

**Question 0**

Who applies European Union law?

**Question 1**

Who can enforce European Union law when Member States give fewer rights?

**Question 2**

What is the Supreme Court of the European Union?

**Question 3**

What is one of the complementary sources of European Union law?

**Question 4**

Which two courts apply European Union law?

**Question 5**

Under which Treaty can the European Commission take action against Member States?

**Question 6**

What is the Supreme Court of the European Union?

**Question 7**

What is one complementary source of European Union law?

**Question 8**

Who applies European Union law?

**Question 9**

Who can enforce European Union law?

**Question 10**

What is the Supreme Court of Justice of the European Union?

**Question 11**

What are the complementary sources of European Union law?

**Question 12**

Who applies American Union law?

**Question 13**

Who can enforce American Union law when Member States offer fewer rights?

**Question 14**

Against whom can the US Commission bring an action?

**Question 15**

What is the lowest court in the European Union?

**Question 16**

What are the complementary sources of American Union law?

**Text number 2**

Although the European Union does not have a codified constitution, it, like all political bodies, has laws that "form" the basic structure of its governance. The EU's primary constitutional sources are the Treaty on European Union (TEU) and the Treaty on the Functioning of the European Union (TFEU), which have been agreed or respected by the governments of all 28 Member States. The treaties establish the EU institutions, list their powers and responsibilities and explain the areas where the EU can issue directives or regulations. The European Commission has the right of initiative to make legislative proposals. Under the ordinary legislative procedure, the Council (made up of national government ministers) and the European Parliament (ministers elected by citizens) can make amendments and must give their consent for laws to be adopted. The Commission supervises the departments and agencies that implement or monitor EU legislation. The "European Council" (instead of the Council, which is made up of ministers from different governments) is made up of the prime ministers or executive presidents of the member states. It appoints the Commissioners and the Executive Board of the European Central Bank. The European Court of Justice is the supreme judicial body that interprets EU law and develops it through precedents. The Court of Justice can review the legality of the actions of the EU institutions in accordance with the Treaties. It can also rule on actions brought by Member States and citizens for breaches of EU law.

**Question 0**

What are the two primary sources of the European Union's Constitution?

**Question 1**

Who has the power to take legislative initiatives in the European Union?

**Question 2**

Who elects the Members of the European Parliament?

**Question 3**

Which court can interpret European Union law?

**Question 4**

Which governing body appoints the Commissioners and the Executive Board of the European Central Bank?

**Question 5**

Who has a codified constitution?

**Question 6**

What are the primary sources of the American Constitution?

**Question 7**

Who does not have the power to take legislative initiatives in the European Union?

**Question 8**

Who elects the members of the US Parliament?

**Question 9**

Which governing body appoints the Commissioners and the Board of Governors of the Federal Reserve Bank of America?

**Text number 3**

The EU's primary law consists mainly of the Treaties, the most important of which are the Treaty on European Union (TEU) and the Treaty on the Functioning of the European Union (TFEU). The Treaties contain formal and substantive provisions that frame the policies of the European Union institutions and define the division of competences between the European Union and its Member States. The TEU provides that European Union law applies to the metropolitan areas of the Member States and to certain islands and overseas territories, such as Madeira, the Canary Islands and the French overseas departments. European Union law also applies to territories where a Member State is responsible for external relations, such as Gibraltar and the Åland Islands. The Treaty on European Union allows the European Council to adopt specific provisions for regions, for example in the customs matters of Gibraltar and Saint-Pierre-et-Miquelon. The Treaty on European Union explicitly excludes certain regions, such as the Faroe Islands, from the scope of European Union law. Unless otherwise specified, agreements are applicable as soon as they enter into force and are generally concluded for an indefinite period. Under the TEU, commitments entered into between Member States before the signature of the Treaty no longer apply.[vague] All EU Member States are bound by the general obligation of cooperation mentioned in the TEU, which obliges them to abstain from any measure which could jeopardise the attainment of the objectives of the TEU. The Court of Justice of the European Union can interpret the Treaties, but it cannot rule on their validity, which is a matter of international law. Individuals may invoke primary law before the Court of Justice of the European Union if the Treaty provisions have direct effect and are sufficiently clear, precise and unconditional.

**Question 0**

Which treaty provides that European Union law applies to metropolitan areas in the Member States?

**Question 1**

Are there areas which the Treaty on European Union excludes from its jurisdiction?

**Question 2**

What powers does the Court of Justice of the European Union have in relation to the Treaties?

**Question 3**

In which cases can individuals invoke primary law before the Court of Justice of the European Union?

**Question 4**

When do the agreements apply?

**Question 5**

What are the main treaties that make up the EU's primary law?

**Question 6**

What are examples of areas where a Member State is responsible for external relations?

**Question 7**

When do these treaties apply?

**Question 8**

Who is qualified to interpret the Treaties?

**Question 9**

What is not a primary EU right?

**Question 10**

What does not contain formal and substantive provisions?

**Question 11**

What does the SEU agreement not do?

**Question 12**

In which cases does European Union law not apply?

**Question 13**

What does the Treaty on European Union not allow the European Council to do?

**Text number 4**

The main elements of the treaties that formed the European Union began with common rules for coal and steel and later for nuclear energy, but more comprehensive and formal institutions were created by the Treaty of Rome in 1957 and the Maastricht Treaty in 1992 (now the TFEU). Minor changes were made in the 1960s and 1970s. Major amending treaties were signed to complete the development of a single internal market with the 1986 Single European Act, to promote the development of a more social Europe with the 1997 Amsterdam Treaty, and to make minor changes to the relative competences of Member States in the EU institutions with the Nice Treaty in 2001 and the Lisbon Treaty in 2007. Since its inception, several Member States have joined the Union through accession treaties: the United Kingdom, Ireland, Denmark and Norway in 1972 (but Norway did not join), Greece in 1979, Spain and Portugal in 1985, Austria, Finland, Norway and Sweden in 1994 (but Norway did not join in 1994 because it did not receive support in the referendum), the Czech Republic, Cyprus, Estonia, Hungary, Latvia, Lithuania, Malta, Malta, Poland, Slovakia and Slovenia in 2004, Romania and Bulgaria in 2007 and Croatia in 2013. Greenland signed an agreement in 1985 granting it special status.

**Question 0**

How did the treaties that make up the European Union come into being?

**Question 1**

Which two treaties created the more formal institutions of the European Union?

**Question 2**

In which years did Spain and Portugal join the European Union?

**Question 3**

Did Norway end up joining the European Union in 1972?

**Question 4**

Which country signed a treaty in 1985 giving it special status?

**Question 5**

What was the need for the main treaties that eventually formed the EU?

**Question 6**

When was the Maastricht Treaty signed?

**Question 7**

When was the Single European Act drawn up?

**Question 8**

When did Denmark join the EU?

**Question 9**

When did Greenland sign the treaty granting it special status?

**Question 10**

How did the treaties that form the Canadian Union begin?

**Question 11**

Which two agreements provide the Canadian Union with more formal institutions?

**Question 12**

What major changes were made to the Treaties in 1960?

**Question 13**

In which year did Spain and Portugal refuse to join the EU?

**Question 14**

In which year did the UK, Ireland, Denmark and Norway refuse to join the EU?

**Text number 5**

After the Treaty of Nice, an attempt was made to reform the European Union's Constitution and make it more transparent, which would also have resulted in a single constitutional document. However, following the French and Dutch referenda, the 2004 Treaty establishing a Constitution for Europe never entered into force. Instead, the Lisbon Treaty entered into force. It was very similar in substance to the proposed Constitutional Treaty, but it was formally an amending treaty and, although it made significant changes to the existing treaties, it did not replace them completely.

**Question 0**

When has there been an attempt to reform EU legislation?

**Question 1**

Which two countries' referendums reduced the European Constitution?

**Question 2**

How similar was the Lisbon Treaty to the Constitutional Treaty?

**Question 3**

What type of treaty was the Lisbon Treaty?

**Question 4**

Will the Lisbon Treaty change or replace the existing treaties?

**Question 5**

What reforms were attempted after the Nice Treaty?

**Question 6**

What was the expected additional impact of the attempted reform?

**Question 7**

What caused the reform to never come into force?

**Question 8**

What treaty replaced the Constitutional Treaty?

**Question 9**

What did not happen after the Nice agreement?

**Question 10**

When was the European Constitution drafted?

**Question 11**

What was not the same in the Lisbon Treaty?

**Question 12**

Which agreement was adopted in 2004?

**Question 13**

What caused the reform to enter into force?

**Text number 6**

The European Commission is the main executive body of the European Union. Article 17(1) of the Treaty on European Union states that the Commission must 'promote the general interest of the Union', and Article 17(3) adds that the members of the Commission must be 'completely independent' and may not 'take instructions from any government'. Article 17(2) states that 'unless otherwise provided in the Treaties, acts of the Union may be adopted only on a proposal from the Commission'. This means that the Commission has a monopoly on initiating the legislative procedure, even though the Council is "the de facto catalyst for many legislative initiatives". Parliament can also formally request the Commission to make a legislative proposal, but the Commission can reject such a proposal, giving reasons. The Commission President (currently former Luxembourg Prime Minister Jean-Claude Juncker) sets the agenda for EU action. Decisions are taken by simple majority, usually by 'written procedure', where proposals are circulated and adopted if there are no objections. Following Ireland's refusal to accept changes to the Lisbon Treaty in 2007, the Commission still has one Commissioner from each of the 28 Member States, including the President and High Representative for Foreign Affairs and Security Policy (currently Federica Mogherini). The Commissioners (and more importantly the portfolios for which they are responsible) are closely negotiated between Member States. The Commissioners then have to be approved by qualified majority in the Council and majority in the Parliament. The proposal that Commissioners should be elected by an elected Parliament was not accepted in the Lisbon Treaty. This means that the Commissioners are, through the appointment process, unelected subordinates of national governments.

**Question 0**

What is the EU's main executive body?

**Question 1**

Who is the only administrative authority that can propose legislation?

**Question 2**

Who is the designated authority to schedule and define the EU's work?

**Question 3**

How many Commissioners are represented in each of the 28 Member States?

**Question 4**

Who is the current President and High Representative for Foreign Affairs and Security Policy?

**Question 5**

Where in the Treaty on European Union does it state that Commissioners must be completely independent and not take instructions from any government?

**Question 6**

Who sets the agenda for EU work?

**Question 7**

How are decisions taken on behalf of the EU?

**Question 8**

Which country refused to accept the changes to the 2007 Lisbon Treaty?

**Question 9**

Who are the unelected officials of national governments?

**Question 10**

What was not the EU's main executive body?

**Question 11**

Who was not the only administrative authority capable of proposing legislation?

**Question 12**

Who was not given the power to appoint the agenda?

**Question 13**

In what year did Ireland agree to the changes in the Lisbon Treaty?

**Question 14**

Who was approved by qualified majority vote in the Council?

**Text number 7**

Commissioners enjoy various privileges, such as exemption from national taxes (but not EU taxes) and immunity from prosecution for official acts. Commissioners have sometimes been found to have abused their office, notably after Parliament passed a motion of censure in 1999 against the Santer Commission, which eventually resigned amid allegations of corruption. This led to one of the most important cases, Commission v Edith Cresson, in which the European Court of Justice ruled that a Commissioner who gave his dentist a job for which he was clearly incompetent was not in fact breaking any law. In contrast to the lax approach of the European Court of Justice, the Committee of Independent Experts found that a culture had developed in which few Commissioners had "the slightest sense of responsibility". This led to the creation of the European Anti-Fraud Office. In 2012, it investigated Maltese Health Commissioner John Dalli, who resigned quickly after allegedly receiving a €60 million bribe in connection with the Tobacco Products Directive. In addition to the Commission, the European Central Bank has relatively independent executive powers to conduct monetary policy to manage the euro. It has a six-member Executive Board, appointed by the European Council on a recommendation from the Council. The President of the Council and a member of the Commission may attend ECB meetings, but they do not have the right to vote.

**Question 0**

Which commission was criticised in 1999 for paving the way for the abuse of power by Commissioners?

**Question 1**

Does the European Court of Justice find that the defendant in Commission v Edith Cresson was in breach of the law?

**Question 2**

Who said that a culture of irresponsible Commissioners had developed?

**Question 3**

Who appoints the Executive Board of the European Central Bank?

**Question 4**

Can the President of the Council vote on important issues concerning the European Central Bank?

**Question 5**

When did Parliament pass a motion of censure on the Santer Commission?

**Question 6**

What was the main issue that led to the censorship by the Santer Commission?

**Question 7**

Who noticed that a culture had developed in which few Commissioners felt a sense of responsibility?

**Question 8**

Which agency was set up as a result of the corruption identified by the Committee of Independent Experts?

**Question 9**

When was John Dalli investigated by the European Anti-Fraud Office?

**Question 10**

Who was not exempt from national taxes?

**Question 11**

Who was not immune from prosecution for official acts?

**Question 12**

Which Commission was found to have abused its power in the 1980s?

**Question 13**

Which Commission did not resign even though it was accused of corruption?

**Question 14**

What trivial incident was the result of the Santer Commission's censorship?

**Text number 8**

The second main legislative body is the Council, which is made up of ministers from different Member States. The Heads of Government of the Member States also convene a "European Council" (a separate body), which, according to Article 15 of the TEU, is responsible for "giving the necessary impetus to its development and defining general political guidelines and priorities". It meets every six months and its president (currently former Polish Prime Minister Donald Tusk) is responsible for "taking forward its work", but has no "legislative function". The Council does this: in practice it is the governments of the member states, but each meeting has a different minister depending on the subject under discussion (e.g. on environment, the environment ministers of the member states participate and vote, on foreign affairs the foreign ministers, etc.). The minister must have the power to represent the Member States and be involved in the decision-making process. When votes are taken, they are weighted inversely to the size of the Member States so that smaller Member States are not dominated by larger ones. The total number of votes is 352, but most acts require qualified majority voting if not consensus. Article 16(4) TEU and Article 238(3) TFEU define this as at least 55% of the members of the Council (not the votes) representing 65% of the EU population: currently this is around 74%, or 260 votes out of 352. This is crucial during the legislative process.

**Question 0**

What kind of people make up a legislative body, the Council?

**Question 1**

Who is currently the President of the Council?

**Question 2**

How are votes weighted to ensure that small states are not dominated by larger states?

**Question 3**

What is the total number of votes to be counted in the vote?

**Question 4**

How many votes out of 352 are currently needed for a majority?

**Question 5**

Which is the secondary legislative body?

**Question 6**

How often does the European Council meet?

**Question 7**

How many votes does the Council have in total?

**Question 8**

What is defined as a majority vote?

**Question 9**

What is the legislature not composed of?

**Question 10**

Who meets at the Council of the Americas?

**Question 11**

Who is currently the Vice-President of the Council?

**Question 12**

What meets every three months?

**Question 13**

How are votes weighted to ensure that smaller states are dominated by larger states?

**Text number 9**

Article 294 TFEU defines the ordinary legislative procedure for the adoption of new legislation, which applies to most EU acts. Essentially, there are three readings, starting with a Commission proposal, where Parliament must vote by a majority of all MEPs (not just those present) to block or propose amendments, and the Council must vote by qualified majority to accept the amendments but unanimously to block the Commission amendment. If at any stage the different institutions cannot agree, a conciliation committee is convened, representing MEPs, ministers and the Commission, to try to reach agreement on a joint text. If this is successful, the text is sent back to the Parliament and the Council for adoption by qualified majority and without conditions. This means that legislation can be blocked by a majority in Parliament, a minority in the Council and a majority in the Commission: it is harder to change EU law than to leave it as it is. There is a different procedure for budgets. The Council has to authorise "enhanced cooperation" between at least a subset of member states. The Commission should inform national governments at the outset, before proposals enter the legislative procedure. The EU as a whole can only act within the limits of its competences as laid down in the Treaties. Articles 4 and 5 TEU state that competence remains with the Member States unless it has been transferred, although there is a debate on the question of competence-competence: who ultimately has the 'competence' to define the EU's 'competence'. Many national courts believe they decide, other national parliaments believe they decide, and within the EU the Court of Justice believes it has the final say.

**Question 0**

What kind of vote must Parliament have to either block the Commission's proposals or propose amendments to them?

**Question 1**

What kind of vote will the Council have to take in order to accept the amendments recommended by Parliament?

**Question 2**

Is it easier or more difficult to change EU legislation than to stay the same?

**Question 3**

Which articles state that, unless competence has been delegated, it remains with the Member States?

**Question 4**

Which court considers that it has the last word in the EU on deciding the EU's competences?

**Question 5**

Which article of the TFEU defines the ordinary legislative procedure applicable to the majority of EU acts?

**Question 6**

What can block legislation?

**Question 7**

Which articles state that competence remains with the Member States unless it has been transferred?

**Question 8**

If the three different institutions cannot agree at any stage, what is the result?

**Question 9**

What is not defined in the TFEU article?

**Question 10**

How does the Treaty on the Functioning of the European Union revise old legislation?

**Question 11**

What kind of vote will the Council not take if it does not accept the amendments recommended by Parliament?

**Question 12**

Which articles do not mention that, unless competence has been delegated, it remains with the Member States?

**Question 13**

Who does not have the final say on who has the ultimate authority to define the EU's competence?

**Text number 10**

The EU judiciary has played an important role in the development of EU law, taking on the task of interpreting the Treaties and speeding up economic and political integration. Today, the Court of Justice of the European Union (CJEU) is the main judicial body, within which there is a higher Court of Justice (commonly abbreviated as the Court of Justice of the European Communities), which deals with cases of more general importance, and a General Court, which deals with more detailed questions of less general importance. There is also the Civil Service Tribunal, which deals with cases involving EU staff, and a separate Court of Auditors. Under Article 19(2) of the Treaty on European Union, each Member State has one judge, currently 28, who has the 'qualifications required for the highest judicial office' (or, in the case of the General Court, the 'ability required for the highest judicial office'). The judges elect the president for a term of three years. According to Article 19(3) TEU, the Court of Justice is the supreme court which interprets questions of EU law. In fact, most EU law is applied by national courts (English Court of Appeal, German Bundesgerichtshof, Belgian Cour du travail, etc.), but they can refer questions to the CJEU for a preliminary ruling. The role of the CJEU is to "ensure that the Treaties are interpreted and applied in accordance with the law", although realistically it has the power to extend and develop the law according to the principles it considers appropriate. This has been done in both important and controversial judgments such as Van Gend en Loos, Mangold v Helm and Kadi v Commission.

**Question 0**

Which area of EU administration has had the greatest impact on the development of EU legislation?

**Question 1**

What is the EU's main judicial body?

**Question 2**

How many judges are there in the EU in total?

**Question 3**

Which courts apply EU law the most?

**Question 4**

What is the duty of the EUT?

**Question 5**

How does the EU judiciary play an important role in the development of EU law?

**Question 6**

What is the EU's current main legal body?

**Question 7**

Which body deals with EU staff matters?

**Question 8**

How long is the term of office of the elected President of the Court of Justice of the European Union?

**Question 9**

What is the duty of the EUT?

**Question 10**

Which area of EU administration has had the least influence on the development of EU legislation?

**Question 11**

What is not the EU's main legal body?

**Question 12**

How many women judges are there in the EU?

**Question 13**

Which courts apply EU law the least?

**Question 14**

What is not covered by the EUT obligation?

**Text number 11**

Since its creation, the EU has been operating in the midst of an increasing number of national and globalising legal systems. This has meant that both the European Court of Justice and the highest national courts have had to develop principles for resolving conflict of laws issues between different systems. Within the EU, the Court considers that where EU law conflicts with a provision of national law, EU law prevails. In the first major case in 1964, Costa v ENEL, a Milanese lawyer and former shareholder in an energy company, Costa refused to pay his electricity bill to Enel in protest at the nationalisation of Italian energy companies. He argued that the Italian nationalisation law was incompatible with the Treaty of Rome and sought recourse to both the Italian Constitutional Court and the Court of Justice of the European Communities under Article 267 TFEU. The Italian Constitutional Court issued an opinion stating that Costa had no claims because the nationalisation law dated back to 1962 and the Treaty was in force since 1958. On the contrary, the Court held that the Treaty of Rome did not ultimately prevent in any way the nationalisation of energy and that, in any event, only the Commission, and not Costa, could have brought an action under the Treaty provisions. In principle, however, Costa was entitled to rely on the Treaty's incompatibility with national law and the Court would be obliged to consider his request for a preliminary ruling if its decision was not challenged. The Court reiterated its view in Van Gend en Loos, stating that Member States "have limited their sovereign rights, albeit in limited areas, and have established a legal order applicable to both their nationals and themselves" on the basis of "reciprocity". EU law "cannot be superseded by national rules, however formulated.... without calling into question the Community legal basis". This meant that a "subsequent unilateral act" of a Member State could not be applied. Similarly, in Amministrazione delle Finanze v. Simmenthal SpA, a Simmenthal SpA company argued that the public health inspection charge on imports of beef from France into Italy under the 1970 Italian law was contrary to two decrees of 1964 and 1968. The Court stated that "in accordance with the principle of the primacy of Community law", "measures directly applicable by the institutions" (such as the regulations in this case) "automatically render inapplicable any conflicting provisions of existing national law". This was necessary in order to prevent a "corresponding prohibition" of the "unconditional and irrevocable obligations entered into by the Member States" under the Treaty, which could "jeopardise the very foundations of the EU". However, despite the Court's views, the same analysis has not been accepted by the national courts of the Member States.

**Question 0**

If there is a conflict between EU law and national law, which law takes precedence?

**Question 1**

What was the reason given by the Italian Constitutional Court for Costa to lose its case against ENEL?

**Question 2**

What were the two regulations in the years that were in conflict with Italian law in the Simmenthal SpA case?

**Question 3**

Which bodies have had to develop principles to resolve conflicts between the laws of different systems?

**Question 4**

When did Costa v ENEL happen?

**Question 5**

Which court claimed that the Treaty of Rome did not prevent energy nationalism?

**Question 6**

What has worked in the face of decreasing diversity of national and globalising legal systems?

**Question 7**

Who did not need to develop principles to resolve legal conflicts between different systems?

**Question 8**

What major case occurred in the 1970s when the Court of Justice ruled that the Treaty of Rome ultimately did nothing to prevent energy nationalism?

**Question 9**

Which court did not claim that the Treaty of Rome did not prevent energy nationalism?

**Text number 12**

In general, all Member States recognise that EU law takes precedence over national law when agreed in the Treaties, but they do not accept that the Court of Justice has the final say on fundamental constitutional issues affecting democracy and human rights. In the UK, it is a fundamental principle that Parliament, as the sovereign expression of democratic legitimacy, can decide whether it wishes explicitly to legislate against EU law. However, this would only happen if the people expressly wished to leave the EU. In R (Factortame Ltd) v Secretary of State for Transport, it was held that "whatever limitation on its sovereignty Parliament accepted when it passed the European Communities Act 1972 was entirely voluntary", so "it has always been clear" that the UK courts have a duty "to override any rule of national law which conflicts with a directly enforceable rule of Community law". Recently, the UK Supreme Court held in R (HS2 Action Alliance Ltd) v Secretary of State for Transport that although the UK Constitution is uncodified, it may contain common law principles and Parliament did not "contemplate or approve the overruling of those principles" when it enacted the European Communities Act 1972. The German Constitutional Court has held, on the basis of the Solange I and Solange II judgments, that if the EU does not respect its fundamental constitutional rights and principles (in particular democracy, the rule of law and the principles of the social state), it cannot override German law. However, as the names on the judgments say, "as long as" the EU seeks to democratise its institutions and has a framework to protect fundamental human rights, it would not check the compatibility of EU law with German constitutional principles. Most other member states have expressed similar reservations. This suggests that the legitimacy of the EU rests on the supreme authority of the Member States, its genuine commitment to human rights and the democratic will of its citizens.

**Question 0**

What do all Member States agree takes precedence over national legislation?

**Question 1**

In which cases do Member States say that the Court of Justice does not have the last word?

**Question 2**

When was the European Communities Act adopted?

**Question 3**

In which cases cannot the EU override German law?

**Question 4**

What is the legitimacy of the EU based on?

**Question 5**

What does the EU accept about the Court of Justice?

**Question 6**

What is the basic principle of the Canadian Parliament?

**Question 7**

When was the European Communities Act not adopted?

**Question 8**

What was not the German Constitutional Court's view on Solange I and Solange II?

**Question 9**

What is the legitimacy of the EU not based on?

**Text number 13**

Constitutional law concerns the administrative structure of the European Union, while administrative law obliges the EU institutions and Member States to respect the law. Both Member States and the Commission have a general legal right or locus standi to bring actions against EU institutions and other Member States for breach of the Treaties. Since the creation of the EU, the Court of Justice has also held that the Treaties allow citizens or companies to bring actions against the EU and Member State institutions for breach of the Treaties and regulations, if they are correctly interpreted as creating rights and obligations. However, in 1986 it was held that the Directives did not allow citizens or companies to bring actions against non-state parties. This meant that national courts were not obliged to apply EU law if a national rule conflicted with it, although a national government could be sued if it imposed an obligation on another citizen or company. These rules on direct effect limit the extent to which national courts are obliged to apply EU law. Any action by the EU institutions can be subject to judicial review and judged in accordance with the principle of proportionality, particularly where general principles of law or fundamental rights are at stake. Where the law has been broken, the plaintiff's remedy is often monetary damages, but courts can also require specific performance or grant injunctions to ensure that the law is as effective as possible.

**Question 0**

What kind of law obliges EU institutions and Member States to comply with the law?

**Question 1**

In what year was it said that citizens or businesses cannot sue non-state parties?

**Question 2**

Which actions of the EU institutions can be challenged before the Court of Justice?

**Question 3**

What type of legislation applies to the EU's administrative structure?

**Question 4**

What kind of law does not force the EU institutions and Member States to comply with the law?

**Question 5**

In what year was it said that citizens or businesses could bring actions against non-state parties?

**Question 6**

Who was obliged to apply EU law if a national rule conflicted with it?

**Question 7**

Which actions of the EU institutions could not be challenged before the Court of Justice?

**Question 8**

What type of law did not apply to the EU's administrative structure?

**Text number 14**

While it is generally accepted that EU law takes precedence, not all EU acts give citizens a right of action: in other words, not all EU acts have direct effect. In Van Gend en Loos v. Nederlandse Administratie der Belastingen, it was held that provisions of the Treaties (and EU regulations) have direct effect if they are (1) clear and unambiguous, (2) unconditional and (3) do not require further action by the EU or national authorities to implement them. The postal company Van Gend en Loos argued that the current Article 30 TFEU prevented the Dutch customs authorities from collecting customs duties when importing urea formaldehyde imports from Germany into the Netherlands. Following a reference for a preliminary ruling from the Dutch court, the Court of Justice held that although the Treaties do not "expressly" give citizens or companies the right to bring actions, they can do so. Historically, international treaties had only allowed States to bring legal claims for their enforcement, but the Court declared that "the Community constitutes a new body of international law". Since Article 30 stated clearly, unconditionally and immediately that no quantitative restrictions on trade could be imposed without valid justification, Van Gend en Loos could recover the money it had paid in customs duties. In this respect, EU regulations are equivalent to Treaty provisions since, as stated in Article 288 TFEU, they are "directly applicable in all Member States". Moreover, Member States are obliged not to reproduce the Regulations in their national legislation in order to avoid confusion. For example, in Commission v. Italy, the Court of Justice held that Italy had failed to fulfil its obligation under the Treaties by not implementing a scheme whereby farmers were paid a premium for the slaughter of cows (in order to reduce surplus production of dairy products) and by reproducing the rules in a regulation to which several additions had been made. "The regulations", the Court held, "enter into force only on their publication" and their implementation could "jeopardise their simultaneous and uniform application throughout the Union". On the other hand, some regulations may themselves expressly require implementing measures, in which case these specific rules should be respected.

**Question 0**

In which cases were the provisions of the Treaties considered to have direct effect if they are clear and unconditional and do not require further action by the EU or national authorities?

**Question 1**

Where in the TEFU article does it state that trade cannot be subject to quantitative restrictions?

**Question 2**

What kind of company is Van Gend en Loos?

**Question 3**

What are the EU regulations that are essentially the same as in this case?

**Question 4**

What is generally not accepted in EU law?

**Question 5**

Who could not get back the money they paid for the tariff?

**Question 6**

What is not mentioned in the TFEU article?

**Text number 15**

Treaties and regulations have direct effect (if they are clear, unconditional and immediate), but directives do not usually give citizens (as opposed to a Member State) the right to bring actions against other citizens. In theory, this is because, under Article 288 TFEU, directives are addressed to Member States and generally leave "the form and means of implementation to the national authorities". This is partly because directives often set minimum requirements, allowing Member States to apply more stringent requirements. For example, the Working Time Directive requires every worker to have at least four weeks' paid leave per year, but most Member States require more than 28 days in national legislation. However, the current position of the Court of Justice is that citizens are entitled to make claims based on national laws implementing the Directives, but not on the Directives themselves. Directives do not have what is known as horizontal direct effect (i.e. between non-state parties). This view was immediately controversial, and in the early 1990s three advocates-general argued persuasively that directives should create rights and obligations for all citizens. The Court of Justice refused, but there are five major exceptions.

**Question 0**

In which countries are citizens generally not allowed to sue other citizens?

**Question 1**

How many days of paid leave do the Working Time Directive requires workers to take each year?

**Question 2**

How many paid holidays do most Member States require?

**Question 3**

When did these three advocates-general argue that directives should create rights and obligations for all citizens?

**Question 4**

What usually gives citizens the right to sue other citizens?

**Question 5**

What does Article 288 TFEU not say?

**Question 6**

How many unpaid days off do the Working Time Directive require workers to take each year?

**Question 7**

What is not required by national law to last more than 28 days?

**Text number 16**

Firstly, if the deadline for transposition of the Directive is not respected, the Member State cannot implement conflicting laws and the citizen can invoke the Directive in such a case (the so-called "vertical" direct effect). Thus, in Pubblico Ministero v Ratti, the Italian government, having failed to transpose Directive 73/173/EEC on the packaging and labelling of solvents within the time limit, could not enforce a contradictory national law of 1963 against the solvent and varnish company Ratti. A Member State could not "plead against individuals that it had not itself fulfilled the obligations arising from the Directive". Secondly, a citizen or company can rely on the Directive, not only in a dispute with a public authority, but also in a dispute with another citizen or company. In CIA Security v Signalson and Securitel, the Court held that a company called CIA Security could defend itself against competitors' claims that it had failed to comply with the 1991 Belgian decree on alarm systems on the ground that it had not notified the Commission as required by the directive. Thirdly, if the Directive expresses a "general principle" of EU law, it can be invoked between private, non-state parties before the deadline for its implementation. This follows from the case of Kücükdeveci v Swedex GmbH & Co KG, where § 622 of the German Civil Code stated that years of employment under the age of 25 do not count towards the statutory notice period. Mr Kücükdeveci worked for Swedex GmbH & Co KG for 10 years, between the ages of 18 and 28, before being dismissed. He claimed that the law not counting the number of years he had completed under the age of 25 was unlawful age discrimination under the Employment Equality Framework Directive. The Court held that he could rely on the Directive because equality was also a general principle of EU law. Thirdly, if the defendant is subject to the State, albeit not central government, it may still be bound by the Directives. In Foster v British Gas plc, the Court held that Foster was entitled to bring a sex discrimination claim against her employer, British Gas plc, which forced women to retire at 60 and men at 65, if (1) it was a state measure, (2) it provided a public service and (3) it had special powers. This can also apply if the company is privatised, as was the case with the water company, which was responsible for basic water maintenance.

**Question 0**

What happens first if the deadline for transposing the Directive is not met?

**Question 1**

Secondly, what happens if the deadline of the Directive is not respected?

**Question 2**

How long did Kucukdeveci work for Swedex Gmbh & Co KG before he was dismissed?

**Question 3**

Which company did Mrs Foster work for?

**Question 4**

At what age did British Gas plc force its employees to retire?

**Question 5**

What happens if the deadline of the Directive is met?

**Question 6**

What did the Italian government fail to do?

**Question 7**

What cannot be invoked by a citizen or business?

**Question 8**

What happens if the Directive does not express a "general principle" of EU law?

**Question 9**

Who did Kucukdeveci not work for?

**Text number 17**

Fourth, national courts are obliged to interpret national legislation "as far as possible in the light of the wording and purpose of the Directive". In textbooks (though not in the courts themselves) this is often referred to as "indirect effect". In Marleasing SA v. La Comercial SA, the Court of Justice held that the Spanish court had to interpret the general provisions of the Civil Code relating to contracts without cause or which defraud creditors as being in conformity with Article 11 of the First Company Law Directive, which required that incorporation could only be annulled for a specific list of reasons. The Court was quick to acknowledge that the obligation of interpretation could not be in conflict with the wording of the national law. Fifth, if a Member State has not implemented the Directive, a citizen may not be able to bring an action against the non-state parties, but may be able to sue the Member State itself for failure to implement the law. In Francovich v Italy, the Italian government had not set up an insurance fund from which employees could claim unpaid wages if their employer had become insolvent, as required by the Insolvency Directive. Mr Francovich, a former employee of a bankrupt Venetian company, was therefore entitled to claim from the Italian government ITL 6 million as compensation for his losses. The Court held that if the Directive conferred identifiable rights on individuals, and if there was a causal link between the breach of EU law by a Member State and the claimant's loss, compensation must be paid. The fact that the conflicting law is an Act of Parliament is not a defence.

**Question 0**

Which courts are obliged to interpret national law as far as possible?

**Question 1**

What is required by Article 11 of the First Company Law Directive?

**Question 2**

What did the Italian government fail to do in Francovich v Italy?

**Question 3**

How much money was Francovich entitled to claim from the Italian government in damages?

**Question 4**

Which courts are not obliged to interpret national law as far as possible?

**Question 5**

What is not required by Article 11 of the First Company Law Directive?

**Question 6**

What did the Court of Justice not recognise?

**Question 7**

What did the Italian government fail to do in Francovich v Italy?

**Question 8**

How much money was Francovich not allowed to claim from the Italian government?

**Text number 18**

The principles of European Union law are legal rules developed by the European Court of Justice, which are unwritten rules not explicitly laid down in the Treaties but which affect how European Union law is interpreted and applied. In formulating these principles, the Courts have drawn on a number of sources, including public international law and legal doctrines and principles found in the legal systems of the Member States of the European Union and in the case law of the European Court of Human Rights. The general principles of European Union law adopted are fundamental rights (see human rights), proportionality, legal certainty, equality before the law and subsidiarity.

**Question 0**

Who developed the principles of European Union law?

**Question 1**

What are some of the general principles of European Union law?

**Question 2**

Which body has not developed the principles of European Union law?

**Question 3**

Which sources did the EU courts not rely on?

**Question 4**

What are some of the general principles of European Union law that have been abandoned?

**Question 5**

What rules are explicitly laid down in the contracts?

**Text number 19**

The European Court of Justice has recognised the principle of proportionality as one of the general principles of European Union law since the 1950s. According to the general principle of proportionality, the legality of an action depends on whether it was appropriate and necessary to achieve the legitimate aims pursued. Where there is a choice between several appropriate measures, the least burdensome measure must be chosen and the harm caused must not be disproportionate to the objectives pursued. The principle of proportionality is also recognised in Article 5 of the EC Treaty, which states that "Community action shall not go beyond what is necessary to achieve the objectives of this Treaty".

**Question 0**

How long has the principle of proportionality been recognised as one of the general principles of EU law?

**Question 1**

Where does the EC Treaty recognise the principle of proportionality?

**Question 2**

Which measure to choose when there are several to choose from?

**Question 3**

How long has the principle of proportionality not been recognised as one of the general principles of EU law?

**Question 4**

What does the legality of the action not depend on?

**Question 5**

Which measure to adopt when faced with a choice between several inappropriate measures?

**Question 6**

Where does the EC Treaty not recognise the principle of proportionality?

**Question 7**

What is not mentioned in Article 5 of the EC Treaty?

**Text number 20**

The concept of legal certainty has been recognised by the European Court of Justice as one of the general principles of European Union law since the 1960s. It is an important general principle of international law and public law that predates European Union law. As a general principle of European Union law, it means that legislation must be certain, that is to say, it must be clear and precise and its legal effects must be foreseeable, particularly when it applies to economic obligations. In the European Union, the adoption of laws with legal effect must have an appropriate legal basis. The legislation of the Member States implementing European Union law must be drafted in such a way that it is clearly understood by those to whom it applies. In European Union law, the general principle of legal certainty prohibits ex post facto legislation, i.e. laws should not enter into force until they have been published. The protection of legitimate expectations, which stems from the principles of legal certainty and good faith, is also a key element of the general principle of legal certainty in European Union law. According to the principle of legitimate expectations, "those who act in good faith on the basis of legislation which is or appears to be in force should not be disappointed in their expectations".

**Question 0**

How long has the concept of legal certainty been recognised as one of the general principles of EU law?

**Question 1**

Which of these laws are older than EU legislation?

**Question 2**

What does the adoption of laws with legal effect in the EU entail?

**Question 3**

What is the doctrine of legitimate expectations based on?

**Question 4**

What is not recognised as one of the general principles of European Union law?

**Question 5**

What was first recognised in EU legislation in the 1970s?

**Question 6**

Which laws are not mentioned that do not originate from EU legislation?

**Question 7**

What must be the impact of adopting laws that have no legal effect in the EU?

**Question 8**

How should national legislation implementing EU law be drafted?

**Text number 21**

First recognised by the European Court of Justice in the late 1960s, fundamental rights, like human rights, are now seen as an integral part of the general principles of European Union law. The European Court of Justice must therefore draw inspiration from the constitutional traditions common to the Member States. Consequently, the European Court of Justice cannot uphold measures which are incompatible with the fundamental rights recognised and protected by the constitutions of the Member States. The European Court of Justice also stated that "international agreements protecting human rights, in respect of which the Member States have cooperated or signed, may provide guidelines which should be respected within the framework of Community law".

**Question 0**

Where is the European Court of Justice likely to find inspiration?

**Question 1**

The European Court of Justice cannot uphold measures that are incompatible with what?

**Question 2**

When has the European Court of Justice not recognised fundamental rights?

**Question 3**

What is not considered an essential part of the general principles of EU law?

**Question 4**

When can the European Court of Justice uphold measures?

**Question 5**

What did the European Court of Justice not say about the delivery instructions?

**Text number 22**

Nowhere in the original treaties of the European Union is there any mention of the protection of fundamental rights. It was not intended that human rights should apply to European Union measures, i.e. legislative and administrative acts of the European Union institutions. The only concern at the time was that Member States should be prevented from violating human rights, which is why the European Convention on Human Rights was concluded in 1950 and the European Court of Human Rights was established. The European Court of Justice recognised fundamental rights as a general principle of European Union law as the need to ensure that European Union measures are compatible with the human rights of the Member States as enshrined in their constitutions became increasingly apparent. In 1999, the European Council set up a body with the task of drafting a European Charter of Human Rights, which could form the constitutional basis of the European Union and as such would be specifically tailored for application to the European Union and its institutions. The Charter of Fundamental Rights of the European Union brings together a list of fundamental rights from the European Convention on Human Rights, the 1989 European Parliament Declaration on Fundamental Rights and the Treaties establishing the European Union.

**Question 0**

How many of the original EU treaties protected fundamental rights?

**Question 1**

What were the initial efforts to prevent human rights violations?

**Question 2**

When was the European Convention on Human Rights concluded?

**Question 3**

What other community was established at the same time as the European Convention on Human Rights?

**Question 4**

When did the European Council mandate someone to draft a European Charter of Human Rights?

**Question 5**

How many of the original EU treaties did not protect fundamental rights?

**Question 6**

Which actors did not initially seek to prevent human rights violations?

**Question 7**

When was the European Convention on Human Rights drafted?

**Question 8**

What other entity was not established at the same time as the European Convention on Human Rights?

**Question 9**

What did the European Court of Justice not recognise?

**Text number 23**

The 2007 Lisbon Treaty explicitly recognises fundamental rights, as Article 6(1) states: 'The Union recognises the rights, freedoms and principles set out in the Charter of Fundamental Rights of the European Union of 7 December 2000, as adopted in Strasbourg on 12 December 2007, which shall have the same legal value as the Treaties.' The Charter of Fundamental Rights of the European Union has thus become an integral part of European Union law and codifies the fundamental rights previously considered to be general principles of European Union law. In fact, since the Lisbon Treaty, the Charter and the Convention now coexist in European Union law, although the former is implemented by the Court of Justice of the European Communities for European Union measures and the latter by the European Court of Human Rights for measures taken by the Member States.

**Question 0**

When was the Lisbon Treaty signed?

**Question 1**

Where has the Charter become an important part of EU law?

**Question 2**

After the Lisbon Treaty, the Charter of Fundamental Rights and the Convention now coexist under what name?

**Question 3**

Who is responsible for monitoring compliance with the Charter of Fundamental Rights of the European Union?

**Question 4**

When was the Lisbon Treaty rejected?

**Question 5**

Which Charter has not become an important part of EU law?

**Question 6**

What does not have the same legal value as the Treaties?

**Question 7**

What EU law does not allow?

**Question 8**

Which body does not respect the Charter of Fundamental Rights of the European Union?

**Text number 24**

The social chapter is the chapter of the 1997 Amsterdam Treaty that covers social policy issues in European Union law. The social partners, UNICE, ETUC and CEEP, developed the basis for the social chapter in 1989. A watered-down version was adopted as the Social Charter by the Strasbourg European Council in 1989. The Social Charter proclaims 30 general principles on issues such as fair pay, health and safety at work, the rights of disabled and elderly people, workers' rights, vocational training and the improvement of living conditions. The Social Charter became the basis for European Community legislation on these issues in 40 legal acts.

**Question 0**

The social chapter is the chapter of which treaty?

**Question 1**

What year was the Amsterdam Treaty signed?

**Question 2**

When was the basis for the social number developed?

**Question 3**

How many general principles does the Social Charter proclaim?

**Question 4**

How many pieces of legislation have been based on the Social Charter?

**Question 5**

What is the social chapter of a treaty not a chapter?

**Question 6**

In what year was the Treaty of Amsterdam rejected by European Union law?

**Question 7**

What did the social partners develop in the 1980s?

**Question 8**

How many general principles are not enshrined in the Social Charter?

**Question 9**

How much legislation has not been based on the Social Charter?

**Text number 25**

Since then, 11 of the then 12 Member States adopted the Social Charter in 1989. The United Kingdom refused to sign the Social Charter and was exempted from legislation on matters relating to the Social Charter unless it agreed to be bound by the legislation. The UK was subsequently the only Member State to veto the inclusion of the Social Charter in the social chapter of the 1992 Maastricht Treaty - instead a social policy agreement was added as a protocol. The UK was again exempted from the Protocol legislation unless it agreed to be bound by it. The Protocol was later known as the 'social chapter', although it was not a chapter of the Maastricht Treaty. To achieve the objectives of the Social Chapter, the European Union was to 'support and complement' the policies of the Member States. The objectives of the Social Pact are as follows:

**Question 0**

How many Member States adopted the Social Charter in 1989?

**Question 1**

Which Member State refused to sign the Social Charter?

**Question 2**

Under what name was the Social Charter to be included in the Maastricht Treaty?

**Question 3**

What year was the Maastricht Treaty signed?

**Question 4**

When was the Social Charter not adopted?

**Question 5**

Who did not adopt the Social Charter?

**Question 6**

Who agreed to sign the Social Charter and was exempt from the Social Charter legislation?

**Question 7**

Who was the only Member State that did not oppose the Social Charter, which was included in the Social Charter of the Masstricht Agreement?

**Question 8**

Under what name was the Social Charter not intended to be included in the Masstricht Treaty?

**Text number 26**

When the UK Labour Party was elected to government in 1997, the UK formally signed the Social Policy Pact, which allowed it to be included, with minor changes, in the social chapter of the Amsterdam Treaty in 1997. The UK then adopted key legislation agreed earlier under the Social Policy Pact, the 1994 Works Council Directive, which required consultation of workers in companies, and the 1996 Parental Leave Directive. In the 10 years since the adoption of the 1997 Amsterdam Treaty and the Social Chapter, the European Union has taken policy initiatives in a number of social policy areas, including industrial and labour relations, equal opportunities, health and safety, public health, protection of children, disabled and elderly people, poverty, migrant workers, education, training and youth.

**Question 0**

What prompted the UK to join the Social Policy Pact?

**Question 1**

When did the United Kingdom formally join the Agreement on Social Policy?

**Question 2**

Which directive was drafted in 1994?

**Question 3**

When was the Parental Leave Directive drafted?

**Question 4**

What was required by the Works Council Directive?

**Question 5**

What did not follow the election of the British Labour Party to government?

**Question 6**

When did the UK not sign the Social Policy Pact?

**Question 7**

What did not require consultation of the workforce in companies?

**Question 8**

When was the Parental Leave Directive rejected?

**Question 9**

What has the European Union not done since the adoption of the Social Charter?

**Text number 27**

EU competition law originated in the European Coal and Steel Community (ECSC) Treaty, concluded in 1951 by France, Italy, Belgium, the Netherlands, Luxembourg and Germany after the Second World War. The agreement was aimed at preventing Germany from regaining a dominant position in coal and steel production, as the members considered that Germany's dominant position had contributed to the outbreak of war. Article 65 prohibited cartels and Article 66 provided for provisions on mergers and abuses of dominant positions. This was the first time that competition law principles were incorporated into a multilateral regional agreement, and it created a model for European competition law. In 1957, competition rules were incorporated into the Treaty of Rome, also known as the EC Treaty, which established the European Economic Community (EEC). The Treaty of Rome made the enforcement of competition law one of the main objectives of the EEC "through the establishment of a system ensuring that competition in the common market is not distorted". The two main provisions of EU competition law applicable to undertakings are Article 85, which prohibits anti-competitive agreements with certain exceptions, and Article 86, which prohibits abuses of dominant market positions. The Treaty also laid down the principles governing the competition laws of the Member States, with Articles 90 for public undertakings and 92 for state aid. The Treaty did not include provisions on mergers because Member States could not agree at the time.

**Question 0**

Between which countries was the European Coal and Steel Community agreement concluded?

**Question 1**

What year was the ECSC Treaty signed?

**Question 2**

What was prohibited by Article 65 of the ECSC Treaty?

**Question 3**

Which article provided the provisions on concentrations, mergers and abuse of dominant position?

**Question 4**

When were competition rules included in the Treaty of Rome?

**Question 5**

Which countries did not accept the European Coal and Steel Community Treaty?

**Question 6**

What was the agreement not intended to do for Germany?

**Question 7**

What do EU members think did not lead to the outbreak of war?

**Question 8**

What was not agreed in Article 65?

**Question 9**

What was not provided for in Article 66?

**Text number 28**

Currently, Article 101(1) of the Lisbon Treaty prohibits anti-competitive agreements, including price fixing. Under Article 101(2), such agreements are automatically null and void. Article 101(3) provides for exemptions if the collusion is aimed at promoting distribution or technological innovation, if it gives consumers a 'fair share' of the benefits and if it does not contain unreasonable restrictions that threaten to eliminate competition everywhere (or comply with the general principle of proportionality under EU law). Article 102 prohibits abuses of dominant market positions, such as price discrimination and exclusive dealing. Article 102 allows the European Council to adopt regulations to regulate mergers between undertakings (the current regulation is Regulation (EC) No 139/2004). The general test is whether a concentration (i.e. a merger or acquisition) with a Community dimension (i.e. affecting several EU Member States) is likely to significantly impede effective competition. Articles 106 and 107 of the Regulation provide that a Member State's right to provide public services must not be impeded, but that public undertakings must otherwise comply with the same competition principles as undertakings. Article 107 lays down the general rule that the State may not subsidise or support private parties in order to distort free competition and provides for exceptions in the case of charities, regional development objectives and natural disasters.

**Question 0**

Which article in the Lisbon Treaty prohibits anti-competitive agreements?

**Question 1**

What does Article 102 of the Lisbon Treaty prohibit?

**Question 2**

Which articles state that the right of Member States to provide public services must not be impeded?

**Question 3**

Which article allows the European Council to regulate mergers between companies?

**Question 4**

What does the Lisbon Treaty now allow?

**Question 5**

What is not prohibited by Article 102?

**Question 6**

What is the European Council not allowed to do under Article 102?

**Question 7**

Which article does not mention that the right of Member States to provide public services must not be hindered?

**Question 8**

What is not provided for in Article 107?

**Text number 29**

The concept of a social market economy was only introduced into EU law in 2007, but free movement and trade have been at the heart of European development since the Treaty of Rome (1957). According to the well-established theory of comparative advantage, two countries can both benefit from trade, even if the other country's economy is less productive in all respects. As in other regional organisations such as the North American Free Trade Association or the World Trade Organisation, the removal of trade barriers and the promotion of the free movement of goods, services, labour and capital are aimed at lowering consumer prices. It was originally theorised that a free trade area tended to move towards a customs union leading to a common market, then a monetary union, then a monetary and fiscal union, then a political union and finally a full-fledged federal union. In Europe, however, these stages were remarkably confused, and it is still unclear whether the 'end game' should be the same as the state as traditionally understood. In practice, free trade without standards to ensure fair trade can benefit some people and groups within countries (especially large corporations) much more than others, but burden people without bargaining power in expanding markets, especially workers, consumers, small businesses, emerging industries and communities. Articles 28-37 of the Treaty on the Functioning of the European Union (TFEU) establish the principle of free movement of goods within the EU, while Articles 45-66 require the free movement of persons, services and capital. These so-called "four freedoms" were considered to be hampered by physical barriers (e.g. customs duties), technical barriers (e.g. different laws on safety, consumer or environmental standards) and fiscal barriers (e.g. different VAT rates). The tension in the law is that free movement and trade should not lead to an unrestricted commercial profit motive. The Treaties limit free trade in order to give priority to other values such as public health, consumer protection, workers' rights, fair competition and environmental improvement. The Court of Justice has increasingly held that the specific objectives of free trade are underpinned by the general objectives of the Treaty to improve human welfare.

**Question 0**

When was the concept of a social market economy introduced into EU law?

**Question 1**

How long have free movement and trade been central to the development of Europe?

**Question 2**

By removing barriers to trade and promoting the free movement of goods, the aim is to reduce what?

**Question 3**

What are the restrictions in the Treaties in general?

**Question 4**

Which body has considered that the objectives of free trade support the improvement of people's well-being?

**Question 5**

What was not included in EU legislation in 2007?

**Question 6**

What has not been central to the development of Europe since the Treaty of Rome in 1957?

**Question 7**

What was not originally theorised about the free trade area?

**Question 8**

What is not limited by the Treaties?

**Question 9**

Which party has not argued that the specific objectives of free trade must be supported by general objectives to improve people's well-being?

**Text number 30**

The free movement of goods in the European Union is achieved through a customs union and the principle of non-discrimination. The EU manages imports from third countries, customs duties between Member States are banned and imports move freely. In addition, Article 34 of the Treaty on the Functioning of the European Union states that "quantitative restrictions on imports and all measures having equivalent effect shall be prohibited between Member States". In Procureur du Roi v Dassonville, the Court held that this rule meant that any "trading rule" "adopted by the Member States" which may "directly or indirectly, actually or potentially" affect trade falls within the scope of Article 34. This meant that the Belgian law requiring imports of Scotch whisky to be accompanied by a certificate of origin was unlikely to be lawful. It discriminates against parallel importers such as Dassonville, who cannot obtain certificates from the French authorities from whom they buy Scotch whisky. This "broad test" for determining what might constitute an unlawful restraint of trade applies equally to the actions of bodies such as government departments, such as the former Buy Irish, which had government appointees. It also means that governments can be liable for private actors. For example, in Commission v France, French farmers constantly sabotaged import shipments of Spanish strawberries and even Belgian tomatoes. France was responsible for these barriers to trade because the authorities "manifestly and continuously refrained" from preventing the sabotage. In general, if the laws or practices of a Member State directly discriminate against imports (or exports under Article 35 TFEU), they must be justified under Article 36. Justifications include public morality, public policy or public security, "the protection of health and life of humans, animals or plants", "national treasures" of "artistic, historic or archaeological value" and "industrial and commercial property"." In addition, environmental protection, although not explicitly listed, can justify restrictions on trade as an overriding requirement derived from Article 11 TFEU. More generally, it is increasingly recognised that fundamental human rights should take precedence over all trade rules. Thus, in Schmidberger v. Austria, the Court held that Austria did not infringe Article 34 by not prohibiting a demonstration that prevented heavy traffic from crossing the A13 Brenner motorway on its way to Italy. Although many businesses, including Schmidberger's German company, were prevented from trading, the Court held that freedom of association is one of the "fundamental pillars of a democratic society" against which the free movement of goods had to be balanced, and that it was likely to be of secondary importance. If a Member State invokes the Article 36 ground, the measures it takes must be proportionate. This means that the rule must pursue a legitimate aim and be (1) appropriate to achieve that aim, (2) necessary to prevent a less restrictive measure from achieving the same result, and (3) proportionate in balancing the benefits of free trade with those of Article 36.

**Question 0**

What helps the free movement of goods?

**Question 1**

What was discriminated against in Article 34 in Procureur du Roi v Dassonville?

**Question 2**

Under Article 34, states can be responsible for what?

**Question 3**

In which case did French vigilantes sabotage Spanish strawberry shipments?

**Question 4**

In Schmidberger v. Austria, the Court concluded that Austria did not infringe Article 34 by not prohibiting what?

**Question 5**

What does not contribute to the free movement of goods?

**Question 6**

What is not prohibited between Member States?

**Question 7**

What does the EU not control from non-EU countries?

**Question 8**

What were the states not responsible for under Article 34?

**Question 9**

In which case did French stewards help Spanish strawberry deliveries?

**Text number 31**

Often the rules apply neutrally to all goods, but they can have a greater practical impact on imports than on domestic products. For such "indirectly" discriminatory (or "ambiguously applicable") measures, the Court has developed further justifications: either those set out in Article 36 or other "mandatory" or "imperative" requirements, such as consumer protection, improvement of labour standards, environmental protection, diversity of the press, fair trading and others: the categories are not closed. Most famously, in Rewe-Zentral AG v. Bundesmonopol für Branntwein, the Court of Justice found that a German law requiring all spirits and liqueurs (not just imported ones) to have an alcohol content of at least 25% was contrary to Article 34 TFEU because it had a greater negative impact on imports. German liqueurs had an alcohol content of over 25%, but the Cassis de Dijon that Rewe-Zentrale AG wanted to import from France contained only 15-20% alcohol. The Court rejected the German government's arguments that the measure would protect public health under Article 36 TFEU because stronger drinks were available and sufficient labelling would be sufficient for consumers to understand what they were buying. This rule primarily concerns requirements relating to the content or packaging of the product. In Walter Rau Lebensmittelwerke v. De Smedt PVBA, the Court held that the Belgian law requiring all margarines to be packaged in cubes infringed Article 34 and could not be justified by the objective of consumer protection. The argument that Belgians would believe that it was butter if it was not in the shape of a cube was disproportionate: it would "go far beyond the requirements of the objective" and the labelling would protect consumers "equally effectively". In the 2003 case Commission v Italy, Italian legislation required that cocoa products containing other vegetable fats could not be labelled as "chocolate". It had to be a "chocolate substitute". All Italian chocolate was made exclusively from cocoa butter, but British, Danish and Irish manufacturers used other vegetable fats. They argued that the law violated Article 34. The Court ruled that the low vegetable fat content did not justify the labelling "chocolate substitute". This was degrading to consumers. A "neutral and objective statement" was sufficient to protect consumers. If Member States impose significant barriers to the use of the product, this may also infringe Article 34. Thus, in 2009, in Commission v Italy, the Court of Justice held that an Italian law banning motorcycles or mopeds towing trailers infringed Article 34. Again, the law was applied neutrally to all, but disproportionately affected importers because Italian companies did not manufacture trailers. It was not a product requirement, but the Court held that the ban would prevent people from buying it: it would have a "significant effect on consumer behaviour" which "affects the market access of the product concerned". It would require a justification or mandatory requirement under Article 36.

**Question 0**

What is the minimum alcohol content that German law requires all spirits and liqueurs to have?

**Question 1**

From which country did Rewe-Zentrale AG want to import products?

**Question 2**

In what year was the case of cocoa products Commission v. Italy?

**Question 3**

Where is all Italian chocolate made?

**Question 4**

In Commission v Italy in 2009, the Court of Justice ruled that Italy's low-level ban breached Article 34.

**Question 5**

What was the maximum alcoholic strength by volume of all spirits and liqueurs under German law?

**Question 6**

From which country does Rewe-Zentrale AG not want to import products?

**Question 7**

Who approved the German government's argument that the measure protects public health?

**Question 8**

What was the Court of Justice's justification for the low vegetable fat content?

**Text number 32**

In contrast to product requirements or other laws that impede market access, the Court of Justice has developed a presumption that "selling arrangements" are presumed not to fall within the scope of Article 34 TFEU if they apply equally to all sellers and if they affect them in fact in the same way. In Keck and Mithouard, two importers argued that an action under French competition law preventing them from selling Picon beer at wholesale prices was unlawful. The purpose of the law was to prevent competition in the cucumber sector, not to prevent trade. The Court held that since it was a "de jure and de facto" equally applicable "selling arrangement" (which did not change the content of the product), it did not fall within the scope of Article 34 and therefore did not need to be justified. Sales arrangements can be considered to have a "de facto" unequal effect, in particular where traders from another Member State enter the market but advertising and marketing are restricted. In Konsumentombudsmannen v. De Agostini, the Court examined Swedish bans on advertising to children under 12 and misleading advertising for skincare products. Although the bans remained in force (justifiable under Article 36 or as a mandatory requirement), the Court stressed that total marketing bans may be disproportionate if advertising is "the only effective means of promotion by which [a trader] can penetrate the market". In Konsumentombudsmannen v. Gourmet AB, the Court suggested that a total ban on advertising of alcohol on radio, television and in the press could fall within the scope of Article 34 if advertising is the only means for sellers to persuade consumers to buy their products through "traditional social practices and local customs and habits", but that national courts would again decide whether the ban was justified under Article 36 for the protection of public health. Under the Unfair Commercial Practices Directive, the EU has harmonised restrictions on marketing and advertising to prohibit conduct that distorts average consumer behaviour, is misleading or aggressive, and lists examples of what is considered unfair. Increasingly, countries need to mutually recognise each other's regulatory standards and the EU has sought to harmonise minimum ideals of best practice. Improving standards aims to avoid a regulatory "race to the bottom" and to give consumers access to goods from all over the continent.

**Question 0**

Which two importers claimed that French competition law prevented them from selling Picon beer at wholesale prices?

**Question 1**

What was the aim of French competition law?

**Question 2**

In which case did the Court of Justice examine Swedish bans on advertising to children under 12?

**Question 3**

Which EU directive harmonised restrictions on marketing and advertising?

**Question 4**

Which two importers did not claim that French competition law prevented them from selling Picon beer at wholesale prices?

**Question 5**

What did the Court of Justice consider to fall within the scope of Article 34 TFEU?

**Question 6**

What was not the aim of the Article 34 TFEU law?

**Question 7**

In which case did the Court of Justice not examine Swedish bans on advertising to children under 12?

**Text number 33**

Since their inception, the Treaties have sought to enable people to pursue their ambitions in any country through free movement. Because of the economic nature of the project, the European Community initially focused on the free movement of workers as "factors of production", but from the 1970s onwards the emphasis shifted towards the development of a more "social" Europe. Free movement was increasingly based on 'citizenship', whereby people had rights that enabled them to engage in economic and social activity, rather than economic activity being a prerequisite for rights. This means that the fundamental rights of 'workers' under Article 45 TFEU acted as a specific expression of the general rights of citizens under Articles 18-21 TFEU. According to the Court of Justice, a "worker" is anyone who is economically active, including anyone in an employment relationship, "under the direction of another person" for "remuneration". However, one need not be paid for work in order to be protected as a worker. For example, in Steymann v. Staatssecretaris van Justitie, a German man claimed the right to reside in the Netherlands after volunteering for plumbing and domestic work in the Bhagwan community, which provided for the material needs of all regardless of their contribution. The court ruled that Mr Steymann was entitled to reside in the country, as long as the work he did was at least "indirectly compensated". Worker status means protection against all forms of discrimination by governments and employers in access to employment, tax and social security rights. In contrast, a citizen who is "a national of a Member State" (Article 20(1) TFEU) has the right to apply for a job and to vote in local and European elections, but with more limited rights to social security. In practice, free movement has become politically controversial, as nationalist political parties have manipulated fears that migrants will deprive people of jobs and benefits (paradoxically at the same time). In practice, however, all available studies show that labour mobility has little impact on the wages and employment of local workers.

**Question 0**

What have the Treaties sought to make possible since its creation?

**Question 1**

Which body focused on the free movement of workers?

**Question 2**

What was the basis for free movement more and more often?

**Question 3**

In which case did a German man claim the right to live in the Netherlands, where he worked as a volunteer plumber?

**Question 4**

What was Steymann entitled to, according to the court?

**Question 5**

What have the Treaties not done since its creation?

**Question 6**

What was the European Community not originally focused on?

**Question 7**

What was the European Community focused on in the 1980s?

**Question 8**

Why was free movement not increasingly based on citizenship?

**Question 9**

What did the Court say that Steymann was not entitled to do?

**Text number 34**

Articles 1-7 of the Free Movement of Workers Regulation set out the main provisions on equal treatment of workers. First, Articles 1 to 4 generally require that workers may take up employment, conclude employment contracts and not be discriminated against in comparison with nationals of a Member State. In the well-known case of Belgian Football Association v Bosman, Belgian footballer Jean-Marc Bosman demanded that he should be able to transfer from R.F.C. de Liège to USL Dunkirk when his contract expired, regardless of whether Dunkirk could afford to pay Liège the normal transfer fees. The Court of Justice held that "transfer rules constitute an obstacle to free movement" and were illegal unless they could be justified on grounds of public interest, but this was unlikely. In Groener v Minister for Education, the Court accepted that a requirement to speak Gaelic as a teacher at a Dublin planning school could be justified as part of a public policy to promote the Irish language, but only if the measure was not disproportionate. By contrast, in Angonese v. Cassa di Risparmio di Bolzano SpA, a bank in Bolzano, Italy, could not require Angonese to obtain a bilingual certificate which could only be obtained in Bolzano. The Court, which applied Article 45 TFEU "horizontally" directly, considered that there would be little possibility for persons from other countries to obtain the certificate and that since "it was impossible to provide evidence of the required language knowledge in any other way", the measure was disproportionate. Secondly, Article 7(2) requires equal treatment in tax matters. In Finanzamt Köln Altstadt v. Schumacker, the Court held that it was contrary to Article 45 TFEU to deny tax benefits (e.g. for married couples and social security deductions) to a man who worked in Germany but lived in Belgium, while other German residents enjoyed these benefits. In contrast, in Weigel v Finanzlandesdirektion für Vorarlberg, the Court rejected Weigel's argument that the re-registration fee charged when he brought his car to Austria infringed his right to freedom of movement. Although the tax "probably had a negative impact on the decision of migrant workers to exercise their right to free movement", since it applied equally to Austrians, it had to be considered justified in the absence of EU legislation. Thirdly, people must be treated equally as regards "social advantages", even though the Court of Justice has accepted the residence qualifying periods. In Hendrix v Employee Insurance Institute, the Court held that a Dutch citizen was not entitled to continue receiving disability benefits after moving to Belgium because the benefit was "closely linked to the socio-economic situation in the Netherlands". In contrast, in Geven v. Land Nordrhein-Westfalen, the Court held that a Dutch woman living in the Netherlands who worked in Germany for 3-14 hours a week was not entitled to German child benefit, even though the wife of a man working full-time in Germany but living in Austria was. The general grounds for restricting freedom of movement in Article 45(3) TFEU are "public policy, public security or public health" and there is also a general exception in Article 45(4) for "employment in the public service".

**Question 0**

Which articles of the Free Movement of Workers Regulation set out the priority provisions for equal treatment of workers?

**Question 1**

Which Belgian footballer insisted that he should be allowed to move from one football club to another when his contract is up?

**Question 2**

Which language was required to be taught at a Dublin college by the Court of Justice in Groner v Secretary of State for Education?

**Question 3**

In which case was the Dutch national not entitled to continue receiving benefits when he moved to Belgium?

**Question 4**

How many hours did the Dutch woman in question work in Germany in Geven v Land Nordrhein-Westfalen?

**Question 5**

What is not included in the key provision on equal treatment of workers?

**Question 6**

What was not generally required of workers in Articles 1-4?

**Question 7**

Which Belgian footballer claimed that he should not be able to move from R.F.C. de Liege to USL Dunkirk?

**Question 8**

What did most people not claim for social benefits?

**Question 9**

What is the general justification for not restricting free movement under Article 45(3) TFEU?

**Text number 35**

The Court of Justice has increasingly regarded EU citizenship as a "basic status" for nationals of Member States, which has increased the number of social services available to people wherever they move. The Court has insisted that higher education and other forms of vocational training should be more accessible, albeit under certain conditions. In Commission v. Austria, the Court held that Austria was not entitled to restrict places at Austrian universities to Austrian students in order to avoid "structural, staffing and financial problems" if (mainly German) foreign students applied for places, as there was little evidence of a real problem.

**Question 0**

What has the Court of Justice recently considered to be the fundamental position of the citizens of the Member States?

**Question 1**

What has EU citizenship added?

**Question 2**

In which case did the Court rule that Austria was not allowed to reserve places in Austrian schools exclusively for Austrian pupils?

**Question 3**

What has the Court of Auditors asked for to make it more accessible?

**Question 4**

What has the Court of Justice increasingly not considered to be the fundamental position of the citizens of the Member States?

**Question 5**

What has EU citizenship reduced?

**Question 6**

In which case did the Court rule that Austria was entitled to reserve school places in Austria exclusively for Austrian students?

**Question 7**

What has the Court of Auditors demanded to make it less accessible?

**Text number 36**

In addition to creating rights for "workers" who do not normally have bargaining power in the market, the Treaty on the Functioning of the European Union also protects the "freedom of establishment" (Article 49) and the "freedom to provide services" (Article 56). In Gebhard v. Consiglio dell'Ordine degli Avvocati e Procuratori di Milano, the Court of Justice held that "establishment" means participation in the economy "on a stable and continuous basis", whereas "provision of services" means the exercise of an activity "on a temporary basis". This meant that a lawyer from Stuttgart, who had set up an office in Milan and had been reprimanded by the Milan Bar for not being registered, was entitled to bring an action on the basis of the freedom of establishment and not the freedom to provide services. However, requirements that a lawyer must be registered in Milan before he can practise his profession would be permissible if they were not discriminatory, if they were "justified by overriding requirements in the public interest" and if they were applied in a proportionate manner. Any person or entity engaged in an economic activity, in particular self-employed persons or "undertakings" such as companies or firms, has the right to set up a business without undue restrictions. The Court of Justice has held that both the government of a Member State and a private entity may impede the freedom of establishment, so that Article 49 has both a "vertical" and a "horizontal" direct effect. In Reyners v. Belgium, the Court held that the refusal to admit a lawyer to the Belgian Bar because he did not have Belgian nationality was unjustified. Under Article 49 TFEU, States may not infringe the freedom of establishment of others in the exercise of "official authority", but in this case the lawyer's work (unlike that of the court) was not official. In contrast, in Commission v Italy, the Court held that the requirement for lawyers practising in Italy to respect maximum fees in the absence of a contract with a client was not a restriction. The Grand Chamber of the Court held that the Commission had not shown that this had the object or effect of restricting access to the market for lawyers. Consequently, there did not appear to have been a breach of the freedom of establishment, which should have been justified.

**Question 0**

What treaty protects the freedom of establishment and the freedom to provide services?

**Question 1**

The requirements in Gebhard v. Consiglio...Milano, according to which a lawyer must be registered in Milan before he can practise as a lawyer, are permitted under what conditions?

**Question 2**

In which case did the Court of Justice rule that the refusal to admit a lawyer to the Belgian Bar on the ground that he was not of Belgian origin was not justified?

**Question 3**

Which article of the TFEU states that States may not infringe the right of establishment in the exercise of their public powers?

**Question 4**

In which case did the Court of Justice hold that the obligation on Italian lawyers to comply with maximum fees in the absence of an agreement with the client is not a restriction?

**Question 5**

What do workers usually have on the market?

**Question 6**

What is not protected by the Treaty on the Functioning of the European Union?

**Question 7**

Who does not have the right to set up a business without unjustified restrictions?

**Question 8**

Who could help freedom of establishment, according to the Court of Justice?

**Question 9**

What did the Grand Chamber of the Court of Justice of the European Communities say the Commission had shown?

**Text number 37**

In 2006, a spill of toxic waste from a European ship off the coast of Côte d'Ivoire prompted the Commission to review the legislation on toxic waste. Environment Commissioner Stavros Dimas said that "such highly toxic waste should never have left the European Union". As countries like Spain do not even have a criminal offence against the transport of toxic waste, Justice, Freedom and Security Commissioner Franco Frattini joined Dimas in proposing criminal sanctions for "ecological crimes". The Union's competence was challenged before the European Court of Justice in 2005 and the Commission won the case. The judgment set a precedent that the Commission can adopt supranational criminal legislation, which has never been done before. So far, the only other proposal has been a draft directive on intellectual property rights. Proposals against this legislation were tabled in the European Parliament on the grounds that criminal law should not be an EU competence, but were rejected in the vote. However, in October 2007 the Court of Justice ruled that the Commission cannot propose criminal sanctions, only that there must be criminal sanctions.

**Question 0**

What year did a toxic waste spill from a European ship prompt the Commission to review its waste prevention legislation?

**Question 1**

At that time, in countries like Spain, it was not a crime against what?

**Question 2**

When did the Court of Justice decide that the Commission can only suggest that criminal sanctions should be imposed?

**Question 3**

When was the Union's competence to create criminal sanctions for ecological crimes denied?

**Question 4**

What year did a toxic waste spill from an American ship prompt the Commission to investigate waste prevention legislation?

**Question 5**

What crimes did countries like Spain commit?

**Question 6**

What did Justice, Freedom and Security Commissioner Franco Frattini and Dimas reject?

**Question 7**

When did the Court of Justice deny that the Commission can only suggest that criminal sanctions should be imposed?

**Text number 38**

The "freedom to provide services" under Article 56 TFEU applies to persons who provide services "for remuneration", in particular commercial or professional activities. For example, in Van Binsbergen v. Bestuur van de Bedrijfvereniging voor de Metaalnijverheid, a Dutch lawyer moved to Belgium when advising a client on a social security matter and was told that he could not continue because under Dutch law only persons established in the Netherlands could give legal advice. The Court held that the freedom to provide services was valid, had direct effect and that the rule was probably unjustified: maintaining an address in a Member State would be sufficient to achieve the legitimate aim of good administration of justice. The Court of Justice has held that secondary education does not fall within the scope of Article 56 because it is generally financed by the State, whereas higher education is not. Health care is generally considered to be a service. In Geraets-Smits v. Stichting Ziekenfonds, Geraets-Smits claimed that the Dutch social insurance system should reimburse the costs of the treatment he received in Germany. The Dutch health authorities considered the treatment to be unnecessary, so he claimed that this restricted the freedom to provide services (of the German health clinic). Several governments argued that hospital services should not be considered economic and should not be covered by Article 56. However, the Court held that health care was a "service" even if the government (and not the recipient of the service) paid for the service. National authorities may justifiably refuse to reimburse patients for medical services provided abroad if the medical treatment received at home was provided without undue delay and was in accordance with "international medical science" as to which treatments are considered usual and necessary. The Court requires that the patient's individual circumstances justify the justification of waiting lists, and this is also true in the context of the UK National Health Service. In addition to public services, another sensitive area of services is those classified as illegal. Josemans v. Burgemeester van Maastricht held that the Dutch regulation of cannabis consumption, including the prohibition in some municipalities of tourists (but not Dutch citizens) from entering cafés, does not fall within the scope of Article 56. The Court reasoned that drugs were controlled in all Member States, so this was different from other cases where prostitution or other ostensibly legal activities were restricted. If the activity falls within the scope of Article 56, the restriction can be justified by Article 52 or by the overriding requirements developed by the Court of Justice. In Alpine Investments BV v. Minister van Financiën, a company selling commodity futures (together with Merrill Lynch and other bankers) sought to challenge a Dutch law prohibiting cold calling customers. The Court held that the Dutch ban was legitimately aimed at preventing "undesirable developments in securities trading" and protecting consumers from aggressive sales tactics, thereby maintaining confidence in the Dutch market. In Omega Spielhallen GmbH v. Bonn, the City Council of Bonn banned the operation of a laserdrome company. It had bought counterfeit laser guns from a British company called Pulsar Ltd, but residents had protested against the "killing spree". The Court ruled that the value of human dignity in the German constitution, which was the basis for the ban, was a justified restriction on the freedom to provide services. In Liga Portuguesa de Futebol v. Santa Casa da Misericórdia de Lisboa, the Court also held that the state monopoly on gambling and the penalty imposed on a Gibraltar company selling internet gambling services were justified in order to prevent fraud and gambling at a time when people's opinions were very different. The ban was proportionate because it was an appropriate and necessary way to tackle serious fraud problems on the internet. Article 16 of the Services Directive codified a number of arguments developed by case law.

**Question 0**

Who is covered by the freedom to provide services under Article 56 TFEU?

**Question 1**

Why was a Dutch lawyer who moved to Belgium to advise his client on a social society case told he could not continue?

**Question 2**

What was the Court's conclusion in Josemans v. Burgemeester van Maastricht, which was subject to review in all Member States?

**Question 3**

What did the Dutch health authorities consider unnecessary in Geraets-Smits v Stichting Ziekenfonds?

**Question 4**

To whom does Article 56 TFEU not apply?

**Question 5**

Why should a Dutch lawyer who has moved to Belgium be able to give you legal advice?

**Question 6**

What is not covered by Article 56, according to the Court of Justice?

**Question 7**

What did the Dutch health authorities consider necessary?

**Question 8**

What do many governments think should be covered by Article 56?

**Text number 39**

As regards companies, the Court of Justice held in R (Daily Mail and General Trust plc) v HM Treasury that Member States may restrict the transfer of a company's seat without infringing Article 49 TFEU. This meant that the parent company of the Daily Mail newspaper could not avoid tax by transferring its seat to the Netherlands without first paying its tax bills in the UK. The UK did not need to justify its action as the rules on the residence of companies had not yet been harmonised. In Centros Ltd v Erhversus-og Selkabssyrelsen, on the other hand, the Court found that a British limited company operating in Denmark could not be required to comply with the Danish minimum capital rules. The UK legislation required only £1 capital to set up a company, whereas the Danish legislature considered that the requirement to set up a company was DKK 200 000 (approximately EUR 27 000) to protect creditors in the event of the company failing and becoming insolvent. The Court held that the Danish minimum capital law infringed Centros Ltd's freedom of establishment and could not be justified because a company established in the United Kingdom could indeed provide services in Denmark without being established there and because there were less restrictive means of achieving the objective of protecting creditors. This approach was criticised as potentially opening up the EU to unjustified regulatory competition and a race to the bottom in terms of standards, as in the US where the state of Delaware attracts the most companies and often claims to have the worst standards of corporate accountability and, as a result, low corporate taxes. Similarly, in Überseering BV v Nordic Construction GmbH, the Court held that a German court could not deny a Dutch construction company the right to enforce a contract in Germany on the ground that it was not validly incorporated in Germany. Although restrictions on the freedom of establishment could be justified by the protection of creditors, the right of employees to take part in the work or the public interest in tax collection, the refusal to act went too far: it was a "direct denial" of the right of establishment. In Cartesio Oktató és Szolgáltató bt, however, the Court reaffirmed that, since companies are created by law, they are in principle subject to any rules of incorporation that the State of incorporation wishes to impose. This meant that the Hungarian authorities could prevent a company from transferring its central administration to Italy, even though it was still active and had been established in Hungary. The Court thus draws a distinction between the right of establishment of foreign companies (where restrictions must be justified) and the right of a State to determine the conditions for companies established in its territory, although it is not entirely clear why.

**Question 0**

Which newspaper's parent company could not avoid taxes by moving its registered office to the Netherlands?

**Question 1**

How much capital did UK law require to start a business?

**Question 2**

How much capital did Danish law require to start a business?

**Question 3**

What could be the justification for restrictions on freedom of establishment?

**Question 4**

In which case did the Court of Justice rule that a German court could not refuse a Dutch construction company the right to enforce a contract concluded in Germany?

**Question 5**

Who is upset that Member States cannot restrict a company from relocating without violating Article 49 TFEU?

**Question 6**

Who could avoid taxes by moving their residence to the Netherlands?

**Question 7**

Why did the UK need to justify its actions?

**Question 8**

How much capital did the UK not require to start a business?

**Question 9**

How much did Denmark not require to start a business?