**Document number 315**

**Text number 0**

Germany is a federal republic made up of sixteen states (Bundesländer in German).As today's Germany is formed from a previous collection of several states, it has a federal constitution and the states retain a certain degree of autonomy. For geographical reasons, Berlin and Hamburg are often referred to as Stadtstaat (city states), as is the Free Hanseatic City of Bremen, which includes the cities of Bremen and Bremerhaven. The remaining 13 states are called Flächenländer (literally: regional states).

**Question 0**

How many states are there in Germany?

**Question 1**

What is the German term for states?

**Question 2**

What other cities are called Stadtstaat than Bremen?

**Question 3**

How many countries are called "Flächenländer"?

**Question 4**

Which cities are part of the Free Hanseatic City of Bremen?

**Question 5**

How many states are there in the Stadtstaat?

**Question 6**

What are Bremen and Bremerhaven often called?

**Question 7**

What else does Flachenlander have?

**Question 8**

In which state are the cities of Berlin and Hamberg located?

**Question 9**

What were the cities of Berlin and Hamberg formed from?

**Question 10**

What kind of republic is Switzerland?

**Question 11**

What is one of the sixteen German Länder?

**Question 12**

What is one of the German Länder?

**Question 13**

What is the name of a German state that is not a city state?

**Question 14**

Flachenlander is one of how many German Länder?

**Text number 1**

The Federal Republic of Germany was created in 1949 by the merger of the western states that emerged after the Second World War (formerly under the control of the United States, the United Kingdom and France). In 1949, the Federal Republic of Germany initially consisted of Baden, Bavaria (German: Bayern), Bremen, Hamburg, Hesse (Hessen), Lower Saxony, North Rhine-Westphalia, Rhineland-Palatinate, Schleswig-Holstein, Württemberg-Baden and Württemberg-Hohenzollern. West Berlin was not formally part of the Federal Republic, but was largely integrated and was considered a de facto Land.

**Question 0**

When was the Federal Republic of Germany founded

**Question 1**

Which countries were previously under the administration of the Federal Republic of Germany?

**Question 2**

Which city was not originally part of the Federal Republic of Germany?

**Question 3**

As a result of which was the Federal Republic of Germany established?

**Question 4**

When was the Federal Republic of France founded?

**Question 5**

After which event was France founded in 1949?

**Question 6**

Which region was not officially part of Bavaria?

**Question 7**

Who ruled West Berlin before the Second World War?

**Question 8**

Which country was not officially part of Britain?

**Question 9**

What was created in 1959 in Germany?

**Question 10**

What is one of the eastern states' administrations?

**Question 11**

What was founded before the Second World War?

**Question 12**

Which region has always been part of the Federal Republic of Germany?

**Question 13**

What was the Federal Republic of Germany founded before the war?

**Text number 2**

In 1952, Baden, Württemberg-Baden and Württemberg-Hohenzollern merged after a referendum to form Baden-Württemberg. In 1957, the Saar protectorate joined the federal state as Saarland. German reunification in 1990, with the German Democratic Republic (East Germany) becoming a federal republic, led to the newly created eastern states of Brandenburg, Mecklenburg-Western Pomerania (Mecklenburg-Vorpommern), Saxony, Saxony-Anhalt and Thuringia joining it, as well as the unification of West and East Berlin into Berlin and its establishment as a sovereign and equal state. The 1996 regional referendum on the unification of Berlin and surrounding Brandenburg into "Berlin-Brandenburg" failed to achieve the necessary majority in Brandenburg, while the majority of Berliners voted in favour of unification.

**Question 0**

To which city did Baden, Württemberg-Baden and Württemberg-Hohenzollern merge?

**Question 1**

In which year were Baden, Württemberg-Baden and Württemberg-Hohenzollern united?

**Question 2**

In 1957, the Saar protectorate rejoined the Federal Republic under the name of which city?

**Question 3**

When did German reunification take place?

**Question 4**

Why did the 1996 regional referendum to merge Berlin with surrounding Brandenburg fail?

**Question 5**

What was merged into Baden-Wurttemberg in 1957?

**Question 6**

What did the majority of Berliners vote in 1957?

**Question 7**

What happened to the 1990 referendum on the unification of East Berlin into Saxony?

**Question 8**

In what year did the Brandenberg merger take place?

**Question 9**

What did the Protectorate of Baden rejoin in 1990?

**Question 10**

Which regions were merged in 1957?

**Question 11**

When did Saarland secede from the Federal Republic?

**Question 12**

Which countries became Berlin in 1980?

**Question 13**

In which year did Baden secede from Württemberg-Baden and Württemberg-Hohenzollern?

**Question 14**

Which country was reunited in 1980?

**Text number 3**

Federalism is one of Germany's well-established constitutional principles. According to the German constitution (Grundgesetz or Basic Law), some matters, such as foreign affairs and defence, are the exclusive competence of the federal government (i.e. the federation), while others are the joint competence of the Länder and the federal government; the Länder retain legislative power in all other areas, including 'culture', which in Germany includes not only the economic promotion of art and science, but also most forms of education and vocational training. Although international relations, including international agreements, are primarily a matter for the federal level, the Länder have certain limited powers in this area: the Länder defend their interests at federal level through the Bundesrat (upper house of the German Bundestag) in matters which concern them directly, and have limited powers to conclude international agreements "with the consent of the federal government" in those areas where they have legislative powers.

**Question 0**

What is the established constitutional principle in Germany?

**Question 1**

What is the exclusive competence for foreign affairs in Germany?

**Question 2**

What is an example of what countries keep for themselves?

**Question 3**

How do the states defend their interests at the federal level?

**Question 4**

Whose consent do countries need to enter into international agreements?

**Question 5**

What is one of the established legislative bodies of the Bundesrat?

**Question 6**

What is another word for external relations?

**Question 7**

Where do countries have exclusive responsibility?

**Question 8**

How does German culture defend its interests at the federal level?

**Question 9**

What are the areas of international relations?

**Question 10**

Which political system is not in place in Germany?

**Question 11**

What is a subject that falls within the exclusive competence of the state?

**Question 12**

How is the federal system defended?

**Question 13**

What power do the states have that does not require federal consent?

**Question 14**

What do states have the exclusive power to negotiate?

**Text number 4**

The term Länder (states) originates from the Weimar Constitution of 1919, before which the states of the German Empire were called states (Staaten). Today, the term Bundesland (federal state) is very common. However, this term is not used officially, neither in the 1919 Constitution nor in the 1949 Basic Law (Constitution). Three Länder call themselves Freistaats (Free States, an old-fashioned German term for republic): Bavaria (since 1919), the Land of Saxony (originally since 1919 and again since 1990) and Thuringia (since 1994). There is little continuity between the current Länder and the predecessors of the Weimar Republic, except for the three Free States and the two city states of Hamburg and Bremen.

**Question 0**

Where does the term Länder come from?

**Question 1**

What were the German states called before 1919?

**Question 2**

What does Bavaria call itself?

**Question 3**

How many free states are there in Germany?

**Question 4**

What are the two city states in Germany?

**Question 5**

Which term originates from the Charter of Fundamental Rights of the 1990 Constitution?

**Question 6**

What was the name of the German states before 1919?

**Question 7**

What is the term commonly used today for the Weimar Republic?

**Question 8**

Which two city states are located in Bavaria?

**Question 9**

What is the old-fashioned Hamberg term for constitution?

**Question 10**

In what year was the German constitution written?

**Question 11**

What were the states of the German Empire called after 1919?

**Question 12**

What term was used in the 1949 Basic Law?

**Question 13**

Which is the only German Land considered to be a city state?

**Question 14**

What is the term used for states that are not considered free states?

**Text number 5**

In Germany, there is an ongoing debate about the new delimitation of federal territory, although "some scholars note that there are significant differences between the territorial governments of the US states and other federal states without any serious call for territorial changes...", as political scientist Arthur B. Gunlicks points out. He summarises the main arguments for border reform in Germany: '... Germany's system of dual federalism requires strong states with the administrative and fiscal capacity to implement legislation and pay for it from their own revenues. Too many Länder also makes coordination between them and with the federal government more complex ...". However, several proposals have so far failed; regional reform remains a contentious issue in German politics and public opinion.

**Question 0**

What is constantly being discussed in Germany?

**Question 1**

What else does Gunlick point out that the German system of dual federalism requires of strong Länder other than the ability to enforce legislation?

**Question 2**

How many proposals have failed so far?

**Question 3**

What is constantly being discussed in America?

**Question 4**

What happens if there are too many regional governments?

**Question 5**

What has failed in America so far?

**Question 6**

How does the American public feel about coordination?

**Question 7**

What does a regional government system need in America?

**Question 8**

What is the issue resolved in Germany?

**Question 9**

Why are regional changes required?

**Question 10**

What did Arthur B. Gunlicks not support?

**Question 11**

What is one reason for increasing the number of Landers?

**Question 12**

What changes have been successfully implemented in Germany?

**Text number 6**

Federalism has a long tradition in German history. The Holy Roman Empire had many small states, of which there were more than 300 around 1796. During the Napoleonic Wars (1796-1814), the number of territories was considerably reduced. After the Congress of Vienna (1815), 39 states formed the Federal Republic of Germany. It was dissolved after the Austro-Prussian War and replaced by the Prussian-hegemonic Federation of Northern Germany; as a result of this war, Prussia remained dominant in Germany, and German nationalism forced the remaining independent states to ally with Prussia in the Franco-Prussian War of 1870-71, after which they agreed to the coronation of Prussian King William as Emperor of Germany. The new German Empire consisted of 25 states (three of which were Hanseatic cities) and the imperial territory of Alsace-Lorraine. The Empire was ruled by Prussia, which controlled 65% of the territory and 62% of the population. The remaining states after the territorial annexations of the Treaty of Versailles continued as republics of the new Federal Republic of Germany. These states were gradually de facto abolished and, under the Nazi regime, were reduced to provinces through the Gleichschaltung process, as the Nazi Gau system largely replaced the states administratively.

**Question 0**

How many small states made up the Holy Roman Empire?

**Question 1**

During which period did the number of regions decrease significantly?

**Question 2**

The Prussian-hegemonic North German Confederation replaced which federal state?

**Question 3**

How much of the population was under Prussian control?

**Question 4**

How much of the country was under Prussian control?

**Question 5**

What has a long tradition in the history of the Holy Roman Empire?

**Question 6**

How many small states were part of Germany between 1796 and 1814?

**Question 7**

How many countries formed the League of Northern Germany after the Napoleonic Wars?

**Question 8**

When did the Holy Roman Empire fall apart?

**Question 9**

What replaced the Holy Roman Empire?

**Question 10**

What is the recent political tradition in Germany?

**Question 11**

How many states were there in Germany by 1796?

**Question 12**

What year was the Congress of Rome held?

**Question 13**

Under whose authority was the German Confederation formed?

**Question 14**

What kind of cities were there in the 25 states of the new German Empire?

**Text number 7**

The Allied military governments redrew Germany's internal borders when the Allies occupied Germany after the Second World War. No single state was allowed to have more than 30% of the population or territory; this was to prevent one state from dominating Germany, as Prussia had done in the past. Initially, only seven of the pre-war Länder remained: Baden (partly), Bavaria (reduced), Bremen, Hamburg, Hesse (enlarged), Saxony and Thuringia. The states with hyphenated names, such as Rhineland-Palatinate, North Rhine-Westphalia and Saxony-Anhalt, owed their existence to the occupying powers, and were created by merging former Prussian provinces with smaller states. The former German territories east of the Oder-Neisse line came under either Polish or Soviet administration, but there was an attempt to maintain sovereignty, at least symbolically, well into the 1960s. However, no attempt was made to create new states in these areas, as they were outside the jurisdiction of West Germany at the time.

**Question 0**

Who redrew Germany's internal borders after the Second World War?

**Question 1**

How much of the population did not belong to one country after the Second World War?

**Question 2**

How many states originally remained in Germany after the Second World War?

**Question 3**

The former German territory east of the Oder-Neisse line came under the administration of which country?

**Question 4**

How many sought to establish new states in the territories east of the Oder-Neisse line?

**Question 5**

Who was responsible for changing the internal borders of Prussia?

**Question 6**

Which individual Rhineland did not have a larger population or area?

**Question 7**

How many states were originally left in Prussia after the Second World War?

**Question 8**

Under whose administration were the occupying powers east of the Oder-Neisse line?

**Question 9**

What was abandoned in East Prussia only after the Second World War?

**Question 10**

Which was redrawn during the Allied occupation after the First World War.

**Question 11**

Who redrew the internal borders after the First World War?

**Question 12**

What was 30% of the region after the Second World War?

**Question 13**

To whom did the area west of the Oder-Neisse line belong?

**Question 14**

When was there an attempt to renounce sovereignty?

**Text number 8**

When West Germany was created in 1949, it consisted of eleven states. In 1952, there were nine states when the three south-western states (South Baden, Württemberg-Hohenzollern and Württemberg-Baden) merged to form Baden-Württemberg. From 1957, when the French-occupied Saar protectorate was restored and formed into the Saarland, the Federal Republic comprised ten Länder, now known as the "old Länder". West Berlin was under the sovereignty of the Western Allies and was neither a state of West Germany nor part of it. However, in many ways it was de facto integrated into West Germany by virtue of its special status.

**Question 0**

How many states were there in West Germany when it was founded?

**Question 1**

What was the sovereignty of West Berlin?

**Question 2**

To which state did West Berlin belong?

**Question 3**

When was Saarland formed?

**Question 4**

How many states were there in Germany in 1952

**Question 5**

When South Baden was created in 1952, how many states were there?

**Question 6**

To what number did the number of states in the Saar Protectorate decrease in 1949?

**Question 7**

Which Länder were merged into Saarland in 1952?

**Question 8**

To whom did South Baden belong?

**Question 9**

What was Saarland's position when it was united with West Germany?

**Question 10**

How many more states did West Germany gain since its creation in 1952?

**Question 11**

When was East Germany founded?

**Question 12**

When was the protectorate of the island handed over to France?

**Question 13**

What are the "new states"?

**Question 14**

To which German state did West Berlin belong?

**Text number 9**

Later, the Constitution was amended to state that the citizens of the 16 Länder had succeeded in achieving German unity in free self-determination and that the Basic Law therefore applied to the German people as a whole. Article 23, which had allowed the accession of "all other parts of Germany", was reworded. It had been used in 1957 to annex the Saar protectorate as the Saarland back to the Federal Republic and was used as a model for German reunification in 1990. The amended article now defines the participation of the Federal Council and the 16 German Länder in European Union affairs.

**Question 0**

Which of the 16 German Länder citizens were later removed from the German constitution?

**Question 1**

Article 23, before it was redrafted, allows what?

**Question 2**

Article 23 was used to reintegrate which country?

**Question 3**

The amended Article 23 now defines the participation of the Federal Council and what else?

**Question 4**

What was changed to indicate that the basic law no longer applied to the German people?

**Question 5**

How was Article 23 redrafted to reintegrate the Saar Protectorate?

**Question 6**

What was used as a model for German unification in 1980?

**Question 7**

Which article is defined by the Federal Council?

**Question 8**

How many Länder are part of the German Confederation?

**Text number 10**

The new federal territory has been debated since the Federal Republic was created in 1949 and even before. Committees and commissions of experts advocated a reduction in the number of states; academics (Rutz, Miegel, Ottnad, etc.) and politicians (Döring, Apel and others) made proposals - some of them far-reaching - for redrawing the borders, but little came of these public debates. The richer countries sometimes advocated territorial reform as a means of avoiding or reducing tax transfers.

**Question 0**

What has been discussed since the Federal Republic was established in 1949?

**Question 1**

What have the experts advocated in terms of delimitation?

**Question 2**

What do richer countries advocate as a way to avoid or reduce tax transfers?

**Question 3**

Since when has there been a debate on the delimitation of state territories?

**Question 4**

Who was in favour of more states?

**Question 5**

Which public debates were far-reaching?

**Question 6**

Why are poorer countries pushing for regional reform?

**Question 7**

What is the benefit for richer countries if regional reform is implemented?

**Text number 11**

The debate on the new demarcation of German territory began in 1919 as part of the discussions on the new constitution. Hugo Preuss, the father of the Weimar constitution, drew up a plan to divide the German Reich into 14 states of roughly equal size. His proposal was rejected because of opposition from the Länder and government concerns. Article 18 of the constitution allowed for a new delimitation of German territory, but set high hurdles: three fifths of the votes cast and at least a majority of the population were needed to decide on a change of territory. In fact, until 1933 there were only four changes in the composition of the German states: the seven Thuringian states were united in 1920, when Coburg chose Bavaria, Pyrmont joined Prussia in 1922 and Waldeck in 1929. Subsequent plans to break up the ruling Prussia into smaller states failed because political conditions were not conducive to state reform.

**Question 0**

When did the debate on capping start in Germany?

**Question 1**

Who was the father of the Weimar Constitution?

**Question 2**

How many states was the German Reich to be divided into?

**Question 3**

How many assemblies took place in the German Länder up to 1933?

**Question 4**

When did Pyrmont join Prussia?

**Question 5**

When did the debate on the new Constitution start?

**Question 6**

Who was the father of the German constitution?

**Question 7**

Who drew up the plan to divide Germany into 14 unequal states?

**Question 8**

What made it impossible to allow a new delimitation in Article 18?

**Question 9**

What could be decided by a simple majority?

**Text number 12**

After the Nazi Party took power in January 1933, the role of the states became less and less important. They became administrative regions of a centralised country. Three changes are particularly noteworthy: on 1 January 1934, Mecklenburg-Schwerin was merged with the neighbouring state of Mecklenburg-Strelitz, and the Groß-Hamburg-Gesetz of 1 April 1937 extended the territory of the city-state, while Lübeck lost its independence and became part of the Prussian province of Schleswig-Holstein.

**Question 0**

When did the Nazi Party take power?

**Question 1**

What happened to the states when they lost their importance under the Nazi regime?

**Question 2**

With which state did Mecklenburg-Schwerin unite on 1 January 1934?

**Question 3**

When was the Greater Hamburg Act passed?

**Question 4**

To which Prussian province did Lübeck belong?

**Question 5**

Who seized power in January 1934?

**Question 6**

Why did Lander's power increase after 1933?

**Question 7**

Under which law could the territory of the united Mecklenburg-Schwerin and Mecklenburg-Strelitz be reduced?

**Question 8**

Who gained their independence in 1937?

**Question 9**

When did Schleswig-Holstein become part of Prussia?

**Text number 13**

As the prime ministers could not agree on the issue, the Parliamentary Council was due to discuss it. Its provisions are set out in Article 29. It contained a binding provision on the new delimitation of the federal territory: the federal territory shall be reviewed ... (paragraph 1). In addition, in regions or parts of regions which had changed their affiliation to a federal state after 8 May 1945 without a referendum, the people could request a review of their current status within one year of the proclamation of the Basic Law (paragraph 2). If at least one tenth of those eligible to vote in the federal elections were in favour, the federal government had to incorporate the proposal into its legislation. A referendum then had to be held in each region or part of a region whose status was to be changed (paragraph 3). The proposal could not enter into force if a majority in one of the regions concerned rejected the amendment. In that case, the bill had to be reconsidered and, if approved, confirmed by referendum throughout the Federal Republic (paragraph 4). The reconsideration had to be completed within three years of the entry into force of the basic law (paragraph 6).

**Question 0**

What was the binding provision in the revision of Article 29 for the new delimitation of federal territory?

**Question 1**

How much of the population must have been in favour of the review?

**Question 2**

What was required for each region or part of a region whose membership was to be changed?

**Question 3**

Which article stated that the reorganisation had to be completed within three years of the entry into force of the basic law?

**Question 4**

If the prime ministers reached an agreement, who dealt with it?

**Question 5**

Which article was used to avoid a new delimitation provision for territories?

**Question 6**

People were allowed to apply for a check, as long as they had what?

**Question 7**

How many people voted in the Bundestag elections?

**Question 8**

Who could introduce a bill even if the regions concerned do not vote for the amendment?

**Text number 14**

In the Paris Accords of 23 October 1954, France offered to establish an independent "Saarland" under the Western European Union (WEU), but in a referendum on the Saarland Statute on 23 October 1955, Saarland voters rejected this plan by a vote of 67.7% to 32.3% (96.5% turnout: 423,434 against, 201,975 in favour), despite the public support of German Chancellor Konrad Adenauer for the plan. The rejection of the Saarlanders was interpreted as support for Saarland's accession to the Federal Republic of Germany.

**Question 0**

In which negotiations did France offer to create an independent Saarland?

**Question 1**

In the referendum on the Saarland Statute of 23 October 1955, what percentage of the population opposed the formation of Saarland?

**Question 2**

What was the turnout for the Saar Statute referendum?

**Question 3**

Which political figure supported the referendum on the Saar Statute?

**Question 4**

The rejection of the Saario plan was interpreted as support for the Saarios to do what?

**Question 5**

What did France offer in the 1954 French agreements?

**Question 6**

Who was under the Eastern European Union?

**Question 7**

By what percentage did the referendum on the Saar Statute pass?

**Question 8**

Which referendum did the voters approve?

**Question 9**

Which German Chancellor opposed the Saar Charter referendum?

**Text number 15**

Article 29(6) stated that if the petition was accepted, a referendum should be held within three years. As the deadline of 5 May 1958 expired without any action being taken, in October 1958 the government of the Land of Hesse lodged a constitutional complaint with the Federal Constitutional Court. The appeal was rejected in July 1961 on the grounds that, under Article 29, the new delimitation of federal territory was a matter for the federal government alone. At the same time, the Court confirmed the territorial review requirement as a binding provision on the relevant constitutional bodies.

**Question 0**

Article 29(6) states that a referendum must be held, if the petition is accepted, within how many years?

**Question 1**

What did the Hessian Government do when the deadline of 5 May 1958 expired?

**Question 2**

When was the action brought by the Land Hessen government dismissed?

**Question 3**

On what grounds was the action brought by the Hessian Government rejected?

**Question 4**

Where in the article did it say that if the petition succeeds, there is no need for a referendum?

**Question 5**

Which government filed the petition to amend the Constitution?

**Question 6**

Who heard the complaint from the Hesse state government?

**Question 7**

Why did the Constitutional Court decide to hear the appeal of the Land Hessen?

**Question 8**

Who did the court tell that they had an obligation to bind regional reviews?

**Text number 16**

In his inaugural speech in Bonn on 28 October 1969, Chancellor Willy Brandt proposed that the government should consider Article 29 of the Basic Law as a binding provision. A committee of experts was set up and named after its chairman, the former Secretary of State Professor Werner Ernst. After two years of work, the experts issued their report in 1973. It presented an alternative proposal for both northern Germany and central and south-western Germany. In the north, either one new state would be created, consisting of Schleswig-Holstein, Hamburg, Bremen and Lower Saxony (solution A), or two new states, one in the north-east consisting of Schleswig-Holstein, Hamburg and the northern part of Lower Saxony (the area between Cuxhaven and Lüchow-Dannenberg) and the other in the north-west consisting of Bremen and the rest of Lower Saxony (solution B). In the central and south-western part, Rhineland-Palatinate (excluding the Germersheim district, but including the Rein-Neckar area) should be merged with Hesse and Saarland (solution C), making the Germersheim district part of Baden-Württemberg.

**Question 0**

What did Chancellor Willy Brandt propose in his speech of 28 October 1969?

**Question 1**

Where did Chancellor Willy Brandt make his speech on 28 October 1969?

**Question 2**

Under whose chairmanship was the Commission of Experts set up?

**Question 3**

When did the expert group deliver its report?

**Question 4**

To which state would the Germersheim district belong?

**Question 5**

Who was the Chancellor who suggested that Article 29 should no longer be a binding provision?

**Question 6**

Who set up the expert group to discuss Article 29?

**Question 7**

When was the Committee of Experts set up?

**Question 8**

What was the proposal for one new state in the south?

**Question 9**

What territory was proposed to be separated from Hesse?

**Text number 17**

The Federal Constitution of the Federal Republic of Germany, the Federal Constitution, stipulates that the administrative structure of each Land must be "in accordance with the principles of republican, democratic and social government based on the rule of law" (Article 28). Most Länder are governed by a cabinet headed by the Minister-President, together with a unicameral legislature called the Landtag. The Länder are parliamentary republics and their legislative/executive relationship is similar to the federal system: legislators are elected by popular vote for four or five-year terms (depending on the Land) and the Minister-President is elected by a majority vote of the Landtag members. The Minister-President appoints a cabinet to run the state agencies and carry out the executive functions of the state government.

**Question 0**

Which article provides that the structure of the government of each federation must be "in accordance with the principles of republican, democratic and social government based on the rule of law"?

**Question 1**

By what figure do most countries operate?

**Question 2**

What is the name of most state legislatures?

**Question 3**

How is the Minister-President elected?

**Question 4**

Who will the minister-president choose to run government agencies?

**Question 5**

Which principles are not required by the Basic Law for Germany to respect?

**Question 6**

Who runs the German federal government?

**Question 7**

What is the name of the federal legislative body?

**Question 8**

What are the differences between parliamentary republics and federal systems?

**Question 9**

Who chooses the cabinet in the Landtag?

**Text number 18**

The governments of Berlin, Bremen and Hamburg are referred to by the term Senate. In the three free states of Bavaria, Saxony and Thuringia, the government is referred to as the state government (Staatsregierung), and in the ten other states as the regional government (Landesregierung). Before 1 January 2000, Bavaria had a bicameral parliament, consisting of the popularly elected Landtag and a Senate composed of representatives of the main social and economic groups in the Land. The Senate was abolished after a referendum in 1998. The Länder of Berlin, Bremen and Hamburg have a slightly different administration from the other Länder. In each of these cities, the executive power is vested in a Senate of about eight members, elected by the state parliament; the senators perform functions similar to those of ministers in the larger states. The Minister-President is the President of the Senate (Senatspräsident) in Bremen, the First Mayor (Erster Bürgermeister) in Hamburg and the First Mayor (Regierender Bürgermeister) in Berlin. Berlin has a parliament called the Abgeordnetenhaus (House of Representatives), while Bremen and Hamburg each have a Bürgerschaft (Parliament). The parliaments of the other 13 Länder are called Landtag (state parliaments).

**Question 0**

What is the name of the governments of Berlin, Bremen and Hamburg?

**Question 1**

What is the name of the government in the three Free States of Bavaria, Saxony and Thuringia?

**Question 2**

What did the Bavarian government have before 2001?

**Question 3**

How many people are in the Berlin Executive Senate?

**Question 4**

What is the name of the Berlin Parliament?

**Question 5**

What kind of government did Bavaria have after 2001?

**Question 6**

Which state has a designated country day?

**Question 7**

What does the Bavarian Landtag consist of?

**Question 8**

How many representatives are there in the Senate of the Berlin legislature?

**Question 9**

What is the common name for the ministers of Berlin, Bremen and Hamburg?

**Text number 19**

German districts (Kreise) are administrative regions and, with the exception of the city states of Berlin, Hamburg and Bremen, all Länder consist of 'rural districts' (Landkreise), unincorporated towns (Kreisfreie Städte, in Baden-Württemberg also 'Stadtkreise' or Stadtkreise), towns which are districts in their own right or special local associations (Kommunalverbände besonderer Art), see below. The Land of Bremen comprises two city districts, while Berlin and Hamburg are both Länder and city districts.

**Question 0**

What are the German regions like?

**Question 1**

Each state, except the free states, consists of a district called the what?

**Question 2**

How many districts are there in Bremen?

**Question 3**

Berlin and Hamburg are states and what else at the same time?

**Question 4**

What are the regions in each Land, including Berlin, Hamburg and Bremen?

**Question 5**

What are cities with districts called?

**Question 6**

What are Berlin and Humburg not considered to be because they are states?

**Question 7**

How many rural areas are there in Bremen?

**Question 8**

What does every state, including the free states, consist of?

**Text number 20**

Special local associations are associations of one or more Landkreise and one or more Kreisfreie Städte, which replace the above-mentioned administrative units at district level. Their purpose is to simplify administration at that level. Typically, a district-free town and its urban hinterland are united in such an association, the Kommunalverband besonderer Art. Such an organisation requires the administering state to enact special laws, as they are not covered by the normal administrative structure of the states concerned.

**Question 0**

A special type of local association is an association of one or more Landkreise that involves what?

**Question 1**

What do local associations replace?

**Question 2**

What are local associations supposed to do?

**Question 3**

What is the typical grouping of unincorporated cities and their urban hinterland?

**Question 4**

What does a special kind of Kommunalverband require?

**Question 5**

Who created unification at the national level?

**Question 6**

What do district-level associations replace?

**Question 7**

Why are district-level associations set up?

**Question 8**

To whom are special laws issued by the district given?

**Question 9**

What is the purpose of district-level governance?

**Text number 21**

Municipalities (Gemeinden): each rural area and each Amt is divided into municipalities, and each urban area has its own municipality. There are (6 March 2009[update]) 12 141 municipalities, the smallest administrative units in Germany. Cities and towns are also municipalities and also have city rights (Stadtrechte). Nowadays, it is mostly just the right to call oneself a town or city. In the past, however, there were many other privileges, such as the right to impose local taxes or to allow industry only within the city limits.

**Question 0**

How is each rural district divided?

**Question 1**

Each urban area is what?

**Question 2**

How many municipalities are there?

**Question 3**

What is the smallest administrative unit in Germany?

**Question 4**

What are the rights of the city called?

**Question 5**

How are rural areas divided?

**Question 6**

What should urban areas not be?

**Question 7**

How many districts are there in Germany?

**Question 8**

What rights do cities and municipalities give up if they become a municipality?

**Question 9**

What special rights does a city have today, apart from the right to be a city?

**Text number 22**

Municipalities have two major political responsibilities. First, they administer programmes approved by the federal or state government. Such programmes usually relate to youth, schools, public health and social assistance. Secondly, Article 28(2) of the Basic Law guarantees municipalities the 'right to regulate, under their own responsibility, all local community affairs within the limits provided by law'. This broad provision allows municipalities to justify a wide range of activities. For example, many municipalities develop and expand the economic infrastructure of their municipalities by developing industrial trade centres.

**Question 0**

How many major policy responsibilities do municipalities have?

**Question 1**

The article gives municipalities "the right to regulate, under their own responsibility, all local community affairs within the limits provided by law".

**Question 2**

What can local government justify under Article 28(2)?

**Question 3**

What is one way in which municipalities can develop economic infrastructure?

**Question 4**

Who have the three most important political responsibilities?

**Question 5**

What does the federal government manage?

**Question 6**

What do state or federally administered programmes usually cover?

**Question 7**

Which article limits local government?

**Question 8**

What guarantees state and federal governments their rights?

**Text number 23**

In south-western Germany, the revision of the territories seemed to be a priority, since the border between the French and American occupied territories ran along the Karlsruhe-Stuttgart-Ulm motorway (now the A8). Article 118 stated that "the division of the territory of Baden, Württemberg-Baden and Württemberg-Hohenzollern into Länder may, notwithstanding the provisions of Article 29, be revised by agreement between the Länder concerned". In the absence of agreement, the revision shall be carried out by federal law, which shall provide for an advisory referendum." As no agreement could be reached, a referendum was held on 9 December 1951 in four different electoral districts, three of which approved the unification (South Baden refused, but was annulled as the combined vote was decisive). On 25 April 1952, the three former Länder merged to form Baden-Württemberg.

**Question 0**

What was considered a regional reform in South-East Germany?

**Question 1**

Which road is the border between the French and US territories?

**Question 2**

Which article did not allow the division of the Baden area?

**Question 3**

What will enter into force if an Article 29 agreement is concluded?

**Question 4**

Which country did not agree and was therefore not included in the December 1951 referendum?

**Document number 316**

**Text number 0**

Many applications of silicate glass are based on its optical transparency, which is why the most important application for silicate glass is window glass. Glass transmits, reflects and refracts light; these properties can be improved by cutting and polishing to produce optical lenses, prisms, fine glassware and optical fibres for high-speed light transmission. Glass can be coloured by adding metallic salts and can also be painted and printed with glass paints. These properties have led to the widespread use of glass in the manufacture of works of art, particularly stained glass. Although fragile, silicate glass is highly durable, and many examples of broken glass survive from early glass-making cultures. Because glass can be shaped or moulded into any shape and because it is a sterile product, it has traditionally been used to make vessels such as bowls, vases, bottles, jars and drinking glasses. In its most massive forms it has also been used for paperweights, marbles and beads. When glass fibre is compressed into extruded glass fibre and matted into glass wool so that it binds air, it becomes a thermal insulation material, and when these glass fibres are embedded in an organic polymeric plastic, they are the key structural reinforcing component of a glass fibre composite. Some objects have historically been so commonly made of silicate glass that they are simply referred to by the material's name, such as drinking and reading glasses.

**Question 0**

What ingredient makes glass colourful?

**Question 1**

What is used in combination with glass fibres to make glass fibre?

**Question 2**

What quality makes silicate glass suitable for use in windows?

**Question 3**

What types of glass products can be used to send data?

**Question 4**

Which product uses glass fibres to hold dead air?

**Question 5**

What ingredient makes glass durable?

**Question 6**

What is used in combination with glass fibres to make glass wool?

**Question 7**

What is the nature of silicate glass that allows it to be used for insulation?

**Question 8**

What types of glass products can be used for reinforcement?

**Question 9**

Which product uses glass fibres to hold a composite material?

**Text number 1**

The most common glass contains other ingredients that change its properties. Lead or silica glass is "brighter" because the increased refractive index causes significantly more specular reflection and increased optical dispersion. The addition of barium also increases the refractive index. Thorium oxide gives the glass a high refractive index and low dispersion, and was previously used in the manufacture of high quality lenses, but because of its radioactivity it has been replaced in modern spectacles by lanthanum oxide. Iron can be added to glass to absorb infrared energy, for example in heat-absorbing filters for film projectors, while cerium(IV) oxide can be used for glass that absorbs UV wavelengths.

**Question 0**

What element is used in the glass to prevent it from heating up too much?

**Question 1**

How does barium affect glass?

**Question 2**

What property of thorium oxide has caused it to no longer be used in spectacles?

**Question 3**

What is the other name for lead glass?

**Question 4**

What are the benefits of thorium oxide besides its refractive index?

**Question 5**

What element is used in glass to prevent it from reflecting more?

**Question 6**

How does barium affect film filters?

**Question 7**

What property of thorium oxide has caused it to no longer be used in projectors?

**Question 8**

What is the other name for cerium oxide?

**Question 9**

What are the benefits of heat-absorbing filters besides the refractive index?

**Text number 2**

Fused quartz is glass made from chemically pure SiO2 (silica). It has excellent thermal shock properties, as it can withstand immersion in water when hot. However, its high melting temperature (1723 °C) and viscosity make it difficult to handle. It is usually mixed with other substances to facilitate handling. One of these is sodium carbonate (Na2CO3, 'soda ash'), which lowers the glass transition temperature. Soda ash makes the glass water-soluble, which is usually undesirable, so lime (calcium oxide [CaO], usually obtained from limestone), some magnesium oxide (MgO) and aluminium oxide (Al2O3) are added to ensure better chemical resistance. The resulting glass contains about 70-74 % silica by weight and is called soda-lime glass. Lime glass makes up about 90 % of the glass produced.

**Question 0**

What causes glass to dissolve in water?

**Question 1**

Why is lime often added to glass?

**Question 2**

What is the percentage of silica in soda-lime glass?

**Question 3**

What are the benefits of fused quartz?

**Question 4**

Besides viscosity, what is the disadvantage of fused quartz?

**Question 5**

What causes glass to dissolve in Na2CO3?

**Question 6**

Why is lime often added to magnesium?

**Question 7**

What percentage of lime glass is obtained from limestone?

**Question 8**

What are the benefits of chemical resistance?

**Question 9**

Besides viscosity, what is the disadvantage of lime glass?

**Text number 3**

After the glass batch is made and mixed, the raw materials are transported to the oven. Lime glass for mass production is melted in gas-fired units. Smaller-scale kilns for special glass include electric melting furnaces, pot furnaces and day tanks. After melting, homogenisation and fining (bubbling), the glass is formed into glass. Flat glass for windows and similar applications is produced by the float glass process, developed between 1953 and 1957 by Sir Alastair Pilkington and Kenneth Bickerstaff of Pilkington Brothers in the UK. They created a continuous strip of glass using a molten tin bath in which molten glass flows unimpeded by gravity. The upper surface of the glass is treated under nitrogen pressure to create a polished surface. The container glass for ordinary bottles and cans is shaped by blowing and pressing. This glass is often slightly chemically modified (by adding alumina and calcium oxide) to make it more water resistant. Other glass forming techniques are shown in the table Glass forming techniques.

**Question 0**

What happens during processing?

**Question 1**

What method is used to make windows?

**Question 2**

What to use on the surface of window glass to make it smooth?

**Question 3**

What is added to the glass of jars to improve water resistance?

**Question 4**

Who were the inventors of the float glass process?

**Question 5**

What happens during editing techniques?

**Question 6**

What method is used to prepare the raw materials?

**Question 7**

What is used on the surface of jars to make them smooth?

**Question 8**

What is added to window glass to improve water resistance?

**Question 9**

Who were the inventors of the molten glass stream?

**Text number 4**

Glass can refract, reflect and emit light according to geometric optics without refracting it. It is used in the manufacture of lenses and windows. The refractive index of ordinary glass is about 1.5. It can be modified by adding low-density materials such as boron, which lowers the refractive index (see crown glass), or it can be increased (up to 1.8) by using high-density materials such as (traditionally) lead oxide (see silica and lead glass) or, in modern use, the less toxic oxides of zirconium, titanium or barium. These high-index glasses (incorrectly known as 'crystal' when used in glass containers) produce more chromatic scattering of light and are valued for their diamond-like optical properties.

**Question 0**

What can be done to reduce the refractive power of glass?

**Question 1**

What is the refractive index of a typical glass?

**Question 2**

What is a toxic additive that increases folding force?

**Question 3**

What is the incorrect name for high-index glasses?

**Question 4**

Why are high-index glasses valued?

**Question 5**

What can be done to reduce the density of glass?

**Question 6**

What is the refractive index of a diamond?

**Question 7**

What is a toxic additive that increases optics?

**Question 8**

What is another name for chromatic dispersion?

**Question 9**

Why are high-index glasses changed?

**Text number 5**

The best known and historically oldest types of glass are "silicate glasses", based on the chemical compound silica (silicon dioxide or quartz), which is the main constituent of sand. In common parlance, the term glass is often used to refer only to this type of material, which is familiar from the material used in window glass and glass bottles. Of the many types of silica-based glass, the common glazing and storage glass consists of a special type of glass called soda-lime glass, which is composed of approximately 75 % silica (SiO2), sodium oxide (Na2O) derived from sodium carbonate (Na2CO3), calcium oxide, also called lime (CaO), and a number of minor additives. Pure silica can be used to produce very clear and durable quartz glass, but quartz's high melting point and very narrow glass transition make glass blowing and heat treatment difficult. In glasses such as soda-lime, compounds added to quartz are used to lower the melting temperature and improve workability, but at the expense of toughness, heat resistance and optical transmittance.

**Question 0**

What types of glass have existed in the distant past?

**Question 1**

What kind of glass are the dishes made of?

**Question 2**

What is sand most often made of?

**Question 3**

What can be used to make very strong and transparent glass?

**Question 4**

What types of glass does the word generally refer to?

**Question 5**

What kind of reservoirs have existed in the distant past?

**Question 6**

What kind of glass are the windows made of?

**Question 7**

What is calcium oxide mostly made of?

**Question 8**

What can be used to manufacture very strong and transparent permeability?

**Question 9**

What kind of workability is meant by the word in general?

**Text number 6**

Glass is widely used largely due to the fact that glass compositions are transparent to visible light. In contrast, polycrystalline materials are generally not transparent to visible light. Individual crystals may be transparent, but their surfaces (grain boundaries) reflect or scatter light, resulting in diffuse reflection. Glass does not contain the internal divisions associated with polycrystalline grain boundaries, so it does not diffuse light in the same way as a polycrystalline material. The surface of glass is often smooth because the molecules of the supercooled liquid during glass formation do not have to be confined within a rigid crystal structure, but can follow the surface tension that creates a microscopically smooth surface. These properties, which give glass its clarity, can be retained even if the glass is partially light absorbing, i.e. coloured.

**Question 0**

What is missing from the glass that makes it transparent?

**Question 1**

What force gives the glass its surface structure?

**Question 2**

What, unlike glass, does not let light through?

**Question 3**

What kind of glass absorbs some light?

**Question 4**

What is missing in the glass that could cause it to be polycrystalline?

**Question 5**

What force gives the glass its rigid crystal structure?

**Question 6**

What, unlike glass, does not absorb light?

**Question 7**

What kind of glass absorbs the molecules of a supercooled liquid?

**Question 8**

What do the individual crystals not contain?

**Text number 7**

Naturally occurring glass, especially glass of volcanic origin, obsidian, was used in many Stone Age societies around the world to make sharp cutting tools, and because of its limited range of occurrence, it was heavily traded. In general, however, archaeological evidence suggests that the first real glass was produced in the northern Syrian coast, Mesopotamia or ancient Egypt. The earliest known glass objects, dating from the mid-3rd millennium BC, were beads, perhaps originally created as incidental by-products of metalworking (slag), or phacena, a vitreous material that predates glass and was produced by a process similar to vitrification.

**Question 0**

What kind of glass is there in nature?

**Question 1**

What type of glass is obsidian?

**Question 2**

What obsidian was used in prehistoric times?

**Question 3**

When are the oldest pearls believed to have been made?

**Question 4**

What glass-like material is produced by a process related to glazing?

**Question 5**

What kind of glass is there in Egypt?

**Question 6**

Obsidian is what kind of slag?

**Question 7**

What was obsidian used for in counterfeiting trials?

**Question 8**

Which vitreous material is produced by a sharp-cutting process?

**Question 9**

Which suggests that the first real glass was a fluke?

**Text number 8**

Colour in glass can be obtained by adding electrically charged ions (or colour centres) that are homogeneously distributed and by precipitating fine particles (as in photochromic glasses). Ordinary lime glass looks thin and colourless to the naked eye, but impurities containing up to 0.1% by weight of iron (II) oxide (FeO) produce a green tint that can be viewed in thick specimens or with scientific instruments. Other FeO and Cr2O3 additives can also be used to produce green flasks. Sulphur is used in combination with carbon and iron salts to form iron polysulphides, resulting in amber glass ranging from yellow to almost black. The amber colour of the glass melt can also be obtained from the reducing combustion atmosphere. Small amounts of manganese dioxide may be added to remove the green tint imparted by iron (II) oxide. When glass is used in art glass or studio glass, it is coloured using carefully guarded recipes that include specific combinations of metal oxides, melting temperatures and 'cooking' times. Most coloured glass used in the art market is produced in large quantities by vendors serving this market, although some glassmakers are able to produce their own colours from raw materials.

**Question 0**

What can give a glass a faint green tint?

**Question 1**

What can prevent glass from turning green?

**Question 2**

What other than additives can give glass a yellow colour?

**Question 3**

What chemical compounds can make glass almost black?

**Question 4**

Charged ions can be used to produce what in glass?

**Question 5**

What can give glass a metallic appearance?

**Question 6**

What can prevent the colour of amber in glass?

**Question 7**

What other additives can give glass a sulphur tint?

**Question 8**

Which chemical compounds can make glass thin?

**Question 9**

Charged ions can be used to produce what in precipitates?

**Text number 9**

Glass remained a luxury material, and the disasters that struck civilisations in the late Bronze Age seem to have halted glass production. The indigenous development of glass technology in South Asia may have started in 1730 BC. In ancient China, however, glassmaking seems to have started late compared to ceramics and metalwork. The term glass developed towards the end of the Roman Empire. The late Roman term glesum originated in the Roman glass-making centre at Trier in modern Germany, probably from a Germanic word meaning a transparent, shiny substance. Glass objects have been found throughout the Roman Empire in domestic, industrial and funerary contexts.

**Question 0**

Where does the word "glass" come from?

**Question 1**

Why did glass work start relatively late?

**Question 2**

In what year did glassmaking begin in Asia?

**Question 3**

Which city was the centre of Roman glass production?

**Question 4**

In which country is Trier located today?

**Question 5**

Where does the word "domestic" come from?

**Question 6**

Where did ceramics begin in Asia?

**Question 7**

In what year did glassmaking begin in Germany?

**Question 8**

Which city was the centre of Roman metalworking?

**Question 9**

Where in the present country were the civilisations of the Late Bronze Age located?

**Text number 10**

Glass was widely used in the Middle Ages. Anglo-Saxon glass has been found in archaeological excavations throughout England, both in settlements and cemeteries. In the Anglo-Saxon period, glass was used to make many objects, such as vessels, beads and windows, and was also used in jewellery. From the 10th century onwards, glass was used for stained glass in churches and cathedrals, the most famous examples being Chartres Cathedral and the Basilica of Saint Denis. From the 13th century onwards, architects designed buildings with stained glass walls, such as the Sainte-Chapelle in Paris (1203-1248) and the east end of Gloucester Cathedral. Stained glass revived in the 19th century with the architecture of the Gothic Revival movement. With the Renaissance and the change in architectural style, the use of large stained glass windows declined. The use of stained glass in domestic buildings increased until most notable houses had stained glass windows. Initially they were small sheets of glass, leaded together, but as technology improved, glass could be produced relatively cheaply in ever larger sheets. This led to larger window panes, and by the 20th century much larger windows were used in ordinary residential and commercial buildings.

**Question 0**

When did stained glass make a big comeback?

**Question 1**

When did stained glass begin to be used in places of worship?

**Question 2**

When did the large stained glass windows decline?

**Question 3**

Which 13th century building is an example of stained glass?

**Question 4**

What did technological changes make possible in ordinary homes?

**Question 5**

When did the bigger sheets make a big comeback?

**Question 6**

When did stained glass start to be used for tableware?

**Question 7**

When did large stained glass windows become commonplace?

**Question 8**

Which 20th century building is an example of stained glass?

**Question 9**

What did archaeological excavations allow in ordinary homes?

**Text number 11**

In the 20th century, new types of glass, such as laminated glass, reinforced glass and glass bricks, have increased the use of glass as a building material and created new uses for glass. Multi-storey buildings often use curtain walls made almost entirely of glass. Similarly, laminated glass has been widely used in vehicle windscreens. Although glass containers have always been used for storage and valued for their hygienic properties, glass is increasingly being used in industry. Eyeglasses have been used for optical glass since the late Middle Ages. The manufacture of lenses has become increasingly skilled and has helped astronomers and has also been applied to other medical and scientific fields. Glass is also used in many solar energy systems as an aperture shield.

**Question 0**

What type of glass is used in cars?

**Question 1**

When were glasses born?

**Question 2**

What material are skyscraper walls often made of?

**Question 3**

What kind of energy systems use glass?

**Question 4**

What kind of scientists use glass for remote sensing?

**Question 5**

What type of glass is used for the aperture covers?

**Question 6**

When did multi-storey buildings come into being?

**Question 7**

What material are walls for storage often made of?

**Question 8**

What types of electrical systems use curtains?

**Question 9**

What kind of scientists rely on windscreens for remote sensing?

**Text number 12**

From the 19th century onwards, many old glassmaking techniques, such as cameo glass, were revived. It was made for the first time since the Roman Empire and was initially used mainly for neoclassical pieces. René Lalique, Émile Gallé and Nancy Daum made coloured vases and similar objects, often in cameo, and also used the technique of gloss. The American Louis Comfort Tiffany specialised in secular and religious stained glass and his famous lamps. In the early 20th century, companies such as Waterford and Lalique began to produce glass art on a large scale in factories. From around 1960 onwards, the number of small studios producing glass artworks by hand increased, and glass artists began to classify themselves as glass carvers and their works as part of the visual arts.

**Question 0**

Which famous lamp manufacturer used glass?

**Question 1**

When did glassmakers start to consider their products as fine art?

**Question 2**

What kind of glass did many Art Nouveau artists use?

**Question 3**

When did mass production of glass art start?

**Question 4**

Which early civilisation made cameo glass?

**Question 5**

Which famous lamp manufacturer used factory production?

**Question 6**

When did glassmakers start to consider their products as neoclassical?

**Question 7**

What kind of glass did many experts use?

**Question 8**

When did mass production of light bulbs start?

**Question 9**

Which early civilisation made coloured vases?

**Text number 13**

The addition of lead(II) oxide lowers the melting point, reduces the viscosity of the melt and increases the refractive index. Lead oxide also facilitates the dissolution of other metal oxides and is used in coloured glasses. The reduction in viscosity of lead glass melts is very significant (about 100 times that of soda glass); this allows easier bubble removal and working at lower temperatures, which is why it is often used as an additive in glass paints and glass moulds. The high ionic radius of the Pb2+ ion makes it very immobile in the matrix and prevents the movement of other ions; lead glass therefore has a high electrical resistance, about two orders of magnitude higher than that of carbonate of lime glass (108.5 vs. 106.5 Ohm-cm, DC 250 °C). For more information, see the section on lead glass.

**Question 0**

What causes glass to melt at lower temperatures?

**Question 1**

How much less viscous is lead glass compared to soda glass?

**Question 2**

Pb2+ causes what in lead glass?

**Question 3**

What does lead oxide facilitate dissolution?

**Question 4**

What makes glass melt higher than soda ash?

**Question 5**

How much less viscous is lead glass compared to lead?

**Question 6**

Pb2+ causes what in bubbles?

**Question 7**

Lead oxide facilitates viscosity reduction where?

**Question 8**

What makes the Pb2+ ion glassy?

**Text number 14**

Oxidase has three categories of components: network formers, intermediates and modifiers. The network formers (silicon, boron, germanium) form a highly cross-linked network of chemical bonds. Intermediates (titanium, aluminium, zirconium, beryllium, magnesium, zinc) can act as both network formers and modifiers, depending on the composition of the glass. Converters (calcium, lead, lithium, sodium, potassium) modify the network structure; they usually occur as ions compensated by nearby unsaturated oxygen atoms bound by a single covalent bond to the glass network and having a single negative charge to compensate for a nearby positive ion. Some elements can play multiple roles; for example, lead can act both as a network former (Pb4+ replaces Si4+) and as a transformer.

**Question 0**

What parts of glass for nets?

**Question 1**

Which components change the shape of the network?

**Question 2**

What kind of component can both create and modify networks?

**Question 3**

What kind of chemical bonding connects the ions to the network?

**Question 4**

What modifier components are used in networks?

**Question 5**

Which components modify oxygen atoms?

**Question 6**

Which type of component can both form and exchange ions?

**Question 7**

What kind of chemical bonding connects cross-linked networks?

**Question 8**

What offsets nearby bonds?

**Text number 15**

Alkali metal ions are small and mobile, and their presence in glass allows a certain degree of electrical conductivity, especially in the molten state or at high temperature. The mobility of the ions reduces the chemical resistance of the glass, allows water to leach out and facilitates corrosion. Alkaline earth metal ions, which have two positive charges and need two oxygen ions, which are not bridges, to compensate for their charge, are themselves much less mobile and also prevent diffusion of other ions, especially bases. The most common commercial glasses contain both alkali and alkaline earth ions (usually sodium and calcium), which facilitates processing and improves corrosion resistance. The corrosion resistance of glass can be achieved by descaling, i.e. the removal of alkali ions from the surface of the glass by reacting with, for example, sulphur or fluorine compounds. The presence of alkaline metal ions also has a detrimental effect on the loss tangent of the glass and its electrical resistance; this must be taken into account for glasses used in electronics (seals, vacuum tubes, lamps, etc.).

**Question 0**

Which component gives glass the ability to conduct electricity?

**Question 1**

How can glass corrosion be prevented?

**Question 2**

What types of ions are present in a typical glass?

**Question 3**

Reaction with what causes dealkalisation?

**Question 4**

What can alkaline ions in glass damage besides the electrical resistance?

**Question 5**

Which component gives glass the ability to crosslink oxygen atoms?

**Question 6**

How can glass breakage be prevented?

**Question 7**

What kind of compounds are in a typical glass?

**Question 8**

Reaction with what causes oxygen ions to compensate for their charge?

**Question 9**

What can be damaged by basic ions in oxygen?

**Text number 16**

New chemical glass compositions or new processing techniques can initially be studied in small-scale laboratory experiments. The raw materials for laboratory-scale glass melts are often different from those used for mass production, due to the low cost factor. In the laboratory, mostly pure chemicals are used. Care must be taken to ensure that the raw materials are not reacted with moisture or other chemicals present in the environment (such as alkali or alkaline earth metal oxides and hydroxides or boric oxide) or that the impurities are quantified (loss on ignition). Evaporation losses during glass melting should be taken into account in the choice of raw materials, e.g. sodium selenite may be preferred to the more volatile SeO2. Also, more reactive raw materials may be preferred over relatively inert raw materials, such as Al(OH)3 over Al2O3. In general, smelting is carried out in platinum crucibles to reduce contamination from crucibles. Glass homogeneity is achieved by homogenising the raw material mixture (glass batch), mixing the melt, and crushing and remelting the first melt. The resulting glass is usually annealed to prevent breakage during processing.

**Question 0**

Which material is useful in glassmaking because it evaporates slowly?

**Question 1**

What containers are used for defrosting?

**Question 2**

Why are different materials used in the laboratory than in the factory?

**Question 3**

Why is glass crushed and re-melted?

**Question 4**

Why is glass glamorised?

**Question 5**

Which metal is useful in glassmaking because of its hydroxides?

**Question 6**

What containers are used for evaporation?

**Question 7**

Why are different materials used in the laboratory than in the environment?

**Question 8**

Why is glass crushed with chemicals?

**Question 9**

Why is glass evaporated?

**Text number 17**

In the past, small batches of amorphous metals with a large surface area (strips, wires, foils, etc.) have been produced using very fast cooling rates. This was originally called "splat cooling" by W. Klement, a Caltech PhD student who showed that cooling rates of the order of millions of degrees per second were sufficient to prevent the formation of crystals, and the metal atoms were "locked" in a glassy state. Amorphous metal wires have been produced by sputtering molten metal onto a rotating metal disk. More recently, several alloys have been produced in layers with a thickness of more than 1 mm. These are known as "bulk metallic glass" (BMG). Liquidmetal Technologies sells a number of zirconium-based BMG. Amorphous steel has also been used to produce batches with mechanical properties that far exceed those of conventional steel alloys.

**Question 0**

Who invented the term "splat cooling"?

**Question 1**

What are thick mixtures made in layers called?

**Question 2**

What does Liquidmetal Technologies use in its mixtures?

**Question 3**

What type of metal makes better alloys than conventional steel?

**Question 4**

Which university did Klement study at?

**Question 5**

Who invented the term alloys?

**Question 6**

What is the name given to thick mixtures made of crystals?

**Question 7**

What does Liquidmetal Technologies use for cooling?

**Question 8**

Which type of metal makes better alloys than Caltech?

**Question 9**

At which university did Klement produce BMG?

**Text number 18**

In 2004, NIST researchers presented evidence that an isotropic non-crystalline metallic phase (called "q-glass") can be grown from a melt. This phase is the first phase, or "primary phase", to form in the Al-Fe-Si system during rapid cooling. Interestingly, experimental evidence suggests that this phase is formed by a first-order transition. Transmission electron microscopy (TEM) images show that the q-glass is formed from the melt as discrete particles that grow spherically and at a uniform growth rate in all directions. The diffraction pattern shows it to be an isotropic glass phase. Yet it has a nuclear barrier, suggesting a discontinuity (or inner surface) at the interface between the glass and the melt.

**Question 0**

Who showed that q-glass can be made from molten glass?

**Question 1**

What shows that there is an inner surface between the glass and the melt?

**Question 2**

What is q-glass?

**Question 3**

What kind of microscope shows that q-glass grows as discrete particles?

**Question 4**

Who showed that q-glass can be made from a nuclear barrier?

**Question 5**

What shows that there is an inner surface between the glass and the metal?

**Question 6**

What is diffraction?

**Question 7**

What kind of microscope shows that q-glass grows as a first-order transition?

**Question 8**

What is formed in the AL-Fe-Si system during the isotropic glass phase?

**Text number 19**

Glass-ceramic materials have many properties in common with both non-crystalline glass and crystalline ceramics. They are formed into glass and then partially crystallised by heat treatment. For example, the microstructure of white ceramics often contains both amorphous and crystalline phases. The crystalline grains are often embedded in a non-crystalline intergranular phase between the grain boundaries. When applied to white ceramics, vitreous means that the permeability of the material to liquids, often but not always water, is very low when determined by a particular test system.

**Question 0**

What word means that ceramics do not absorb liquids?

**Question 1**

What hardens glass ceramics?

**Question 2**

Which materials does glass ceramics have a lot in common with?

**Question 3**

What word means that ceramics are not absorbed into crystals?

**Question 4**

What hardens liquids?

**Question 5**

Which materials do test systems have a lot in common with?

**Question 6**

Where is the water often immersed?

**Question 7**

What types of permeable materials are formed?

**Text number 20**

The term refers mainly to the mixing of lithium and aluminium silicates, resulting in a range of materials with interesting thermomechanical properties. The most commercially important of these materials have the peculiarity that they are not resistant to thermal shocks. As a result, glass ceramics have become very useful for countertop cooking. The negative coefficient of thermal expansion (CTE) of the crystalline ceramic phase can be balanced by the positive CTE of the glass phase. At a certain point (~70% of crystals), the CTE of the glass-ceramic phase is close to zero. This type of glass-ceramic has excellent mechanical properties and can withstand repeated and rapid temperature changes up to 1000 °C.

**Question 0**

How large temperature changes can glass ceramics withstand?

**Question 1**

Because of its heat resistance, glass ceramics are particularly suitable for what?

**Question 2**

What is the most economically important property of glass ceramics?

**Question 3**

What ingredients give glass ceramics their useful heat resistance?

**Question 4**

What proportion of crystalline ceramics gives a product with a CTE of about 0?

**Question 5**

How large temperature changes can CTEs handle?

**Question 6**

Because of their heat resistance, matrices are particularly suitable for what?

**Question 7**

What is the most economically important feature of worktops?

**Question 8**

What ingredients give glass ceramics their beneficial thermal expansion?

**Question 9**

What proportion of crystalline ceramics gives a product with a CTE of about 1000?

**Text number 21**

The mass production of glass windows in the early 20th century had a similar effect. In glass factories, molten glass was poured onto a large cooling table and allowed to spread. The resulting glass is thicker at the pouring point, which is located in the centre of the large plate. These sheets were cut into smaller window panes of uneven thickness, typically with the pour point in the middle of one pane (called "bull's-eyes") for a decorative effect. Modern window glass is made as float glass and has a very uniform thickness.

**Question 0**

What was the name given to the areas in the middle of the old glass plate?

**Question 1**

Where was the thickness of glass greatest in early 20th century glass production?

**Question 2**

Currently, window glass is made of what?

**Question 3**

How was the bull's eye used?

**Question 4**

What was the name given to the areas in the middle of the windows?

**Question 5**

Where was glass poured in early 20th century glass production?

**Question 6**

Currently, the big boards are made of what?

**Question 7**

How was the table used?

**Question 8**

What was poured into the big window?

**Text number 22**

The observation that old windows are sometimes thicker at the bottom than at the top is often taken as evidence that glass flows over the centuries, the assumption being that glass had a fluid property to flow from one form to another. This assumption is incorrect, as glass stops flowing when it solidifies. The observation is based on the fact that when glassblowers in the past commonly produced glass plates, a technique was used to spin molten glass to produce a round, mostly flat and smooth plate (the crown glass process described above). This sheet was then cut to fit the window. The pieces were not perfectly flat, but the edges of the sheet became different thicknesses as the glass was spun. When the glass was fitted to the window frame, it was placed with the thicker side down, both for stability and to prevent water collecting in the lead frames at the bottom of the window. It has sometimes been observed that such glass is installed with the thicker side up, left or right.

**Question 0**

What was the benefit of installing the glass with the thick side down, apart from avoiding water accumulation?

**Question 1**

Who used to make window glass?

**Question 2**

What is the name of the glassmaking process that spun glass into sheets?

**Question 3**

The thickness of the glass plates at the bottom of the glass was once considered proof that glass had the properties of what type of material?

**Question 4**

When does glass stop moving like a liquid?

**Question 5**

What was the advantage of installing the glass with the thick side at the top?

**Question 6**

Who used to make water?

**Question 7**

What is the name of a centuries-old glass-making process?

**Question 8**

The crown glass process was once seen as proof that glass had the properties of what type of substance?

**Question 9**

When does the glass stop moving like the bottom of a window?

**Text number 23**

In physics, the standard definition of glass (or a glassy solid) is a solid formed by rapid quenching of a molten mass. The term glass is often used to describe any amorphous solid with a glass transition temperature Tg. If cooling is sufficiently rapid (relative to the typical crystallization time), crystallization is prevented and instead the disordered atomic configuration of the supercooled liquid freezes to a solid state at Tg. The tendency of a material to form glass when quenched is called its glass-forming capacity. This ability can be predicted by stiffness theory. In general, the glass structure is in a metastable state with respect to its crystalline form, although under certain conditions, for example in atact polymers, there is no crystalline counterpart to the amorphous phase.

**Question 0**

How is "glass" defined in physics?

**Question 1**

What tends to make glass when cooling called?

**Question 2**

What has to happen quickly for the glass to form?

**Question 3**

What predicts the ability to form glass?

**Question 4**

How is "glass" defined in the amorphous phase?

**Question 5**

What is called the tendency to make glass from atactic polymers?

**Question 6**

What has to happen quickly for polymers to form?

**Question 7**

What predicts amorphous phases?

**Question 8**

What happens when metastable conditions are prevented?

**Text number 24**

Some consider glass to be a liquid because it does not have a first-order phase transition, where certain thermodynamic variables such as volume, entropy and enthalpy are discontinuous in the glass transition region. The glass transition can be described analogously to a second-order phase transition, where intensive thermodynamic variables such as thermal expansion and heat capacity are discontinuous. However, the equilibrium theory of phase transitions does not fully apply to glass, so that the glass transition cannot be classified as one of the classical equilibrium phase transitions in solids.

**Question 0**

What is not in the glass that makes some people think it is a liquid?

**Question 1**

Which theory is not entirely valid for glass?

**Question 2**

The transition in glass is comparable to what?

**Question 3**

What is not in glass that makes some people think it is a classic balance?

**Question 4**

Which theory is not fully valid for thermodynamic variables?

**Question 5**

Heat transfer is comparable to what?

**Question 6**

Which variables are intensive in the glass transition zone?

**Question 7**

What do some people consider to be a change?

**Text number 25**

Although the atomic structure of glass shares features with that of a supercooled liquid, glass generally behaves as a solid below the glass transition temperature. A subcooled liquid behaves like a liquid, but below the freezing point of the material, and in some cases crystallises almost instantly if a crystal is added as a nucleus. The change in heat capacity of similar materials in the glass transition and melting transition is generally of the same order of magnitude, indicating that the change in active degrees of freedom is also comparable. In both glass and crystal, in most cases only the vibrational degrees of freedom remain active, while the rotational and translational motion stops. This helps to explain why both crystalline and non-crystalline solids are rigid on most experimental time scales.

**Question 0**

Atomically, glass is the same as what?

**Question 1**

What acts like a liquid, but is below freezing temperature?

**Question 2**

Despite its atomic structure, cooled glass works like what?

**Question 3**

What kind of movements stop in the cooled glass?

**Question 4**

Atomically, a crystal is similar to what?

**Question 5**

What behaves like a liquid, but is below the experimental scale?

**Question 6**

Despite their atomic structure, crystals work like what?

**Question 7**

What kind of movements stop in a traditional movement?

**Question 8**

What behaves as a solid?

**Document number 317**

**Text number 0**

First identified by Max Planck in 1900, it was originally a constant of proportionality between the minimum energy E of a hypothetical electrically charged oscillator in a blackbody radiation cavity and the frequency f of the associated electromagnetic wave. In 1905 Einstein theoretically associated the value E, the minimum energy gain of the hypothetical oscillator, with the 'quantum' or smallest element of the electromagnetic wave energy itself. The quantum of light behaved in some respects as an electrically neutral particle, unlike the electromagnetic wave. It was eventually called a photon.

**Question 0**

What name is used to abbreviate energy in science?

**Question 1**

What is also called frequency in science?

**Question 2**

Which term describes a small number of elements?

**Question 3**

How did the light quantum behave?

**Question 4**

What was later called a photon?

**Question 5**

When did Max Planck first identify the value of Planck's constant?

**Question 6**

Five years after Planck's recognition, which scientist connected Planck's constant to the quantum?

**Question 7**

Instead of an electromagnetic wave, how did the photon behave in some respects?

**Question 8**

What is the simple name given to the quantum of light today?

**Question 9**

In what year did Einstein link the value G to quantum theories of energy?

**Question 10**

Who discovered the link between the value of G and quantum energy?

**Question 11**

What was the charge on the particle that behaved in the same way as dark quantum energy?

**Question 12**

Which term describes a large number of elements?

**Question 13**

What is the simple name of the dark quantum nowadays?

**Text number 1**

Classical statistical mechanics assumes the existence of h (but does not define its value). Eventually, after Planck's discovery, it was recognised that physical action cannot have an arbitrary value. Instead, it must have a multiple of some very small quantity, the "quantum of action", now called Planck's constant. Classical physics cannot explain this fact. In many cases, such as monochromatic light or atoms, this quantum of action also means that only certain energy levels are allowed and values between them are forbidden.

**Question 0**

Classical statistical mechanics requires the existence of what?

**Question 1**

What happened after Planck's discovery?

**Question 2**

What was Planck's constant previously known as?

**Question 3**

What does Planck's constant mean for atoms?

**Question 4**

For atoms, what are the values between certain energy levels considered by the Planck constant?

**Question 5**

After Planck's discovery, what was understood about the values of physical action?

**Question 6**

What was Planck's constant originally called?

**Question 7**

How is the relativity of Planck's constant explained?

**Question 8**

In certain cases of light or atoms, what do you get from the quantum of action?

**Question 9**

What value does modern statistical mechanics not define?

**Question 10**

What is not required in modern statistical mechanics?

**Question 11**

What does Planck's constant disprove?

**Question 12**

What is Planck's constant, incorrectly known as?

**Question 13**

In which science is the relative nature of Planck's constant a fact?

**Text number 2**

Similarly, the smallness of Planck's constant reflects the fact that everyday objects and systems are composed of a large number of particles. For example, green light, with a wavelength of 555 nanometres (the approximate wavelength to which the human eye is most sensitive), has a frequency of 701454000000000000000000000000000♠540 THz (701454000000000000000000000000000♠540×1012 Hz). Each photon has an energy of E = hf = 69813580000000000000000000000000000♠3.58×10-19 J. This is a very small amount of energy for everyday experience, but everyday experience is no more about individual photons than it is about individual atoms or molecules. The amount of light compatible with everyday experience is the energy of a single photon mole; its energy can be calculated by multiplying the energy of photons by the Avogadro constant, NA ≈ 7023602200000000000000000000000♠6.022×1023 mol-1. The result is that the energy of green light at a wavelength of 555 nm is 7005216000000000000000000000000♠216 kJ/mol, which is a typical everyday energy.

**Question 0**

What does the smallness of Planck's constant show?

**Question 1**

At which wavelengths of light are the human eyes most sensitive?

**Question 2**

At what frequency does a green light with a wavelength of 555 nanometres work?

**Question 3**

How do you calculate the energy of a single mole photo?

**Question 4**

How much energy does green light with a wavelength of 555 nm contain?

**Question 5**

To which wavelengths of light are the human eyes most sensitive?

**Question 6**

To which frequency of light is the human eye most sensitive?

**Question 7**

What is the energy of a photon?

**Question 8**

How much energy is contained in the light to which the human eyes are most sensitive?

**Question 9**

What ordinary things, such as furniture and solid objects, are never made of?

**Question 10**

What wavelength of light can the human eye no longer see?

**Question 11**

What colour is the human eye blind to?

**Question 12**

What does the smallness of Planck's constant ignore?

**Text number 3**

In the last years of the 19th century, Planck studied the problem of blackbody radiation, which Kirchhoff had first posed some forty years earlier. It is well known that hot objects glow and that hotter objects glow brighter than cooler ones. The electromagnetic field follows similar laws of motion to a mass on a spring and can reach thermal equilibrium with hot atoms. A hot object in equilibrium with light absorbs as much light as it emits. If the object is black, i.e. it absorbs all the light hitting it, its thermal light emission will be at its maximum.

**Question 0**

What did Planck study in the late 19th century?

**Question 1**

Who proposed the blackbody radiation problem?

**Question 2**

Cooler objects glow less than objects that are what?

**Question 3**

What does a black object do to the light hitting it?

**Question 4**

What is maximised when a black object absorbs all the light hitting it?

**Question 5**

Planck investigated what problem originally posed by Kirchhoff?

**Question 6**

If the object is black, what do we know about the radiation of its thermal light?

**Question 7**

What is known about the absorption of light by a hot body in equilibrium with light?

**Question 8**

What are the laws governing electromagnetic fields?

**Question 9**

What kind of radiation was Planck studying in the late 1700s?

**Question 10**

How many years before Planck's research had the scientific community first avoided blackbody radiation?

**Question 11**

Which scientist has never studied blackbody radiation?

**Question 12**

What is required for thermal differences to occur in an electromagnetic field?

**Question 13**

What does a hot object in equilibrium reflect as much as it radiates?

**Text number 4**

The assumption that the radiation from a blackbody is thermal radiation leads to a precise prediction: the total amount of radiated energy increases with increasing temperature, according to Stefan-Boltzmann's law (1879-84). But it was also known that the colour of the light emitted by a hot object changes with temperature, so that "white hot" is hotter than "red hot". However, Wilhelm Wien found a mathematical relationship between the peaks of curves at different temperatures using the principle of adiabatic invariance. At each different temperature, the curve shifts according to Wien's law of transition (1893). Wien also proposed an approximation for the spectrum of an object that was correct at high frequencies (short wavelength) but not at low frequencies (long wavelength). It was still not clear why the spectrum of a hot object had the shape it did (see diagram).

**Question 0**

Which assumption about the blackbody radiation leads to an accurate prediction?

**Question 1**

What does Stefan-Boltzmann's law say?

**Question 2**

What in a hot object changes with temperature?

**Question 3**

Which colour is hotter than "red hot"?

**Question 4**

What did Wilhelm Wien find?

**Question 5**

According to which rule does the emitted energy increase with increasing temperature?

**Question 6**

Which property of the light emitted by a hot object changes with temperature?

**Question 7**

Who found the mathematical relationship between the light peaks and curves at different temperatures?

**Question 8**

The rule that adjusts the curve at different temperatures is known as what?

**Question 9**

The Vienna spectral model could not accurately predict at which end of the spectrum?

**Question 10**

What makes scientists assume that blackbody radiation will never be generated?

**Question 11**

Which law describes the changes in the light emitted by a frozen object?

**Question 12**

What in a frozen object changes with temperature?

**Question 13**

According to which rule does the emitted energy decrease with temperature?

**Question 14**

What law governs the curve at the same temperatures?

**Text number 5**

Before Planck's work, it was assumed that the energy of a body could have any value - that it was a continuous variable. The Rayleigh-Jeans law gives accurate predictions for a narrow range of values over a given temperature range, but the results diverge more and more as the temperature rises. To formulate Planck's law that correctly predicts the radiation from a blackbody, it was necessary to multiply the classical expression by a complex coefficient with h in both the numerator and denominator. The effect of this complex coefficient h would not be lost if it were set to zero or some other value. Planck's law could not be made into an equation that would reproduce Rayleigh-Jeans' law by changing the values of h, the Boltzmann constant, or any other constant or variable in the equation. In this case, the picture given by classical physics is not reproduced by the results contained in the quantum picture.

**Question 0**

Before Planck, it was assumed that the energy of a body could have what value?

**Question 1**

Rayleigh-Jeans law makes close predictions for which set of values?

**Question 2**

What does Planck's law predict correctly?

**Question 3**

What was in the numerator and denominator of the formula used to formulate Planck's law?

**Question 4**

Planck's work disproved which hypothesis?

**Question 5**

Which rule predicted a narrow range of energy values at lower temperatures?

**Question 6**

What mathematical step did Planck's law require to correctly predict the radiation from a blackbody?

**Question 7**

By changing the values of n, Boltzmann's constant or other variables, you can find out what Planck's law?

**Question 8**

What was the conclusion of the difference between Planck's law and Rayleigh-Jeans law?

**Question 9**

What was assumed that the energy of a body could never take before Planck?

**Question 10**

What does Rayleigh-Jeans law avoid in predicting values?

**Question 11**

What does Planck's law predict incorrectly?

**Question 12**

What was not in the numerator and denominator of the formula used to formulate Planck's law?

**Question 13**

Which hypothesis was confirmed by Planck's work?

**Text number 6**

The blackbody problem was revisited in 1905, when Rayleigh and Jeans (on the one hand) and Einstein (on the other) independently demonstrated that classical electromagnetism could never explain the observed spectrum. This evidence is commonly known as the 'ultraviolet catastrophe', a term coined by Paul Ehrenfest in 1911. They played a major role (along with Einstein's work on the photoelectric effect) in convincing physicists that Planck's postulate of quantized energy levels was more than a mere mathematical formalism. The very first Solvay conference in 1911 was devoted to 'the theory of radiation and quanta'. Max Planck was awarded the Nobel Prize in Physics in 1918 "in recognition of his contribution to physics through the discovery of energy quanta".

**Question 0**

Einstein and which two other people revisited the black-body problem in 1905?

**Question 1**

Who coined the term "ultraviolet catastrophe"?

**Question 2**

When did Paul Ehrenfest coin the term "ultraviolet catastrophe"?

**Question 3**

When was the first Solvay conference held?

**Question 4**

Who won the Nobel Prize in Physics in 1918?

**Question 5**

What did Rayleigh & Jeans and Einstein independently prove in 1905?

**Question 6**

What name did Paul Ehrenfest give to the Einstein and Rayleigh & Jeans proofs?

**Question 7**

When was the first Solvay conference held?

**Question 8**

What was the theme of the first Solvay conference?

**Question 9**

In what year did Planck win the Nobel Prize in Physics for the discovery of energy quanta?

**Question 10**

Which two other people, apart from Einstein, revisited the black-body problem in 1945?

**Question 11**

Who has never used the term "ultraviolet catastrophe"?

**Question 12**

When was the last Solvay conference held?

**Question 13**

Who refused the Nobel Prize in Physics in 1918?

**Question 14**

Who won the Nobel Prize in physics for the destruction of energy quanta?

**Text number 7**

The photoelectric phenomenon is the emission of electrons (called photoelectrons) from a surface when light is applied to it. It was first observed by Alexandre Edmond Becquerel in 1839, although the credit usually goes to Heinrich Hertz, who published the first detailed study in 1887. A second particularly thorough study was published by Philipp Lenard in 1902. Einstein's 1905 paper on the phenomenon using light quanta won him the Nobel Prize in 1921, after the experimental work of Robert Andrews Millikan confirmed his prediction. The Nobel Committee awarded the prize for work on the photoelectric effect rather than relativity because of its reservations about purely theoretical physics, which is not based on discovery or experiment, and because its members disagreed about whether relativity had actually been proved.

**Question 0**

Who was the first to discover the photoelectric phenomenon?

**Question 1**

When was the photoelectric phenomenon first observed?

**Question 2**

Who published the first in-depth study of the photoelectric phenomenon?

**Question 3**

Who won the Nobel Prize in 1921 for his work on the photoelectric effect?

**Question 4**

What did Einstein win the Nobel Prize for in 1921?

**Question 5**

What is the photoelectric effect?

**Question 6**

Who was the first to discover the photoelectric phenomenon?

**Question 7**

Which year did Einstein win the Nobel Prize for his paper on the photoelectric effect?

**Question 8**

Einstein's work on the photoelectric phenomenon was rewarding, unlike his work on what other subject?

**Question 9**

Who was the last person to observe a photoelectric phenomenon?

**Question 10**

When was the photoelectric phenomenon last observed?

**Question 11**

Who published the first in-depth study on the effect of photosynthesis?

**Question 12**

What did Einstein win the Nobel Prize for in 1924?

**Question 13**

What is the photoneutral effect?

**Text number 8**

Before Einstein's paper, electromagnetic radiation, like visible light, was thought to behave like a wave: hence the terms 'frequency' and 'wavelength' were used to describe different types of radiation. The energy transmitted by a wave in a given time is called its intensity. The light from a theatre spotlight is more intense than the light from a domestic light bulb; in other words, the spotlight releases more energy per unit of time and space (and thus consumes more electricity) than an ordinary light bulb, even though the colour of the light may be very similar. Other waves, such as sound or waves hitting the seashore, also have their own intensity. However, the energy description of the photoelectric phenomenon did not seem to match the wave description of light.

**Question 0**

Before Einstein, electromagnetic radiation was thought to behave like what?

**Question 1**

What terms describe different types of radiation?

**Question 2**

What is the energy transferred by a wave in a given time?

**Question 3**

What types of waves other than light have their own intensity?

**Question 4**

Before Einstein's work, the behaviour of light was modelled by what?

**Question 5**

What is the term for the amount of energy transferred by a wave in a given time?

**Question 6**

What part of the photoelectric phenomenon was inconsistent with the accepted description of the behaviour of light?

**Question 7**

What does it mean if one light source is more powerful than the other?

**Question 8**

Which terms describe the same type of radiation?

**Question 9**

What is the energy lost by a wave over a long period of time?

**Question 10**

What other types of waves than light do not have their own intensity?

**Question 11**

What is the name for the amount of energy dissipated by a wave in a given time?

**Question 12**

What does it mean that the light source is equally powerful?

**Text number 9**

The "photoelectrons" emitted as a result of the photoelectric phenomenon have a certain kinetic energy that can be measured. This kinetic energy (for each photoelectron) is independent of the intensity of the light, but depends linearly on the frequency; and if the frequency is too low (which corresponds to an energy of the photons that is less than the work function of the material), no photoelectrons are emitted at all, unless then several photons, whose energy sum is greater than the energy of the photoelectrons, act practically simultaneously (the multiphoton effect) if assumed, that the frequency is high enough to produce a photoelectric phenomenon, an increase in the intensity of the light source will cause more photoelectrons to be emitted at the same kinetic energy than will cause the same number of photoelectrons to be emitted at a higher kinetic energy.

**Question 0**

What is emitted by the photoelectric phenomenon?

**Question 1**

What does the kinetic energy of a photoelectron depend on?

**Question 2**

What happens if the photoelectron frequency is too low?

**Question 3**

What is the term used when photoelectrons work virtually simultaneously?

**Question 4**

What is the energy of the photoelectrons emitted by the photoelectric phenomenon?

**Question 5**

On which element in the light source does the energy of the photoelectrons depend?

**Question 6**

When the energy of the photons is less than the work function of the material to which the light is directed, how many photoelectrons are emitted?

**Question 7**

If a photoelectric phenomenon is underway, increasing the intensity of the light source will cause what?

**Question 8**

What infusion occurs as a result of the photoneutral effect?

**Question 9**

What does the kinetic energy of the photoelectron lose?

**Question 10**

What happens if the frequency of the photoelectron remains the same?

**Question 11**

What type of energy do photoelectrons emitted by the photon neutral effect have?

**Text number 10**

Niels Bohr introduced the first quantized atomic model in 1913 in an attempt to overcome a major shortcoming of Rutherford's classical model. According to classical electrodynamics, a charge orbiting a circle should emit electromagnetic radiation. If this charge were an electron orbiting a nucleus, the radiation would cause it to lose energy and rotate downwards to the nucleus. Bohr solved this paradox by explicitly referring to Planck's work: an electron in Bohr's atom can only have certain specific energies En

**Question 0**

Who introduced the first quantized atomic model?

**Question 1**

When was the first quantized atomic model presented?

**Question 2**

Why was the first quantized atomic model introduced?

**Question 3**

According to classical electrodynamics, what should a charge moving in a circle do?

**Question 4**

Who modelled the atom in 1913 and challenged Rutherford's model?

**Question 5**

What did Rutherford's model predict would happen to an electron orbiting a nucleus?

**Question 6**

What claim did Bohr make about the electron in the atom, referring to Planck's work?

**Question 7**

Who introduced the last quantized atomic model?

**Question 8**

When was the last time a quantized molecular model was presented?

**Question 9**

Why was the first quantized nuclear model destroyed?

**Question 10**

Who modelled the molecule in 1918 and challenged the Rutherford model?

**Question 11**

What claim did Bohr make about the nucleus of the atom?

**Text number 11**

Bohr also introduced the quantity , now known as Planck's constant, which is the quantum of angular momentum. Initially Bohr thought that this was the angular momentum of every electron in the atom: this proved to be incorrect, and despite the developments of Sommerfeld and others, the accurate description of the angular momentum of the electron turned out to be outside Bohr's model. The correct quantization rules for electrons - in which the energy is reduced to the Bohr model equation for the hydrogen atom - were given by Heisenberg's matrix mechanics in 1925 and Schrödinger's wave equation in 1926: the reduced Planck constant is still the fundamental quantum of angular momentum. In modern language, if J is the total angular momentum of a system with rotational invariance and Jz is the angular momentum measured in each direction, these quantities can only have the following values.

**Question 0**

Who introduced the reduced Planck constant?

**Question 1**

What is the reduced Planck constant, also called?

**Question 2**

Who helped give the correct quantization rules for electrons in 1925?

**Question 3**

Who helped give the correct quantization rules for electrons in 1926?

**Question 4**

What is the Planck constant reduced by Heisenberg and Schrödinger?

**Question 5**

What value did Bohr introduce as the quantum of angular momentum?

**Question 6**

What was Bohr's mistaken belief about Planck's constant?

**Question 7**

Which scientist used matrix mechanics to make the behaviour of electrons match Bohr's model?

**Question 8**

When was the Schrödinger wave equation proposed?

**Question 9**

Who reduced the magnification of the Planck constant?

**Question 10**

What is the extended Planck constant?

**Question 11**

Who helped give the correct quantization rules for electrons in 1945?

**Question 12**

Who helped give the wrong quantization rules for electrons in 1946?

**Question 13**

Which researcher used matrix mechanics to prove wave behaviour against Bohr's model?

**Text number 12**

where the uncertainty is expressed as the standard deviation of the measured value from its expected value. There are several other pairs of physically measurable values that follow a similar rule. One example is time vs. energy. The either-or nature of uncertainty forces measurement efforts to choose between tradeoffs, and since we are dealing with quanta, the tradeoffs are often of the either-or form (as in Fourier analysis), rather than the tradeoffs and gray areas of time series analysis.

**Question 0**

Which measurable value follows a similar angular momentum rule?

**Question 1**

What is forcing measurement companies to choose between trade-offs, in quantum terms?

**Question 2**

What form will the quantum measurement trade-offs take?

**Question 3**

How is uncertainty measured in this experience?

**Question 4**

What kind of analysis fits the either-or nature of uncertainty?

**Question 5**

What example is given of the uncertainty associated with the standard deviation as a second pairwise relationship?

**Question 6**

Avoiding which measurable value is a similar rule for angular momentum?

**Question 7**

What forces measurement to choose between ever compromises in quanta?

**Question 8**

What form of quantum measurement trade-offs are avoided?

**Question 9**

What kind of analysis is appropriate to the either/or nature of certainty?

**Question 10**

What example is given of another pairwise relationship where certainty is associated with deviation?

**Text number 13**

Bohr magneton and nuclear magneton are units used to describe the magnetic properties of an electron and an atomic nucleus. The Bohr magneton is the magnetic moment that an electron would be expected to have if it behaved as a rotating charge according to classical electrodynamics. It is defined by the reduced Planck constant, the elementary charge and the electron mass, all of which depend on the Planck constant: the final dependence on h1/2 (r2 > 0.995) is obtained by expanding the variables.

**Question 0**

What is the unit of magnetic properties of an electron?

**Question 1**

What is the unit of magnetic properties of atomic nuclei?

**Question 2**

Bohr's magneton is the magnetic moment of an electron with what limitation?

**Question 3**

Which three terms define the value of Bohr's magneton?

**Question 4**

What is the unit of magnetic properties of a neutron?

**Question 5**

What is the unit of magnetic properties of nuclear molecules?

**Question 6**

Which three terms define the core value of Bohr?

**Question 7**

What is never defined by the reduced Planck constant?

**Text number 14**

In principle, Planck's constant could be determined by studying the spectrum of a blackbody emitter or the kinetic energy of photoelectrons, and this is how its value was first calculated in the early 1900s. In practice, these methods are no longer the most accurate. The CODATA value cited here is based on three KJ2RK watt measurements and one inter-laboratory determination of the molar volume of silicon, but was largely determined by a watt measurement made at the US National Institute of Standards and Technology (NIST) in 2007. Five other measurements using three different methods were initially considered but were not included in the final refinement because they were too imprecise to affect the result.

**Question 0**

How was Planck's constant calculated in the early 1900s?

**Question 1**

The value of Planck's constant quoted here is based on a measurement taken in?

**Question 2**

Where was this measurement taken?

**Question 3**

Which method was used to perform the measurement?

**Question 4**

Which element was the molar volume measured?

**Question 5**

In what year was the measurement of Planck's constant avoided?

**Question 6**

Where was this measurement ignored?

**Question 7**

What could be determined by studying the spectrum of a white body emitter or the nuclear energy of photoelectrons?

**Question 8**

What can never be measured by molar volume?

**Text number 15**

There are both practical and theoretical difficulties in determining H. The practical difficulties can be illustrated by the fact that the two most accurate methods, the watt balance and the X-ray crystal density method, do not seem to agree with each other. The most likely reason is that the measurement uncertainty of one (or both) of these methods is thought to be too low - they are not (or are not) as accurate as is currently believed - but so far there is no indication which method is at fault.

**Question 0**

What is the main practical difficulty in determining n?

**Question 1**

Why does this difficulty arise?

**Question 2**

Which method is at fault or what is the contradiction?

**Question 3**

What is the main practical difficulty in determining x?

**Question 4**

Why are there no difficulties?

**Question 5**

What method is needed to detect the anomaly?

**Question 6**

What are the difficulties in determining h?

**Text number 16**

The theoretical difficulties stem from the fact that all methods, with the exception of the X-ray crystal density method, are based on the theoretical foundation of the Josephson effect and the quantum Hall effect. If these theories are slightly inaccurate - although there is currently no evidence that they are - the methods would not give accurate values for Planck's constant. More importantly, the values of Planck's constant obtained in this way cannot be used as tests of the theories without getting into a circular argument. Fortunately, there are other statistical means of testing theories, and the theories have not yet been disproved.

**Question 0**

Methods other than the X-ray crystal density method are based on which two effects?

**Question 1**

Why is there concern about invoking these effects?

**Question 2**

Using Planck's constant values for these effects would lead to what logical problem?

**Question 3**

What is the saving power of these theories?

**Question 4**

Why is reliance on these theories not redemptive?

**Question 5**

What logical problem would using Planck's constant values for these effects never lead to?

**Question 6**

Which theories have always been disproved?

**Question 7**

Which effects are never trusted?

**Text number 17**

The watt balance allows the comparison of two power levels, one measured in SI watts and the other in conventional electrical units. The definition of a conventional watt, W90, yields an input in SI units of KJ2RK, where RK is the von Klitzing constant of quantum efficiency. If the theoretical treatments of the Josephson effect and the quantum Hall effect are valid, and in particular if it is assumed that RK = h/e2, the measurement of KJ2RK is a direct determination of the Planck constant.

**Question 0**

What is the wattage balance?

**Question 1**

What value does the RK represent?

**Question 2**

If the effects hold when RK = n/e2, what is the equivalent of measuring KJ2RK?

**Question 3**

What does watt balance avoid?

**Question 4**

What value does RM represent?

**Question 5**

What is the measurement result of KJ2RR?

**Question 6**

What gives the product KJ2RR measured in SI units?

**Text number 18**

The gyromagnetic ratio γ is the proportionality constant between the frequency ν of the nuclear magnetic resonance (or electron paramagnetic resonance) and the applied magnetic field B: ν = γB. The hyrromagnetic ratio is difficult to measure precisely because of the difficulty of measuring B exactly, but the value of protons in water at 70022981500000000000000♠25 °C is better known than one millionth. Protons are said to be 'shielded' from the applied magnetic field by electrons in the water molecule, the same effect that causes chemical shift in NMR spectroscopy, and this is expressed by the initial letter of the gyromagnetic ratio symbol γ′p. The gyromagnetic ratio is related to the magnetic moment μ′p of the protected protons, the spin number I (I = 1⁄2 for protons) and Planck's reduced constant.

**Question 0**

The gyromagnetic ratio is the constant ratio between a magnetic field and what?

**Question 1**

How does a water molecule affect the magnetic fields of protons?

**Question 2**

What three factors influence the gyromagnetic relationship?

**Question 3**

The gyromagnetic ratio is often difficult to determine because it is difficult to determine exactly what value?

**Question 4**

What is the difference in relativity between the frequency ν of the nuclear magnetic resonance (or electron paramagnetic resonance) and the magnetic field used?

**Question 5**

What are the three factors that affect the gyroelectric relationship?

**Question 6**

What is never related to the magnetic moment of a shielded proton?

**Question 7**

Which effect is the same effect that causes the chemical shift in CMR spectroscopy?

**Text number 19**

In addition, measuring γ′p involves measuring the electric current: this is invariably measured in standard amperes rather than SI amperes, so a conversion factor is needed. The symbol Γ′p-90 is used for the measured gyromagnetic ratio in conventional electrical units. In addition, there are two methods of measuring the value, the 'low field' method and the 'high field' method, and the conversion factors are different in these two cases. Only the high-field value Γ′p-90(hi) is of interest in determining the Planck constant.

**Question 0**

How many methods are there for measuring the gyromagnetic ratio?

**Question 1**

How do the conversion factors differ between "low field" and "high field" methods of measuring the gyromagnetic ratio?

**Question 2**

Which method is of interest for determining the Planck constant?

**Question 3**

Why is measuring the electric current a problem when assessing the gyromagnetic ratio?

**Question 4**

How many methods are there for measuring the gyroelectric ratio?

**Question 5**

How do the conversion factors differ for measuring the gyroelectric ratio using "low field" and "high field" methods?

**Question 6**

Which method is of interest for determining the Planck difference?

**Question 7**

Why is measuring the gyroelectric current a problem when assessing the gyromagnetic ratio?

**Text number 20**

Faraday's constant F is the charge on one mole of electrons, which is equal to Avogadro's constant NA multiplied by the elementary charge e. It can be determined by careful electrolysis experiments in which the amount of silver dissolved from an electrode in a given time and with a given electric current is measured. In practice, it is measured in conventional electrical units and is therefore given the symbol F90. By replacing the definitions of NA and e and converting the conventional units of electricity into SI units, the relationship to the Planck constant is obtained.

**Question 0**

What is Faraday's constant?

**Question 1**

How is Faraday's constant determined?

**Question 2**

How is Faraday's constant related to Planck's constant?

**Question 3**

How is the standard value of Farday calculated quickly?

**Question 4**

What is the Faraday difference?

**Question 5**

How is the Faraday difference determined?

**Question 6**

What does Faraday's difference have to do with Planck's difference?

**Question 7**

How is the Farday differential calculated slowly?

**Text number 21**

The X-ray crystal density method is primarily a method for determining the Avogadro constant NA, but since the Avogadro constant is related to the Planck constant, it also determines the value of h. The principle of the method is to determine NA as the ratio between the unit cell volume of a crystal, measured by X-ray crystals, and the molar volume of matter. Silicon crystals are used because they are available in high quality and purity through technology developed for the semiconductor industry. The volume of a unit cell is calculated from the distance between two crystal planes, called d220. The molar volume Vm(Si) requires information about the density of the crystal and the atomic weight of the silicon used. Planck's constant is

**Question 0**

What is the preferred method for determining the Avogadro constant?

**Question 1**

The Avogadro constant is defined in the X-ray crystal density method as the relationship between which two factors?

**Question 2**

What element is typically used to define the Avogadro constant?

**Question 3**

How is the volume of a unit cell calculated?

**Question 4**

Calculating the molar volume requires knowledge of which two factors?

**Question 5**

What is the secondary method for determining the Avogadro equilibrium?

**Question 6**

What element is typically used to define the Avogadro formula?

**Question 7**

How is the volume of a kernel calculated?

**Question 8**

What two pieces of knowledge are needed to calculate the volume of the Sun?

**Question 9**

What is not available to the semiconductor industry in high quality and purity?

**Text number 22**

Several proposals have been made to redefine certain basic SI units in terms of fundamental physical constants. This has already been done for the metre, which is defined in terms of a fixed value for the speed of light. The most urgent unit to be redefined is the kilogram, whose value has been established for science as a whole (since 1889) on the basis of the mass of a small cylinder of platinum-iridium alloy, stored in a vault outside Paris. Although no one knows whether the mass of the prototype of the international kilogram has changed since 1889 - the value of its mass in kilograms, 1 kilogram, is by definition unchanged, and herein lies one of the problems - it is known that over such a time span many similarities exist, Pt-Ir alloy cylinders stored in national laboratories around the world have changed their relative mass by several tens of parts per million, no matter how carefully they have been stored, and even more so the more often they have been removed and used as a mass standard. A change of a few tens of micrograms per kilogram corresponds to the current uncertainty in the value of Planck's constant in SI units.

**Question 0**

Which measurement redefinition for physical constants is considered the most important?

**Question 1**

What is the basic unit of a kilogram based on the shape of an object?

**Question 2**

What is the basic unit of a kilogram made of?

**Question 3**

Where is the basic unit of kilogram stored?

**Question 4**

Which measurement is considered the least important to redefine in terms of physical constants?

**Question 5**

What is the shape of the object that makes up the base unit of a kilometre?

**Question 6**

Which value has changed continuously since 1889?

**Question 7**

Where is the peak unit of a kilometre kept?

**Question 8**

What kind of mixture is never used to measure a kilogram?

**Text number 23**

The legal process to change the definition of the kilogram is already underway, but it was decided that a final decision would not be taken until the next meeting of the Weights and Measures Assembly in 2011. (For more information, see the section on Kilogram definitions.) Planck's constant is one of the leading candidates for the basis of the new definition, although not the only one. Possible new definitions include 'the mass of a body at rest whose equivalent energy is equal to the energy of photons whose sum of frequencies is 70501356392739999999999♠135639274×1042 Hz', or simply 'a kilogram is defined as Planck's constant equal to 69666626068959999999999♠6.62606896×10-34 J⋅s'.

**Question 0**

When would the decision to change the definition of the kilogram have been taken at the earliest?

**Question 1**

Was Planck's constant the only option for redefining the kilogram?

**Question 2**

At what energy would the mass of a resting object be equal to one kilogram?

**Question 3**

What is the value of a kilogram of Planck's constant?

**Question 4**

Where would the decision to change the definition of a kilometre have been taken at the latest?

**Question 5**

What is the only thing that can form the basis of a new definition?

**Question 6**

When did the legal process to change the definition of the kilogram end?

**Question 7**

What definition has never been tried to be changed?

**Document number 318**

**Text number 0**

Public policy and political leadership will help "level the playing field" and promote wider adoption of renewable energy technologies. Countries such as Germany, Denmark and Spain have led the way in implementing innovative policies, which has accounted for most of the growth over the past decade. Since 2014, Germany has committed to the "Energiewende" project to move towards a sustainable energy economy, while Denmark has committed to 100% renewable energy by 2050. Currently, 144 countries have renewable energy policy targets.

**Question 0**

What is driving the uptake of renewable energy technologies?

**Question 1**

By what year is Denmark committed to using 100% renewable energy sources?

**Question 2**

How many countries currently have a renewable energy policy?

**Question 3**

What is the reason for the lower uptake of renewable energy technologies?

**Question 4**

By what year is Denmark committed to 50% renewable energy?

**Question 5**

How many countries do not have a renewable energy policy?

**Question 6**

What will Denmark be doing in 2055?

**Text number 1**

Total investment in renewables (including small hydropower projects) in 2012 was $244 billion, down 12% from 2011, mainly due to a dramatic fall in solar energy prices and weakening markets in the US and EU. The share of wind and solar power in total investment in power plants increased from 14% in 2000 to over 60% in 2012. The main countries of investment in recent years were China, Germany, Spain, the US, Italy and Brazil. Renewable energy companies include BrightSource Energy, First Solar, Gamesa, GE Energy, Goldwind, Sinovel, Trina Solar, Vestas and Yingli.

**Question 0**

What was the total investment in renewable energy in 2012?

**Question 1**

Why did total investment in renewable energy fall in 2012?

**Question 2**

Which six countries have been the most popular countries for investment in recent years?

**Question 3**

What was the total investment in renewable energy in 2013?

**Question 4**

Why did total investment in renewable energy increase in 2012?

**Question 5**

Why did total investment in renewable energy sources fall in 2002?

**Question 6**

Which eight countries have been the most popular countries for investment in recent years?

**Question 7**

Which six countries have been at the bottom of the list in terms of investment in recent years?

**Text number 2**

EU Member States have shown their support for ambitious renewable energy targets. In 2010, Eurobarometer asked 27 EU Member States about the target of "increasing the share of renewable energy in the EU by 20% by 2020". In all 27 countries, a majority of people either agreed with the target or insisted that it should be exceeded. Across the EU, 57% considered the proposed target "about right" and 16% "too modest". By contrast, 19% considered it "too ambitious".

**Question 0**

Who has shown their support for ambitious renewable energy targets?

**Question 1**

Which group carried out the 2010 survey of the 27 EU Member States?

**Question 2**

By what year was the EU's share of renewable energy sources to increase by 20%?

**Question 3**

Who has never supported ambitious renewable energy targets?

**Question 4**

Which group was surveyed in the 25 EU Member States in 2010?

**Question 5**

Which group was surveyed in the 27 EU Member States in 2000?

**Question 6**

The target was to reduce the share of renewable energy in the EU by 20% by what year?

**Text number 3**

By the end of 2011, total global renewable energy capacity was over 1 360 GW, an increase of 8%. Electricity-generating renewables accounted for almost half of the 208 GW of capacity added globally during 2011. Wind and solar accounted for almost 40% and 30% respectively. According to the 2014 REN21 report, renewables accounted for 19% of our energy consumption in 2012 and 22% of electricity generation in 2013, with 9% of this energy consumption coming from conventional biomass, 4.2% from thermal energy (non-biomass), 3.8% from hydroelectricity and 2% from wind, solar, geothermal and biomass.

**Question 0**

What was the total global renewable energy capacity at the end of 2011?

**Question 1**

What was the share of renewable energy sources in our energy consumption?

**Question 2**

What was the share of renewable energy sources in our electricity production?

**Question 3**

What was the total global renewable energy capacity at the end of 2012?

**Question 4**

What is the share of renewable energy sources in our energy consumption?

**Question 5**

What was the share of renewables in our electricity production?

**Question 6**

What was the total global renewable energy capacity at the beginning of 2011?

**Text number 4**

Over the five-year period from the end of 2004 to 2009, global renewable energy capacity grew at annual rates of between 10% and 60% for many technologies. In 2011, Achim Steiner, Deputy Secretary-General of the UN, said: 'The continued growth of this core segment of the green economy is not happening by chance. The combination of government target-setting, political support and stimulus funds will underpin the rise of the renewables industry and bring much-needed change to our global energy system." He added: "Renewables are expanding in terms of investment, projects and geographic penetration. At the same time, they will increasingly contribute to the fight against climate change, energy poverty and energy insecurity." Renewable energy sources are therefore becoming increasingly important.

**Question 0**

Who was the UN Under-Secretary of State in 2011?

**Question 1**

In what years did global renewable energy capacity grow by 10-60% per year?

**Question 2**

Who is Achim Steiner?

**Question 3**

Who was the US Under Secretary of State in 2011?

**Question 4**

Who was the UN Under-Secretary of State in 2012?

**Question 5**

Between which years did global renewable energy capacity decline by 10-60% per year?

**Question 6**

Who is not the Secretary-General?

**Text number 5**

According to a 2011 forecast by the International Energy Agency, solar power could provide most of the world's electricity within 50 years and significantly reduce emissions of polluting greenhouse gases. The IEA has stated: "Solar photovoltaic and solar thermal power plants can meet most of the world's electricity demand by 2060 - and half of all energy demand - and wind, hydro and biomass power plants will provide most of the remaining energy". "Solar photovoltaics and concentrated solar power could become the most important source of electricity".

**Question 0**

Which group predicts that solar power could provide most of the world's electricity within 50 years?

**Question 1**

By what year can photovoltaic and solar thermal power plants meet most of the world's electricity demand?

**Question 2**

How much of the world's energy needs can be met by photovoltaic and solar thermal installations by 2060?

**Question 3**

Which group predicts that solar power could provide most of the world's electricity within 40 years?

**Question 4**

What does IAE stand for?

**Question 5**

By what year will photovoltaic and solar thermal power plants never be able to meet most of the world's electricity demand?

**Question 6**

How much of the world's energy needs can be met by photovoltaic and solar thermal installations by 2006?

**Text number 6**

In 2013, China was the world's leading producer of renewable energy with a total capacity of 378 GW, mainly based on hydro and wind power. In 2014, China was the world leader in the production and use of wind, solar PV and smart grid technologies, producing almost as much hydro, wind and solar power as all the power plants in France and Germany combined. China's renewable energy sector is growing faster than its fossil fuel and nuclear capacity. Since 2005, solar cell production in China has increased 100-fold. As China's renewable energy manufacturing has grown, the cost of renewable energy technologies has fallen. Innovation has helped, but market expansion has been the main factor in lowering costs.

**Question 0**

Who led the world in renewable energy production in 2013?

**Question 1**

Since which year has the production of solar cells in China increased 100-fold?

**Question 2**

What is the main factor contributing to cost reductions?

**Question 3**

Who led the world in renewable energy production in 2014?

**Question 4**

Who was not the world's leading renewable energy producer in 2013?

**Question 5**

Since when has solar cell production in Japan increased 100-fold?

**Question 6**

What is not the most important factor in reducing costs?

**Text number 7**

Renewable energy technologies are becoming cheaper due to technological change and the benefits of mass production and market competition. A 2011 IEA report stated, "Renewable energy technologies are becoming cost-competitive in an increasing number of circumstances, and in some cases offer investment opportunities without specific financial support," adding that "critical technologies such as wind and solar will continue to fall in cost." Since 2011[update], the cost of solar and wind technologies has fallen significantly:

**Question 0**

What will become cheaper as a result of technological change?

**Question 1**

Since when have the costs of solar and wind technology fallen significantly?

**Question 2**

Which group stated that "costs of critical technologies such as wind and solar will continue to fall"?

**Question 3**

What will become more expensive as a result of technological change?

**Question 4**

What will become cheaper as a result of technology costs?

**Question 5**

Since when have the costs of solar and wind technology not fallen significantly?

**Question 6**

Which group stated that "the cost of critical technologies such as wind and solar energy will continue to rise"?

**Text number 8**

Renewable energy is also the most economic solution for building new grid-connected capacity in areas with good resources. As the cost of renewable energy falls, the number of economically viable applications will increase. Renewable technologies are now often the most economic solution for building new generation capacity. Where "oil-fired generation is the predominant source of electricity generation (e.g. on islands, off-grid and in some countries), there is now almost always a cheaper renewable solution". In 2012, renewable electricity generation technologies accounted for about half of all new electricity generation capacity additions worldwide. In 2011, 41 gigawatts (GW) of new wind capacity was added, 30 GW of solar PV, 25 GW of hydropower, 6 GW of biomass, 0.5 GW of CSP and 0.1 GW of geothermal energy.

**Question 0**

What is the most economic solution for acquiring new grid-connected capacity in areas with good resources?

**Question 1**

What happens when the number of economically viable applications increases?

**Question 2**

What are now often the most economic solutions for building new production capacity?

**Question 3**

What is the most economic solution for old grid-connected capacity in areas with good resources?

**Question 4**

What happens when the number of economically viable applications decreases?

**Question 5**

What does not happen when the number of economically viable applications increases?

**Question 6**

What are now often the most economic solutions for old production capacity?

**Question 7**

Which are often not the most economic solutions for new production capacity?

**Text number 9**

The use of biomass for heat and power is a fully developed technology that provides a ready-made disposal mechanism for municipal, agricultural and industrial waste. However, the sector has remained relatively stable over the decade to 2007, although demand for biomass (mainly wood) continues to grow in many developing countries. One of the problems associated with biomass is that the material burned directly in digesters produces pollutants that cause serious health and environmental impacts, although improved digester programmes mitigate some of these impacts. First-generation biomass technologies can be economically competitive, but may still require deployment support to overcome public acceptance and small-scale problems.

**Question 0**

What is one of the problems with biomass?

**Question 1**

What can be economically competitive but may still require deployment support?

**Question 2**

What is a fully maturing technology that provides a ready-made disposal mechanism?

**Question 3**

What is one good thing about biomass?

**Question 4**

What can be economically competitive but still not require deployment aid?

**Question 5**

What is a fully maturing technology that does not provide a ready-made disposal mechanism?

**Question 6**

What cannot be economically competitive but may still require deployment support?

**Text number 10**

Hydropower is a term that refers to electricity produced by hydroelectric power; the generation of electrical energy using the gravity of falling or flowing water. Hydropower is the most widely used form of renewable energy, accounting for 16% of global electricity generation - 3,427 terawatt-hours of electricity generation in 2010, and is expected to grow by around 3.1% annually over the next 25 years. Hydropower plants have the advantage of longevity, with many existing plants operating for more than 100 years.

**Question 0**

What is the term used to refer to electricity produced by hydroelectric power?

**Question 1**

What is the most commonly used form of renewable energy?

**Question 2**

What is the share of hydropower in global electricity generation?

**Question 3**

What percentage of electricity production is expected to increase annually over the next 25 years?

**Question 4**

What is a term that does not refer to hydroelectricity?

**Question 5**

What is the term used to refer to electricity produced by means other than hydropower?

**Question 6**

What is the least used form of renewable energy?

**Question 7**

What percentage of the world's electricity generation is non-hydro?

**Question 8**

What percentage of electricity production is expected to increase annually over the next 15 years?

**Text number 11**

Hydropower is produced in 150 countries, and the Asia-Pacific region produced 32% of the world's hydropower in 2010. China is the largest producer of hydropower with 721 terawatt-hours of production in 2010, equivalent to about 17% of domestic electricity use. There are now three hydroelectric power plants of more than 10 GW: the Three Gorges Dam in China, the Itaipu Dam on the Brazil-Paraguay border and the Guri Dam in Venezuela. Hydropower has low costs, making it a competitive source of renewable electricity. Electricity produced by a hydroelectric power plant over 10 megawatts costs on average 3-5 US cents per kilowatt-hour.

**Question 0**

How many countries produce hydroelectric power?

**Question 1**

Which country is the biggest producer of hydropower?

**Question 2**

How many hydropower plants have more than 10 GW?

**Question 3**

What is the average price of electricity produced by a hydroelectric power plant over 10 MW?

**Question 4**

How many countries do not produce hydroelectric power?

**Question 5**

Which country is the smallest hydropower producer?

**Question 6**

How many hydropower plants have more than 20 GW?

**Question 7**

What is the average price of electricity produced by a hydroelectric power plant of less than 10 MW?

**Text number 12**

Geothermal energy capacity increased from around 1 GW in 1975 to almost 10 GW in 2008. The US is the world leader in installed capacity with 3.1 GW. Other countries with significant installed capacity include the Philippines (1.9 GW), Indonesia (1.2 GW), Mexico (1.0 GW), Italy (0.8 GW), Iceland (0.6 GW), Japan (0.5 GW) and New Zealand (0.5 GW). In some countries, geothermal energy accounts for a significant share of total electricity generation, such as in the Philippines, where geothermal energy accounted for 17% of total electricity generation at the end of 2008.

**Question 0**

What was the geothermal capacity in 1975?

**Question 1**

What was the geothermal capacity in 2008?

**Question 2**

What was the share of geothermal energy in total energy production in the Philippines at the end of 2008?

**Question 3**

What was the geothermal capacity in 1985?

**Question 4**

What was the geothermal capacity in 2009?

**Question 5**

What was the share of total geothermal energy in the Philippines at the end of 2008?

**Text number 13**

Several solar power plants have been built, mainly in Europe. In July 2012, the world's largest photovoltaic power plants were Agua Caliente Solar Project (USA, 247 MW), Charanka Solar Park (India, 214 MW), Golmud Solar Park (China, 200 MW), Perovo Solar Park (Russia, 100 MW), Sarnia Photovoltaic Power Plant (Canada, 97 MW), Brandenburg-Briest Solarpark (Germany, 91 MW), Solarpark Finow Tower (Germany, 84 MW).7 MW), Montalto di Castro Solar Power Plant (Italy, 84.2 MW), Eggebek Solar Park (Germany, 83.6 MW), Senftenberg Solarpark (Germany, 82 MW), Finsterwalde Solar Park (Germany, 80.7 MW), Okhotnykovo Solar Park (Russia, 80 MW), Lopbur Solar Park (Thailand, 73.16 MW), Rovigo Solar Power Plant (Italy, 72 MW) and Lieberose Solar Park (Germany, 71.8 MW).

**Question 0**

Where are most of the photovoltaic plants built?

**Question 1**

Where is the Agua Caliente solar energy project located?

**Question 2**

Where is Charanka Solar Park located?

**Question 3**

Where are most solar power plants built?

**Question 4**

Where is the Agua Caliente solar project not going to be located?

**Question 5**

Where is Charanka Solar Field?

**Question 6**

Where is Okhotnykovo State Park?

**Text number 14**

In addition, several large plants are under construction. The Desert Sunlight Solar Farm under construction in Riverside County, California, and the Topaz Solar Farm under construction in San Luis Obispo County, California, are both 550 MW solar farms using thin-film solar modules manufactured by First Solar. The Blythe Solar Power Project is a 500 MW solar farm under construction in Riverside County, California. The California Valley Solar Ranch (CVSR) is a 250 megawatt (MW) solar photovoltaic power plant being built by SunPower in Carrizo Plain, northeast of the California Valley. The 230 MW Antelope Valley Solar Ranch is a First Solar solar photovoltaic project under construction in the Antelope Valley area of the western Mojave Desert, scheduled for completion in 2013. The Mesquite Solar project is a solar photovoltaic power plant to be built in Arlington, Maricopa County, Arizona, owned by Sempra Generation. Phase 1 will have a rated capacity of 150 megawatts.

**Question 0**

Where is the Desert Sunlight Solar Farm currently under construction?

**Question 1**

Where is Desert Sunlight Solar Farm located?

**Question 2**

Who is building the Califoria Valley Solar Ranch?

**Question 3**

Where Desert Sunlight Solar Farm is no longer under construction?

**Question 4**

Where is Desert Sunlight State Farm?

**Question 5**

Who's building a California Valley State Farm?

**Question 6**

What is a 200 megawatt solar power plant?

**Text number 15**

Some second-generation renewables, such as wind power, have great potential and already have relatively low production costs. Global wind installations increased by 35 800 MW in 2010, bringing total installed capacity to 194 400 MW, up 22.5% from 158 700 MW at the end of 2009. The 2010 increase represents a total investment of €47.3 billion (USD 65 billion) and for the first time more than half of all new wind power was added outside the traditional markets of Europe and North America. This is mainly due to the continued rise of China, which accounted for almost half of all installations (16,500 MW), with 42,300 MW of wind power now installed in China. Wind power accounts for around 19% of electricity generation in Denmark, 9% in Spain and Portugal and 6% in Germany and Ireland. In the Australian state of South Australia, wind power, championed by Prime Minister Mike Rann (2002-2011), now accounts for 26% of the state's electricity generation, displacing coal-fired power. At the end of 2011, South Australia, home to 7.2% of Australia's population, accounted for 54% of the country's installed wind power capacity. Wind power accounted for 3.1% of global electricity use at the end of 2014. These are the largest wind farms in the world:

**Question 0**

How much did wind power installations grow worldwide in 2010?

**Question 1**

How much wind power has been installed in China?

**Question 2**

How much of the electricity produced in Denmark is wind power?

**Question 3**

How much of the electricity produced in Spain is wind power?

**Question 4**

How much of the electricity produced in Germany is wind power?

**Question 5**

How much did wind power installations decrease globally in 2010?

**Question 6**

How much wind power has been installed in China?

**Question 7**

How much of the electricity produced in Denmark is wind power?

**Question 8**

How much of the electricity produced in Spain is wind power?

**Question 9**

How much of the electricity produced in Germany is wind power?

**Text number 16**

Since 2014, the US wind industry has been able to generate more electricity at lower cost by using taller blades on taller wind turbines that harness faster winds at higher altitudes. This has opened up new opportunities, and the cost of electricity generated by wind turbines built 300-400 metres above the ground in Indiana, Michigan and Ohio can now compete with traditional fossil fuels such as coal. Prices have fallen to around 4 cents per kilowatt hour in some cases, and utilities have increased the share of wind power in their portfolio because they see it as the cheapest option.

**Question 0**

How can the US wind industry produce more energy at lower cost?

**Question 1**

How tall are the new wind turbines being built in Indiana, Michigan and Ohio?

**Question 2**

Which fuel type can wind turbines in the US now compete with?

**Question 3**

Prices have fallen as low as what price?

**Question 4**

How can the UK wind industry produce more energy at lower cost?

**Question 5**

How tall are the old wind turbines being built in Indiana, Michigan and Ohio?

**Question 6**

Which fuel type can wind turbines in the UK now compete with?

**Question 7**

Prices have risen as high as what price?

**Text number 17**

Solar thermal power plants include the 354 megawatt (MW) Solar Energy Generating Systems power plant in the US, the Solnova Solar Power Station (Spain, 150 MW), the Andasol solar power plant (Spain, 100 MW), Nevada Solar One (US, 64 MW), the PS20 solar power plant (Spain, 20 MW) and the PS10 solar power plant (Spain, 11 MW). The 370 MW Ivanpah solar power plant in the Mojave Desert, California, is the largest solar thermal power plant project under construction in the world. Many other plants are under construction or planned, mainly in Spain and the United States. In developing countries, the World Bank has approved three projects for integrated solar thermal and gas turbine power plants in Egypt, Mexico and Morocco.

**Question 0**

Where is the Ivanpah solar power plant located?

**Question 1**

What is the largest solar thermal power plant project under construction in the world?

**Question 2**

Where is the PS20 solar power tower located?

**Question 3**

Where is the Ivanpah State Institution located?

**Question 4**

What is the largest solar thermal power plant project in the world that is not currently under construction?

**Question 5**

Where is the XBX20 surveillance tower located?

**Question 6**

Where is Nevada Solar Two located?

**Text number 18**

Almost all gasoline sold in the United States is now blended with 10% ethanol, known as E10, and motor vehicle manufacturers are already producing vehicles designed to run on much higher ethanol blends. Ford, DaimlerChrysler and GM are among the car companies selling flexible-fuel cars, trucks and vans that can use blends of petrol and ethanol ranging from pure petrol to 85% ethanol (E85). The challenge is to expand the market for biofuels beyond the agricultural countries where biofuels have so far been most popular. The Energy Policy Act of 2005, which requires 7.5 billion gallons (28,000,000 m3 ) of biofuels to be used annually by 2012, will also help expand the market.

**Question 0**

What percentage of ethanol is blended into almost all gasoline sold in the United States?

**Question 1**

Where does the law require 7.5 billion gallons of biofuels to be used annually by 2012?

**Question 2**

Name one company that sells flexible fuel cars?

**Question 3**

What percentage of ethanol is blended into almost all petrol sold in the UK?

**Question 4**

Where does the law require 7.5 billion British gallons of biofuels to be used annually by 2012?

**Question 5**

What was the Energy Policy Act 2004?

**Question 6**

Name one company that sells cars that do not use flexible fuel?

**Text number 19**

According to the International Energy Agency, cellulosic ethanol bio-refineries could enable biofuels to play a much bigger role in the future than organisations like the IEA previously believed. Cellulosic ethanol can be produced from plant material, which consists mainly of the inedible cellulose fibres that make up the stems and branches of most plants. Crop residues (such as maize stalks, wheat stalks and rice stalks), wood waste and municipal solid waste are potential sources of cellulosic biomass. Specific energy crops, such as switchgrass, are also promising sources of cellulose that can be produced sustainably in many regions.

**Question 0**

What can be made from plant material consisting mainly of the inedible cell fibres that make up the stems and branches of most plants?

**Question 1**

What are the possible sources of cellulose biomass?

**Question 2**

What is a promising source of cellulose that can be produced sustainably in many regions?

**Question 3**

What cannot be made from plant material, which consists mainly of the inedible cell fibres that make up the stems and branches of most plants?

**Question 4**

What are not possible sources of cellulose biomass?

**Question 5**

What is a promising source of cellulose that cannot be produced sustainably in many areas?

**Text number 20**

In 2008[update] geothermal energy was developed in more than 40 countries, partly due to the development of new technologies such as enhanced geothermal systems. The development of double-cycle power plants and improvements in drilling and extraction technology can enable enhanced geothermal systems over a much wider geographical area than "conventional" geothermal systems. EGS demonstration projects are underway in the US, Australia, Germany, France and the UK.

**Question 0**

How many countries were developing geothermal energy in 2008?

**Question 1**

What is one new technology that has contributed to the growth of geothermal energy?

**Question 2**

What's on in the US, Australia, Germany, France and the UK?

**Question 3**

How many countries were developing geothermal energy in 2008?

**Question 4**

How many countries were developing geothermal energy in 2008?

**Question 5**

What is one old technology that has contributed to the growth of geothermal energy?

**Question 6**

What doesn't work in the US, Australia, Germany, France and the UK?

**Question 7**

Where do the demonstration eggs take place?

**Text number 21**

Module prices have been falling in the photovoltaic industry since 2008. In late 2011, factory prices for crystalline silicon PV modules fell below $1.00/W. In the PV industry, an installation cost of $1.00/W is often seen as a sign that PV has reached grid parity. These price reductions have surprised many stakeholders, including industry analysts, and perceptions of the current economic viability of solar energy often lag behind reality. Some stakeholders continue to believe that solar PV is still too expensive without subsidies to compete with conventional generation options. However, technological developments, improvements in manufacturing processes and industry restructuring mean that prices are likely to continue to fall in the coming years.

**Question 0**

Since when have prices for PV modules fallen?

**Question 1**

What is the sign that price reductions are likely to continue in the coming years?

**Question 2**

What costs are often considered to be the key to achieving grid parity for solar electricity?

**Text number 22**

Many energy markets, institutions and policies have been developed to support the production and use of fossil fuels. Newer and cleaner technologies can offer social and environmental benefits, but energy company operators often dismiss renewables because they have been trained to think only in terms of large, conventional power plants. Consumers often ignore renewable energy systems because they are not given accurate price signals about electricity consumption. Intentional market distortions (such as subsidies) and unintentional distortions (such as incentive sharing) can work against renewables. Benjamin K. Sovacool has argued that "some of the most insidious but powerful barriers to renewable energy and energy efficiency in the United States have more to do with culture and institutions than with technology and science."

**Question 0**

Why do electricity utility operators often reject renewable energy sources?

**Question 1**

Why are renewable energy systems often overlooked by consumers?

**Question 2**

Who said that some of the problems of renewable energy are more about culture and institutions than about technology and science?

**Question 3**

Why do energy companies often accept renewable energy sources?

**Question 4**

Why do energy companies only ever accept renewable energy sources?

**Question 5**

Why do consumers often accept renewable energy systems?

**Question 6**

Who agreed that some of the problems of renewable energy are more related to culture and institutions than to technology and science?

**Text number 23**

Lester Brown states that markets "do not internalise the indirect costs of producing goods or services, do not value natural services sufficiently, and do not respect the sustainable yield thresholds of natural systems". The market also favours the short term over the long term, showing little concern for future generations. The transfer of taxes and subsidies can help to address these problems, but there is also a problem in linking the different international normative regimes that regulate this issue.

**Question 0**

Lester Brown says that the market does not contain what?

**Question 1**

Who believes that the market does not value nature's service enough?

**Question 2**

What can help overcome market problems?

**Question 3**

Lester Brown says that the market contains what?

**Question 4**

Who said that the market takes into account indirect costs?

**Question 5**

What can't help overcome market problems?

**Question 6**

Who believes that the market values nature's service enough?

**Text number 24**

The tax transfer has been widely discussed and accepted by economists. It means lowering income taxes and raising taxes on environmentally destructive activities to make markets more responsive. For example, a tax on coal, which would include the increased health costs of breathing polluted air, the damage caused by acid rain and the costs of climate disruption, would encourage investment in renewable technologies. Several Western European countries are already shifting taxes in a process known as environmental tax reform.

**Question 0**

What is the connection between lowering income taxes and increasing contributions?

**Question 1**

Many Western European companies defer taxes in a process known as what?

**Question 2**

What is the purpose of a tax transfer?

**Question 3**

What is the link between lower income taxes and lower contributions?

**Question 4**

What is involved in raising income taxes at the same time as increasing contributions?

**Question 5**

What is involved in raising income taxes and reducing contributions?

**Question 6**

What is not the purpose of a tax transfer?

**Question 7**

Many Northern European companies transfer taxes in a process known as what?

**Text number 25**

Just as it is necessary to transfer taxes, it is also necessary to transfer subsidies. Subsidies are not a bad thing in themselves, as many technologies and industries have been created with the help of government subsidy schemes. The Stern Review explains that of the 20 major innovations made in the last 30 years, only one in 14 was fully funded by the private sector and nine were fully publicly funded. In concrete examples, the Internet was born out of publicly funded connections between computers in government laboratories and research institutes. And the combination of a federal tax credit and a robust California state tax credit helped create the modern wind energy industry.

**Question 0**

What is the need other than a tax transfer?

**Question 1**

What was the result of publicly funded computer interconnections in government laboratories and research institutes?

**Question 2**

What helped create the modern wind industry?

**Question 3**

What else is not needed besides a tax transfer?

**Question 4**

What was not the result of publicly funded computer interconnections in government laboratories and research institutes?

**Question 5**

What was the result of privately funded computer interconnections in government laboratories and research institutes?

**Question 6**

What helped create the ancient wind industry?

**Text number 26**

The commercialisation of renewables involves the deployment of three generations of renewable energy technologies spanning more than 100 years. The first generation of technologies, which are already mature and economically competitive, are biomass, hydropower, geothermal and thermal. Second generation technologies are ready for the market and are being deployed. These include solar thermal, photovoltaic, wind, solar thermal power plants and modern forms of bioenergy. Third generation technologies require continued research and development efforts to make a significant impact on global operations. These include advanced biomass gasification, geothermal hot and dry rock energy and marine energy. In 2012, renewable energy accounted for about half of new nominal electricity capacity, and costs continue to fall.

**Question 0**

What accounted for about half of new nominal electricity capacity in 2012?

**Question 1**

What does the deployment of three generations of renewable energy technologies over 100 years have to do with it?

**Question 2**

Name one second-generation technology that is ready for the market.

**Question 3**

As of 2013, about half of the new nominal electricity capacity will come from

**Question 4**

What does the deployment of three generations of renewable energy technologies over a period of more than 10 years involve?

**Question 5**

Name one third-generation technology that is ready for the market.

**Text number 27**

Lester Brown has argued that "a world facing economically devastating climate change can no longer justify subsidies to increase the burning of coal and oil. The key to stabilising the world's climate is to shift these subsidies to the development of climate-friendly energy sources such as wind, solar, biomass and geothermal. "The International Solar Energy Society advocates "levelling the playing field" by correcting the continuing inequity of public subsidies for energy technologies and research and development, with fossil fuels and nuclear power receiving most of the financial support.

**Question 0**

Which group is in favour of a level playing field?

**Question 1**

How is the International Solar Energy Agency working to level the playing field?

**Question 2**

What is the key to stabilising the Earth's climate?

**Question 3**

Which group rejects a level playing field?

**Question 4**

How does the International Solar Energy Agency propose not to level the playing field?

**Question 5**

What is the key to preventing global climate from stabilising?

**Text number 28**

Some countries are eliminating or reducing climate-disruptive subsidies, and Belgium, France and Japan have phased out all coal subsidies. Germany is reducing its coal subsidies. It fell from $5.4 billion in 1989 to $2.8 billion in 2002, while Germany reduced its coal use by 46%. China cut its coal subsidy from $750 million in 1993 to $240 million in 1995 and has recently introduced a tax on high-sulphur coal. However, the US has increased its support for the fossil fuel and nuclear industries.

**Question 0**

Which country is reducing its coal subsidies?

**Question 1**

Which country has increased its support for the fossil fuel and nuclear industries?

**Question 2**

Some countries have phased out all subsidies for which substance?

**Question 3**

Which country is building its coal subsidy?

**Question 4**

Which country is not reducing its coal subsidies?

**Question 5**

Which country has reduced its support for the fossil fuel and nuclear industries?

**Question 6**

No country has phased out all subsidies for which substance?

**Text number 29**

Setting national renewable energy targets can be an important part of renewable energy policy and these targets are usually defined as a percentage of the primary energy and/or electricity generation mix. For example, the European Union has set an indicative renewable energy target of 12% of the EU's total energy mix and 22% of electricity consumption by 2010. Individual EU Member States have also set national targets to achieve the overall target. Other developed countries with national or regional targets include Australia, Canada, Israel, Japan, Korea, New Zealand, Norway, Singapore, Switzerland and some US states.

**Question 0**

Setting national renewable energy targets can be an important part of what?

**Question 1**

What is the European Union's indicative renewable energy target?

**Question 2**

Name one other country with a defined national or regional objective?

**Question 3**

Setting national renewable energy targets can be an irrelevant part of what?

**Question 4**

Setting national renewable energy targets is never an important part of what?

**Question 5**

The European Union has not set an indicative target for renewable energy, which is what percentage?

**Question 6**

Name one other country that does not have a defined national or regional objective?

**Text number 30**

Public policy determines the extent to which renewable energy is included in the electricity mix of a developed or developing country. This policy is implemented by energy regulators, which influences the pace and pattern of investment in renewables and grid connection. Energy regulators are often empowered to perform a number of functions that affect the economic feasibility of renewable energy projects. These include issuing licenses, setting performance standards, monitoring the performance of regulated companies, setting tariff price levels and structures, establishing uniform accounting systems, resolving stakeholder disputes (such as interconnection cost allocation), conducting administrative audits, developing the agency's human resources (expertise), reporting industry and Commission activities to regulators, and coordinating decisions with other government agencies. Thus, regulators make a wide range of decisions that affect the economic outcomes of renewable energy investments. In addition, the industry regulator can advise the government on the full implications of a focus on climate change or energy security. The energy regulator is a natural advocate for efficiency and cost containment throughout the process of designing and implementing renewable energy policies. Since policies do not happen by themselves, energy regulators become a key facilitator (or inhibitor) of investment in renewable energy.

**Question 0**

What determines the extent to which renewable energy is included in a country's generation mix?

**Question 1**

Who is empowered to carry out a number of tasks that affect the feasibility of renewable energy projects?

**Question 2**

Why have energy regulators become a key driver of renewable energy investment?

**Question 3**

What determines the extent to which renewable energy is included outside the country's production mix?

**Question 4**

What does not determine the extent to which renewable energy is included in a country's generation mix?

**Question 5**

Who does not have the power to perform multiple tasks that affect the feasibility of renewable energy projects?

**Question 6**

Why have energy regulators not become a key driver of renewable energy investment?

**Text number 31**

The driving force behind the voluntary use of green electricity in the EU is the liberalised electricity market and the Renewable Energy Directive. The Directive requires EU Member States to ensure that the origin of electricity produced from renewable energy sources can be guaranteed and therefore to provide a "guarantee of origin" (Article 15). Environmental organisations are using the voluntary market to create new renewable energy sources and improve the sustainability of existing electricity generation. In the United States, the main tool for monitoring and promoting voluntary action is the Green-e programme managed by the Center for Resource Solutions. In Europe, the main voluntary tool used by NGOs to promote sustainable electricity production is the EKOenergy label.

**Question 0**

What is the driving force behind the voluntary use of green electricity in the EU?

**Question 1**

Which EU Member States must ensure that the origin of electricity from renewable energy sources can be guaranteed?

**Question 2**

What is the main tool for monitoring and promoting voluntary activities in the US?

**Question 3**

What is the driving force behind voluntary green electricity use outside the EU?

**Question 4**

What is not the driving force behind voluntary green electricity in the EU?

**Question 5**

According to which EU Member States are not allowed to ensure that the origin of electricity from renewable energy sources can be guaranteed?

**Question 6**

n the US, what is not the most important tool for monitoring and promoting voluntary activities?

**Text number 32**

Several events in 2006 put renewable energy on the political agenda, including the US mid-term elections in November, which confirmed clean energy as a mainstream issue. The 2006 Stern Review made a strong economic case for investing in low-carbon technologies now and argued that economic growth need not be incompatible with reducing energy consumption. According to the United Nations Environment Programme's trend analysis, climate change concerns, combined with recent high oil prices and increasing government support, are driving investment in renewable energy and energy efficiency.

**Question 0**

What has been the strong economic case for investing in low-carbon technology?

**Question 1**

In what year did several events put renewable energy on the political agenda?

**Question 2**

What is the reason for the increase in investment in the renewable energy sector?

**Question 3**

Why was investment in low-carbon technology economically weak?

**Question 4**

What was the strong economic argument for not investing in low-carbon technology?

**Question 5**

In what year did a series of events put renewable energy back on the political agenda?

**Question 6**

What is the reason for the decline in investment in the renewable energy sector?

**Text number 33**

New government spending, regulation and policies helped the sector weather the 2009 economic crisis better than many other sectors. In particular, the American Recovery and Reinvestment Act of 2009, passed by US President Barack Obama, included more than $70 billion in direct spending and tax credits for clean energy and related transportation programs. This combination of policy and stimulus measures represents the largest federal commitment to renewable energy, advanced transportation and energy conservation initiatives in US history. Under these new rules, many more utilities strengthened their clean energy programs. According to Clean Edge, the commercialisation of clean energy will help countries around the world overcome the current economic downturn. Solyndra, once a promising solar energy company, was embroiled in a political controversy after the administration of US President Barack Obama granted the company a $535 million loan guarantee in 2009 as part of a programme to promote alternative energy growth. The company ceased all business operations, filed for bankruptcy under Chapter 11 of the Bankruptcy Code and laid off almost all of its employees in early September 2011.

**Question 0**

What helped the sector to weather the 2009 financial crisis better than other sectors?

**Question 1**

What is there to suggest that commercialising clean energy will help the hell out of countries coping with economic malaise?

**Question 2**

Which company got caught up in the political controversy?

**Question 3**

Which company filed for Chapter 11 bankruptcy?

**Question 4**

What did not help the sector to weather the 2009 economic crisis better than other sectors?

**Question 5**

What helped the sector to weather the 2010 financial crisis better than other sectors?

**Question 6**

What didn't suggest that the commercialisation of clean energy is a hell of a way to help countries out of economic malaise?

**Question 7**

Which company did not get into a political dispute?

**Question 8**

Which business has never had to file for Chapter 11 bankruptcy?

**Text number 34**

Since 2012, renewables have played a significant role in the energy mix of many countries worldwide. Renewable energy sources are becoming increasingly economical in both developing and developed countries. Prices for renewable energy technologies, mainly wind and solar, continued to fall, making renewables competitive with conventional energy sources. However, without a level playing field, the high market share of renewables will continue to depend on strong promotion policies. Subsidies for fossil fuels, which are much higher than for renewables, are still in place and need to be removed quickly.

**Question 0**

What plays a major role in the energy mix of many countries?

**Question 1**

What is increasingly economical in both developing and developed countries?

**Question 2**

Which commodity prices continued to fall in 2012?

**Question 3**

What plays a minor role in the energy mix of many countries?

**Question 4**

What plays a major role in any country's energy mix?

**Question 5**

What plays a major role in each country's energy mix?

**Question 6**

Which commodity prices continued to fall in 2013?

**Text number 35**

UN Secretary-General Ban Ki-moon has said that "renewable energy has the potential to lift even the poorest nations to new levels of prosperity". In October 2011, he "announced the establishment of a High Level Group to support energy access, energy efficiency and increased use of renewable energy sources". The group will be co-chaired by Kandeh Yumkella, President of the UN Energy Agency and Director-General of the UN Industrial Development Organization, and Charles Holliday, Governor of the Bank of America."

**Question 0**

Who is the UN Secretary-General?

**Question 1**

Ban Ki-moon says renewables have the potential to lift the poorest nations to new levels of prosperity?

**Question 2**

Who is the UN Energy Chair?

**Question 3**

Who is the Chairman of the Board of Bank of America?

**Question 4**

Who is the Secretary General of the United Kingdom?

**Question 5**

Who is the US Secretary General?

**Question 6**

Ban Ki-moon says that renewables have the potential to lift the richest nations to new levels of prosperity?

**Question 7**

Who is the Chairman of US Energy?

**Question 8**

Who is the President of the Bank of Canada?

**Text number 36**

Global use of solar and wind power continued to grow significantly in 2012. Solar electricity consumption increased by 58% to 93 terawatt hours (TWh). Wind power use increased by 18.1% in 2012 to 521.3 TWh. Globally installed solar and wind capacity continued to grow, despite a decline in new investment in these technologies in 2012. Global investment in solar energy in 2012 was $140.4 billion, down 11% from 2011, while wind investment fell by 10.1% to $80.3 billion. However, thanks to lower production costs for both technologies, the total installed capacity grew strongly. The decline in investment but increase in installed capacity could be repeated in 2013, with analysts expecting the market to triple by 2030. In 2015, investments in renewables exceeded those in fossil fuels.

**Question 0**

How many percent did solar electricity consumption grow in 2012?

**Question 1**

How much did the use of wind power increase in 2012?

**Question 2**

How much was invested in solar energy worldwide in 2012?

**Question 3**

Analysts expect the market to triple by what year?

**Question 4**

In what year was more investment in renewables than in fossil fuels?

**Question 5**

How many percent did solar electricity consumption decrease in 2012?

**Question 6**

How many percent did solar electricity consumption grow in 2013?

**Question 7**

By how many percent did wind power use decrease in 2012?

**Question 8**

How much was invested in solar energy worldwide in 2013?

**Question 9**

Analysts expect the market to double by what year?

**Text number 37**

Global warming and other ecological and economic concerns have encouraged the use of 100% renewable energy for electricity, transport or even the entire primary energy supply worldwide. The Intergovernmental Panel on Climate Change has concluded that there are few fundamental technical constraints to renewable energy technologies meeting most of the world's total energy needs. Looking at 164 recent scenarios for the future growth of renewables, the report found that in most scenarios renewables were expected to provide more than 17% of total energy by 2030 and 27% by 2050. The highest projection predicted a share of renewables of 43% by 2030 and 77% by 2050. Renewable energy use has been growing much faster than even advocates predicted. At national level, renewables already account for more than 20% of energy production in at least 30 countries around the world. Professors S. Pacala and Robert H. Socolow have also developed a set of "stability wedges" that can help us maintain our quality of life while avoiding catastrophic climate change, and "renewables" form the bulk of their "wedges".

**Question 0**

What motivates you to use 100% renewable energy?

**Question 1**

In how many countries does renewable energy already account for more than 20% of energy production?

**Question 2**

Who developed the stabilising wedges for the series?

**Question 3**

What is the incentive to use 10% renewable energy?

**Question 4**

In how many countries does renewable energy already account for more than 40% of energy production?

**Question 5**

Who abandoned the series of stability wedges?

**Text number 38**

Mark Z., Professor of Civil and Environmental Engineering at Stanford University and Director of its Atmosphere and Energy Program. Jacobson says it is possible to generate all new energy from wind, solar and hydro by 2030, and existing energy supplies could be replaced by 2050. Barriers to implementing the renewable energy plan are seen as "primarily social and political, not technological or economic". According to Jacobson, the energy costs of a wind, solar and hydro system should be similar to current energy costs.

**Question 0**

Who is the Stanford University Professor of Civil and Environmental Engineering?

**Question 1**

What is the obstacle to the implementation of the Renewable Energy Plan?

**Question 2**

Who has said that the energy costs of a wind, solar and hydro system should be similar to the current energy costs?

**Question 3**

According to Jacobson, all new energy generation from wind, solar and hydro is possible by what year?

**Question 4**

Who is a professor of English at Stanford University?

**Question 5**

What is the obstacle to the implementation of a non-renewable energy plan?

**Question 6**

Who said that the energy costs of a wind, solar and hydro system should not be the same as today's energy costs?

**Question 7**

According to Jacobson, it will not be possible to generate all new energy from wind, solar and hydro by what year?

**Text number 39**

Similarly, in the US, the independent National Research Council has concluded that "there are sufficient domestic renewable energy sources to allow renewable electricity to play a significant role in future electricity generation and to help address the problems of climate change, energy security and rising energy costs... Renewable energy is an attractive option because the renewable energy sources available in the United States can combine to produce significantly more electricity than current or projected total domestic demand." .

**Question 0**

Why is renewable energy an attractive option?

**Question 1**

In which country is the National Research Council located?

**Question 2**

Why are there sufficient domestic renewable resources?

**Question 3**

Why is renewable energy not an attractive option?

**Question 4**

In which city is the National Research Council located?

**Question 5**

Why are domestic renewable resources insufficient?

**Document number 319**

**Text number 0**

Palermo (Ital: [paˈlɛrmo] ( listen), Sisil: Palermu, Lat. Panormus, from Greek: Πάνορμος, Panormos, from Arabic: بَلَرْم, Balarm; Phoenician: זִיז, Ziz) is a city in archipelago Italy, capital of both the autonomous region of Sicily and the province of Palermo. The city is known for its history, culture, architecture and gastronomy, and has played an important role for most of its existence; it is over 2,700 years old. Palermo is located in the north-west of the island of Sicily, right on the Bay of Palermo in the Tyrrhenian Sea.

**Question 0**

What is Palermo known for?

**Question 1**

How old is the city of Palermo?

**Question 2**

On which island is Palermo located?

**Question 3**

In which country is Paletrmo a city in Mainland Finland?

**Question 4**

Which city is the capital of the province of Palermo, but not of the region of Sicily?

**Question 5**

Which city has existed since 2700 AD?

**Question 6**

Which city is located in north-west Italy?

**Question 7**

Which city is close to the Gulf of Tyrrhenia?

**Text number 1**

The Phoenicians founded the city in 734 BC under the name Ziz ("flower"). Palermo then became part of Carthage, then part of the Roman Republic, the Roman Empire and finally the Byzantine Empire for over a thousand years. The Greeks gave the city the name Panormus, meaning 'perfect harbour'. From 831 to 1072 the city was under Arab rule during the Sicilian Emirate, when it first became the capital. The Arabs changed the Greek name to Balarm, from which Palermo's current name derives. After the Norman reconquest, Palermo became the capital of the New Kingdom (1130-1816), the capital of the Kingdom of Sicily and of the Holy Roman Empire under Frederick II, Holy Roman Emperor, and Conrad IV, King of Germanic Rome. Eventually, Sicily was united with the Kingdom of Naples to form the two Kingdoms of Sicily until the unification of Italy in 1860.

**Question 0**

In what year was Palermo founded?

**Question 1**

What was the name under which Palermo was originally founded?

**Question 2**

Which group of people founded Palermo?

**Question 3**

What name did the Greeks give Palermo?

**Question 4**

For how many years did the Arabs rule Palermo?

**Question 5**

Who founded Palermo in 734 AD?

**Question 6**

Who changed the name of Palermo to Ziz?

**Question 7**

Who changed the name of the city from Balarmus to Panormus?

**Question 8**

Who took control of the city in 1072?

**Question 9**

What year was Palermo united?

**Text number 2**

Palermo is the cultural, economic and tourist capital of Sicily. It is a city rich in history, culture, art, music and food. The city attracts numerous tourists for its good Mediterranean weather, famous gastronomy and restaurants, Romanesque, Gothic and Baroque churches, palaces and buildings, nightlife and music. Palermo is the main industrial and commercial centre of Sicily: the main industries are tourism, services, commerce and agriculture. For cultural, artistic and economic reasons, Palermo was one of the largest cities in the Mediterranean and is now one of the most popular tourist destinations in Italy and Europe. The city is also undergoing a major redevelopment in preparation to become one of the major cities of the Euro-Mediterranean region.

**Question 0**

What kind of churches attract tourists to Palermo?

**Question 1**

Which city is the main industrial and commercial centre of Sicily?

**Question 2**

What are Palermo's four main industries?

**Question 3**

Which city is the cultural, economic and tourist capital of Italy?

**Question 4**

Who likes Palermo's subtropical weather?

**Question 5**

Which city is the most important industrial and cultural centre in Italy?

**Question 6**

Why is Palermo one of the biggest cities in Europe?

**Question 7**

What is Sicily going through?

**Text number 3**

Palermo is surrounded by limestone mountains that form a ring around the city. Some parts of the city are divided by the mountains themselves. Historically, the interior of Sicily was relatively difficult to reach from the city because of the mountains. The highest peak in the mountains is La Pizzuta, which is about 1 333 m high. Historically, however, the most important mountain is Monte Pellegrino, which is geographically separated from the rest of the mountain range by a plain. The mountain is located just off the Tyrrhenian Sea. In the 19th century, Johann Wolfgang von Goethe described Monte Pellegrino as 'the most beautiful peninsula in the world' in his essay 'A Journey through Italy'.

**Question 0**

What is the geographical shape of Palermo?

**Question 1**

Which writer described Monte Pelegrino as "the most beautiful peninsula in the world"?

**Question 2**

What is the highest mountain in Sicily?

**Question 3**

Where is Monte Pellegrino located in relation to other peaks?

**Question 4**

What are the valleys surrounding the city?

**Question 5**

Why is Palermo difficult to reach from Sicily?

**Question 6**

Which peak is 1333 feet high?

**Question 7**

Which mountain is separated from the rest by a valley?

**Question 8**

Who photographed Monte Pellegrino in the 20th century?

**Text number 4**

Today, both the Papireto River and the Kemonia are covered by buildings. However, the shape of the former waterways can still be recognised today, as the streets built over them follow their shape. Today, the only waterway that has not yet been drained is the River Oreto, which separates the city centre from the western suburbs and industrial areas. However, the basins had many seasonal flows, which helped to form marshlands that have historically been reclaimed; a good example of this is in the Mondello district.

**Question 0**

How can former rivers be identified today?

**Question 1**

What is Palermo's only remaining waterway?

**Question 2**

Which two former rivers in Palermo are now construction sites?

**Question 3**

Which waterways run through Pallermo?

**Question 4**

What will follow Oreto's former course?

**Question 5**

Which river divides the east and west sides of the city?

**Question 6**

Which helped to form the rivers.

**Text number 5**

In 734 BC, the Phoenicians, a maritime trading people from north of ancient Canaan, built a small settlement in the natural harbour of Palermo. According to some sources, they gave the settlement the name 'Ziz'. It became one of the three most important Phoenician settlements in Sicily, along with Motya and Soluntum. However, there are few traces of Phoenician presence in the city, mostly preserved in the well-populated central area, which makes excavations expensive and logistically difficult. The location chosen by the Phoenicians made it easy to connect the port with the mountain by a direct road, which has now become Corso Calatifimi. This road helped the Phoenicians to trade with the population living in the mountains surrounding the bay.

**Question 0**

What name did the Phoenicians give to the colony they founded in 734 BC?

**Question 1**

Which two other important settlements belonged to the Phoenicians besides Ziz?

**Question 2**

Why can't Phoenician artefacts be easily unearthed?

**Question 3**

What is the current name of the Phoenician trade route?

**Question 4**

Who built the settlement at the Hatbor in Palermo?

**Question 5**

Where did the Phoenicians build a port in 734 AD?

**Question 6**

Where is today's port of Ziz?

**Question 7**

Which road helped the Phoenicians to trade with the Arabs?

**Question 8**

What were the other Tewo-Canaanite settlements in Sicily?

**Text number 6**

The first settlement is defined as Paleapolis (Παλεάπολις), which in ancient Greek means 'old city', to distinguish it from the second settlement built in the 5th century BC, called Neapolis (Νεάπολις), 'new city'. Neapolis was built facing east, and together with it monumental walls were built around the entire settlement to prevent attacks by foreign threats. Part of this construction can still be seen in the Cassaro area. This district was named after the walls; the word Cassaro comes from the Arabic al-qsr (castle, fortress). Along the walls, there were few doors to enter and exit the city, suggesting that trade was often carried on to the interior of the island. Some studies also suggest that there may have been walls between the old town and the new town. The settlement developed around the central street (decumanus), which was cut perpendicularly by small streets. This street has now become Corso Vittorio Emanuele.

**Question 0**

Why was the first settlement called Paleapolis?

**Question 1**

What were the walls of Naples supposed to do?

**Question 2**

Which district was named after the walls surrounding it?

**Question 3**

What did the Arabs call the "old city"?

**Question 4**

What was built in the 500s BC?

**Question 5**

What is the first settlement in Naples?

**Question 6**

What was built around the settlement to keep the sea water out?

**Question 7**

Which district was the wall named after?

**Text number 7**

Carthage was Palermo's main trading partner under the Phoenicians, and the city enjoyed a long period of peace during this time. Palermo came into contact with the ancient Greeks in the 6th-5th centuries. This preceded the Sicilian Wars, the conflict between the Sicilian Greeks of Syracuse and the Phoenicians of Carthage for control of the island of Sicily. During this war, the Greeks named the place Panormos (Πάνορμος), from which it took its present name, which, because of the shape of the coast, means 'all harbour'. From Palermo, the fleet of Hamilcar I (which was defeated at the Battle of Himera) set sail. In 409 BC. Hermocrates of Syracuse sacked the city. The Sicilian Wars ended in 265 BC, when Carthage and Syracuse ceased warfare and united to prevent the Romans from gaining complete control of the island during the First Red War. In 276 BC. During the Pyrrhic War, Panormos briefly became a Greek colony after being conquered by Pyrrhus of Epirus, but returned to Phoenician Carthage in 275. In 254 BC, the Romans besieged and conquered Panormos in the First Battle of Panormos (name in Latin). Carthage attempted to reconquer Panormos in 251 BC but failed.

**Question 0**

In which war did the Greeks and Phoenicians fight for control of Sicily?

**Question 1**

Why did the Sicilian Wars end?

**Question 2**

Who conquered Panormos and turned it into a Greek colony for a while?

**Question 3**

Why did the Greeks name Palermo Panormos?

**Question 4**

Who was Palermo's main trading partner during the Greek period?

**Question 5**

Who had a time of peace at Carthage?

**Question 6**

With whom did Palermo have dealings from the 500s to 600 BC?

**Question 7**

Witch wars went on in Palermo and ancient Greece?

**Question 8**

Whose fleet set sail from Carthage in 408 BC?

**Text number 8**

With the fall of the Roman Empire, Palermo came under the control of several Germanic tribes. The first were the Vandals in 440 AD under their king Geiseric. By 455, the Vandals had conquered all the Roman provinces of North Africa and had become a major force. Shortly afterwards they took control of Corsica, Sardinia and Sicily. However, they soon lost these newly acquired territories to the North. The conquest of Ostrobothnia began under Theodorus the Great in 488; Theodorus supported Roman culture and administration, unlike the Germanic Goths. The Gothic War was fought between Ostrobothnia and the Eastern Roman Empire, also known as the Byzantine Empire. Sicily was the first part of Italy to be taken under the control of General Belisarius, by order of the Eastern Emperor. Justinian I consolidated his power in the following years.

**Question 0**

How had the vandals earned their strong reputation?

**Question 1**

Who took over the Vandal site after 488?

**Question 2**

How did Theodorik differ from the Germanic Goths?

**Question 3**

By what name was the Eastern Roman Empire known?

**Question 4**

Who left Palermo to the Roman Empire?

**Question 5**

Who ruled Palermo in the 4th century?

**Question 6**

Whose North African provinces were occupied in the 4th century?

**Question 7**

Which tribe took the provinces from the vandals in the 4th century?

**Question 8**

What was the name of the war between Ostrobothnia and the Western Roman Empire?

**Text number 9**

The Muslims took control of the island in 904 after decades of fierce fighting, and the Emirate of Sicily was established. Muslim rule on the island lasted for about 120 years, and was marked by cruelty and brutality towards the indigenous population, who were reduced to near slavery[clarification needed], and Christian churches across the island were all completely destroyed.[page needed] Palermo (Balarm during Arab rule) supplanted Syracuse as the capital of Sicily. It was then said to have begun to compete with Cordoba and Cairo for importance and glory. Palermo was the capital of the flourishing emirate for over a hundred years. The Arabs also introduced many of the crops that are still the mainstays of Sicilian cuisine.

**Question 0**

How long did Muslim rule in Palermo last?

**Question 1**

What did the Arabs bring with them that is still relevant to Palermo's culture?

**Question 2**

How were the indigenous people of Palermo treated under the Muslim regime?

**Question 3**

Who took over the island in the 9th century?

**Question 4**

Which emeriti was founded by Muslims in the 9th century?

**Question 5**

Which city replaced Palermo as capital during the Arab domination?

**Question 6**

With which cities did Syracuse compete for importance and glory?

**Question 7**

What did the Sicilians show the Arabs?

**Text number 10**

However, after dynastic disputes, a Christian reconquest took place in 1072. The family that converted the city to Christianity were called the Hautevilles, including Robert Guiscard and his army, who were considered heroes by the natives. Under Roger II of Sicily, the Norman possessions in Sicily and the southern part of the Italian peninsula were elevated from the County of Sicily to the Kingdom of Sicily. The capital of the kingdom was Palermo, and the royal court was held in the Palazzo dei Normanni. Much was built during this period, including Palermo Cathedral. The Kingdom of Sicily became one of the richest states in Europe.

**Question 0**

Who do the natives consider a hero for ending Muslim rule in Palermo?

**Question 1**

What was the surname that returned Palermo to Christianity after the recapture in 1072?

**Question 2**

Where was the Court of Kings held in the Kingdom of Sicily?

**Question 3**

How did the Kingdom of Sicily compare financially with other European countries?

**Question 4**

Which conquest took place in the 10th century?

**Question 5**

Which Arab family fought in the take-back?

**Question 6**

During whose reign was the Kingdom of Sicily made a county of Sicily?

**Question 7**

Which cathedral was built before the conquest?

**Text number 11**

Sicily came under the control of the Holy Roman Empire in 1194. Palermo was the favourite city of Emperor Frederick II. Palermo's Muslims emigrated or were expelled during the Holy Roman Empire. After the reign of Angevin (1266-1282), Sicily came under the control of the Aragonese and Barcelona dynasties. By 1330, Palermo's population had fallen to 51 000. From 1479 to 1713 Palermo was ruled by the Kingdom of Spain, and again from 1717 to 1718. Palermo was also ruled by the Savoy from 1713 to 1717 and from 1718 to 1720 as a result of the Treaty of Utrecht. It was also under Austrian rule from 1720 to 1734.

**Question 0**

In what year did Sicily come under the control of the Holy Roman Empire?

**Question 1**

What happened to Muslims during the Holy Roman Empire?

**Question 2**

What was the population of Palermo in 1330?

**Question 3**

In which years did Austria rule Palermo?

**Question 4**

Who ruled Sicily in the 1100s?

**Question 5**

Who moved to Palermo during the Holy Roman Empire?

**Question 6**

Who ruled Palermo in the 13th century?

**Question 7**

What happened to the population of Palermo in the 13th century?

**Question 8**

By what treaty was Palermo placed under Austrian rule in the 17th century?

**Text number 12**

After the Treaty of Utrecht (1713), Sicily was ceded to Savoy, but by 1734 it was back in Bourbon hands. Charles III chose Palermo as King of Sicily for his coronation. Charles built new houses for the growing population, and trade and industry also increased. However, Palermo was now just another provincial city, as the royal court lived in Naples. Charles' son Ferdinand, who was disliked by the population, fled to Palermo after the French Revolution in 1798. His son Alberto died on his way to Palermo and is buried in the city. When the Kingdom of the Two Sicilies was created, the capital was originally Palermo (1816), but a year later it was transferred to Naples.

**Question 0**

After which agreement did Savoy gain control of Italy?

**Question 1**

For what event did Charles III choose Sicily?

**Question 2**

Where did the royal court live?

**Question 3**

Where did the capital move to in 1817?

**Question 4**

Whose son died on the way to Palermo and is buried there?

**Question 5**

For which agreement did the Savoy lose Sicily?

**Question 6**

Where was Charles II crowned King of Sicily?

**Question 7**

Which court lived in Palermo?

**Question 8**

Who fled to Palermo in the 17th century?

**Question 9**

After Naples, what became the capital of the two Sicilies?

**Text number 13**

From 1820 to 1848, Sicily was shaken by unrest, culminating in the uprising led by Giuseppe La Masa on 12 January 1848, the first in Europe that year. A parliament and a constitution were proclaimed. The first president was Ruggero Settimo. The Bourbons retook Palermo in 1849, and it remained under their rule until the time of Giuseppe Garibaldi. The famous general invaded Palermo with his troops ('The Thousand') on 27 May 1860. After a referendum later that year, Palermo became part of the new Kingdom of Italy (1861), along with the rest of Sicily.

**Question 0**

Who led Europe's first uprising in 1848?

**Question 1**

Who was Palermo's first president?

**Question 2**

Who regained control of Palermo in 1849?

**Question 3**

To which kingdom did Sicily and Palermo belong in 1861?

**Question 4**

Who led the rebellion in the 1700s?

**Question 5**

Who was Palermo's first president?

**Question 6**

Who reconquered Palermo in the 1700s?

**Question 7**

Which general led the Bourbons?

**Text number 14**

The majority of Sicilians preferred independence to the Savoy kingdom, and in 1866 Palermo became the centre of a week-long uprising, which was finally crushed after martial law was declared. The Italian government blamed the rebellion on anarchists and the Church, in particular the Archbishop of Palermo, and embarked on an anti-Sicilian and anti-Church policy. The new cultural, economic and industrial growth was fuelled by several families such as Florio, Ducrot, Rutelli, Sandron, Whitaker, Utveggio and others. In the early 20th century, Palermo expanded beyond the old city walls, mainly northwards along the new boulevards of Via Roma, Via Dante, Via Notarbartolo and Viale della Libertà. These roads were soon home to a huge number of Art Nouveau villas. Many of them were designed by the famous architect Ernesto Basile. The Grand Hotel Villa Igiea, designed by Ernesto Basile for the Florio family, is a good example of Palermita's Art Nouveau style. Around the same time, Giovan Battista Filippo Basile designed the huge Teatro Massimo, built by the Rutelli & Machì firm of Palermo's industrial and old Italian Rutelli family, which opened in 1897.

**Question 0**

Who was blamed for the week-long rebellion of 1866?

**Question 1**

Which families have helped launch the growth of culture, industry and the economy in Palermo?

**Question 2**

What was the style of the villas in the new enlarged Palermo?

**Question 3**

Which theatre was designed by Giovan Battista Filippo Basile and opened in 1897?

**Question 4**

Who preferred Savoia to independence?

**Question 5**

What was the seat of the 17th century rebellion?

**Question 6**

What crushed the 17th century rebellion in Palermo?

**Question 7**

Which government has implemented a pro-Sicilian policy?

**Question 8**

Where did Palermo expand in the early 2000s?

**Text number 15**

The so-called "Palermo bagging" is one of the biggest visible faces of the problem. The term refers to the speculative construction that has flooded the city with bad buildings. The declining importance of agriculture in the Sicilian economy has led to massive migration to the cities, especially Palermo, which swelled and expanded rapidly northwards. Regulatory plans for expansion were largely ignored during the boom. New districts were created almost from scratch, but without parks, schools, public buildings, decent roads and other amenities of a modern city.

**Question 0**

What does the term "Palermo sack" refer to?

**Question 1**

Why did Palermo grow significantly in size?

**Question 2**

What was missing from the Palermo extension?

**Question 3**

What is the term for the building boom that erected many fine buildings?

**Question 4**

What has led to migration out of the cities?

**Question 5**

What made Palermo expand southwards?

**Question 6**

What was carefully monitored during the boom?

**Text number 16**

Palermo has a hot Mediterranean climate (Köppen climate classification: Csa). Winters are cool and humid, while summers are hot and dry. Autumn and spring temperatures are generally mild. Palermo is one of the warmest cities in Europe (mainly because of the warm nights), with an average annual air temperature of 18.5°C. Palermo is also one of the warmest cities in Europe. It enjoys around 2530 hours of sunshine per year. Snowfall is generally rare, but occasionally occurs during a cold front, as the Apennines are too far away to protect the island from the cold winds blowing from the Balkans, and the mountains surrounding the city make it easier for snow to accumulate in Palermo, especially at night. Palermo has experienced eleven major snowfalls between the 1940s and the 2000s: in 1949, in 1956, when the minimum temperature fell to 0°C and the city was covered in several centimetres of snow. Snow also fell in 1999, 2009 and 2015. The average annual sea temperature is above 19°C, from 14°C in February to 26°C in August. From May to November the average sea temperature is above 18°C and from June to October the average sea temperature is above 21°C.

**Question 0**

What is Palermo's climate rating?

**Question 1**

How do temperatures in Palermo compare with the rest of Europe?

**Question 2**

How much snow fell in Palermo in the 1940s and 2000s?

**Question 3**

How much sun does Palermo see per year?

**Question 4**

Which city has a Mediterranean climate and very cold winters?

**Question 5**

What is one of the warmest cities in the world?

**Question 6**

What weather never occurs in Palermo?

**Question 7**

What is too far away to protect the island from the heat?

**Text number 17**

Palermo has at least two city wall districts, many of which are still standing. The first district surrounds the ancient core of the Red City - the so-called Palaeopolis (east of Porta Nuova) and Neopolis. Via Vittorio Emanuele was the east-west main street of this early walled city. The eastern edge of the walled city ran along the Via Roma and the ancient port near Piazza Marina. The route of the wall was roughly Porto Nuovo, Corso Alberti, Piazza Peranni, Via Isodoro, Via Candela, Via Venezia, Via Roma, Piazza Paninni, Via Biscottari, Via Del Bastione, Palazzo dei Normanni and back to Porto Nuovo.

**Question 0**

Where does the first round of Palermo go around?

**Question 1**

What was the name of the main east-west road inside the Paleopolis walls?

**Question 2**

Which road led to the eastern edge of the walled city?

**Question 3**

What surrounds Palermo in one tour?

**Question 4**

Which road led to the western edge of the walled city?

**Question 5**

What was the name of the east-west road inside the walls of Palaipolis?

**Text number 18**

In the Middle Ages, the walled enclosure was extended. The Via Vittorio Emanuele was still the main east-west route through the walled city. The western gate was still Porta Nuova, the circuit continued to Corso Albert, Piazza Vittorio Emanuele Orlando, from where it turned east along Via Volturno to Piazza Verdi and along the line of Via Cavour. At this northeast corner was a defensive fort, the Castello a Mare, which protected the port of La Cala. La Cala was closed by a huge chain, one end of which was at S Maria della Catena (St Mary of the Chain). The sea wall was on the west side of the Foro Italico Umberto. The wall turns west along the north side of Via Abramo Lincoln and continues along Corso Tukory. The wall turns north roughly along Via Benedetto to Palazzo dei Normanni and back to Porta Nuova. Source: Palermo - a city guide by Adriana Chirco, 1998, Dario Flaccovio Editore.

**Question 0**

What was the purpose of Castello a Mare?

**Question 1**

What was used to block the passage from the port of La Cala?

**Question 2**

During which historical period was the wall circle extended?

**Question 3**

What was reduced in the Middle Ages?

**Question 4**

What was no longer the main east-west road?

**Question 5**

What used to block the west gate?

**Question 6**

Which wall faces east on the west side?

**Text number 19**

The cathedral has a heliometer (solar observatory) built in 1690, one of many built in Italy in the 1600s and 1700s. The device itself is quite simple: one of the smaller domes has a small hole that acts as a pinhole camera, projecting an image of the sun onto the floor at noon (12:00 in winter, 13:00 in summer). On the floor is a bronze line, la Meridiana, running exactly north-south. The ends of the line mark the summer and winter solstices; the zodiacal markers indicate other dates throughout the year.

**Question 0**

What is a heliometer?

**Question 1**

What name is given to the bronze line on the floor of the heliometer?

**Question 2**

Which direction does la Meridiana run?

**Question 3**

Which image is projected onto the floor of the heliometer?

**Question 4**

What is the lunar observatory built in 1690?

**Question 5**

was built in the 1500s?

**Question 6**

What is the name of the golden line on the floor of the helicopter?

**Question 7**

Which image is projected onto the dome of the heliometer?

**Question 8**

Which signs are a tribute to the ways of the pagea?

**Text number 20**

In 2010, the Palermo Metropolitan Area was home to 1.2 million people, of whom 655 875 lived in the city. Of these, 47.4% were men and 52.6% women. The proportion of people under 15 years of age was 15.6%, while pensioners accounted for 17.2% of the population. The Italian average is 14.1% for under-15s and 20.2% for pensioners. The average age of Palermo residents is 40.4 years, compared to the Italian average of 42.8 years. Over the ten-year period 2001-2010, Palermo's population decreased by 4.5%, while the population of Italy as a whole increased by 6.0%. The reason for Palermo's population decline is the flight of the population to the suburbs and northern Italy. Palermo's current birth rate is 10.2 births per 1000 inhabitants, compared to the Italian average of 9.3 births.

**Question 0**

How many people lived in the Palermo region in 2010?

**Question 1**

What percentage of Palermo residents were women in 2010?

**Question 2**

What is the average age of Palermo residents?

**Question 3**

Why has Palermo's population fallen between 2001 and 2010?

**Question 4**

In what year was there 1.2 million dwellings in the Palermo region?

**Question 5**

What is 47.4% of women?

**Question 6**

Whose average age is 42.8 in Palermo?

**Question 7**

What has increased in Palermo between 2001 and 2010?

**Question 8**

Who has a slightly higher birth rate than Palermo?

**Text number 21**

Palermo is the administrative capital of Sicily and is the economic, tourist and commercial centre of the region. The city currently has an international airport and Palermo's economic growth over the years has brought many new businesses. The economy is mainly based on tourism and services, but also on trade, shipbuilding and agriculture. However, the city still has a high unemployment rate, high levels of corruption and a significant black market empire (Palermo is home to the Sicilian Mafia). Although the city still suffers from widespread corruption, inefficient bureaucracy and organised crime, Palermo's crime rate has fallen dramatically, unemployment has decreased and many new, profitable growth opportunities (especially in tourism) have been introduced, making the city safer and better to live in.

**Question 0**

What is Palermo's economy based on?

**Question 1**

Which mafia's home town is Palermo?

**Question 2**

Has crime in Palermo increased or decreased?

**Question 3**

What are the negative characteristics of Palermo?

**Question 4**

What is the administrative capital of Italy?

**Question 5**

Which depends mainly on shipbuilding and agriculture?

**Question 6**

Why has the black market in Palermo declined?

**Question 7**

Why has crime increased in Palermo?

**Question 8**

What has made the city more dangerous to live in?

**Text number 22**

The port of Palermo, founded by the Phoenicians more than 2,700 years ago, is the most important port in Sicily, along with the port of Messina. Ferries from there connect Palermo to Cagliari, Genoa, Livorno, Naples, Tunis and other cities, carrying almost 2 million passengers a year. It is also an important port for cruise ships. It also handles almost 5 million tonnes of freight and 80 000 TEUs per year. The port is also linked to smaller Sicilian islands such as Ustica and the Eolian Islands (via Cefalù in summer). The port of Palermo has an area for sailing boats and catamarans, known as the tourist port.

**Question 0**

Which port is the most important port in Sicily?

**Question 1**

How many passengers travel on the Palermo ferry each year?

**Question 2**

How many passengers are carried by Palermo ferries each year?

**Question 3**

What is a "tourist port" for?

**Question 4**

To which cities do the Palermo ferries run?

**Question 5**

Which is the most important port in Italy?

**Question 6**

What are the roads connecting cities?

**Question 7**

Where does the traffic include 80 tonnes of cargo?

**Question 8**

What part of the port is for the mafia?

**Text number 23**

Palermo's patron saint is Santa Rosalia, who is widely revered. On 14 July, the people of Palermo celebrate the annual Festino, the most important religious event of the year. The Festino is a procession that runs through Palermo's main street in honour of the miracle attributed to Santa Rosalia, who is believed to have liberated the city from the Black Death in 1624. Her remains were found in the cave of Monte Pellegrino, and her remains were carried three times around the city and banished the plague. The site where his remains were found has a shrine, accessible by bus from the town.

**Question 0**

Who is Palermo's popular patron saint?

**Question 1**

When is Palermo's most important religious event of the year?

**Question 2**

Who is said to have put an end to the Black Death in 1624?

**Question 3**

What is Festino?

**Question 4**

Who is the patron saint of Italy?

**Question 5**

Who stopped the black death in the 1500s?

**Question 6**

When is Palermo's most important secular festival?

**Question 7**

Who drove the plague out of the city before dying himself?

**Document number 320**

**Text number 0**

The modern word green comes from the Middle English and Anglo-Saxon word grene, which is derived from the same Germanic root as the words "grass" and "grow". It is the colour of living grass and leaves and is therefore most associated with spring, growth and nature. In nature, the overwhelming factor behind the colour green is chlorophyll, a chemical that plants use to photosynthesise and convert sunlight into chemical energy. Many organisms have adapted to their green environment by adopting a green hue themselves as a camouflage. Many minerals have a green colour, such as emeralds, which have a green tint due to their chromium content.

**Question 0**

What in nature is likely to make things green?

**Question 1**

What do some animals use the colour green for?

**Question 2**

What chemical causes emeralds to turn green?

**Question 3**

What is the origin of the Central European and Anglo-Saxon word for green?

**Question 4**

What is the Germanic root word for grass?

**Question 5**

What is the chemical used to convert sunlight in emeralds?

**Question 6**

What word came from the English word "green"?

**Question 7**

What do plants convert chlorophyll into?

**Question 8**

What process does chromium enable plants to carry out?

**Text number 1**

In European and US studies, green is the colour most commonly associated with nature, life, health, youth, spring, hope and envy. In Europe and the United States, green is sometimes associated with death (green has many seemingly opposite associations), illness or the devil, but in China its association is very positive, being a symbol of fertility and happiness. In the Middle Ages and the Renaissance, when the colour of clothes indicated the social status of the owner, green was worn by merchants, bankers and nobles, while red was the colour of the nobility. Leonardo da Vinci's Mona Lisa is green, indicating that he is not from a noble family; the benches in the House of Commons in Britain are green, while those in the House of Lords are red. Green is also the traditional colour of safety and permission; a green light means you can go ahead, and a green card allows permanent residence in the US. It is the most important colour in Islam. It was the colour of Muhammad's flag, appears on the flags of almost all Islamic countries, and represents the lush vegetation of paradise. It is also often associated with Gaelic Irish culture and is the colour of the Irish flag. Because it is associated with nature, it is the colour of the environmental movement. Political groups campaigning for environmental protection and social justice describe themselves as part of the green movement, and some call themselves green parties. This has led to similar campaigns in advertising, with companies selling green or environmentally friendly products.

**Question 0**

What does the colour green symbolise in China?

**Question 1**

Which colour was associated with merchants, bankers and nobles in the Middle Ages?

**Question 2**

What does the Mona Lisa in green symbolise?

**Question 3**

What does the colour green represent in the flags of Islamic countries?

**Question 4**

Why is green the colour of the environmental movement?

**Question 5**

What religion is the colour red associated with?

**Question 6**

What colour clothes did the Chinese nobility wear?

**Question 7**

Which colour indicates that the Mona Lisa is a noblewoman?

**Question 8**

What does the red light mean?

**Question 9**

What contradictory meaning does China give to green, in addition to happiness?

**Text number 2**

Thus, in the languages mentioned above (Germanic, Romance, Slavic and Greek), there are old terms for "green", derived from words describing fresh, sprouting vegetation. However, comparative linguistics clearly shows that these terms have emerged independently over the last millennia, and there is no single proto-Indo-European word or word for 'green'. For example, Slavic zelenъ is similar to Sanskrit hari "yellow, ochre, golden". Turkish also has jašɨl 'green' or 'yellowish green', which is compared to Mongolian 'meadow'.

**Question 0**

In Germanic, Romance, Slavic and Greek languages, there are old terms for "green", derived from words meaning what?

**Question 1**

How do the terms "green" come from Germanic, Romance, Slavic and Greek languages?

**Question 2**

In which language is the word "green" comparable to the Mongolian word "meadow"?

**Question 3**

What is the Mongolian word for meadow?

**Question 4**

Which languages have a single root word for green?

**Question 5**

"Hari" is furry for what?

**Question 6**

What is the Germanic word for green?

**Question 7**

What is the Sanskrit word for green?

**Text number 3**

In some languages, such as Old Chinese, Thai, Old Japanese and Vietnamese, the same word can mean either blue or green. The Chinese character 青 (pronounced qīng in Mandarin Chinese, ao in Japanese and thanh in Sino-Vietnamese) has an umbrella meaning of both blue and green; blue and green are traditionally regarded as shades of "青". In modern language, they are 藍 (lán, Mandarin) and 綠 (lǜ, Mandarin) respectively. There are also two terms in Japanese that refer specifically to the colour green: 緑 (midori, derived from the classical Japanese descriptive verb midoru "to be in leaf, to blossom", referring to trees) and グリーン (guriin, derived from the English word "green"). Although traffic lights in Japan have the same colours as in other countries, green light is still described with the same word as blue, "aoi", because green is considered a shade of aoi; similarly, green varieties of certain fruits and vegetables, such as green apples and green shiso (as opposed to red apples and red shiso) are described with the word "aoi". In Vietnamese, one word is used for both blue and green, xanh, and there are variations of it, such as xanh da trời (azure, literally 'sky blue'), lam (blue) and lục (green; also xanh lá cây, literally 'leaf green').

**Question 0**

How many terms are there for the colour green in Japanese?

**Question 1**

What is the Vietnamese word for both blue and green?

**Question 2**

What colour are traffic lights in Japan?

**Question 3**

How do you pronounce 藍 in Japanese?

**Question 4**

How to pronounce 綠 in Chinese-Vietnamese?

**Question 5**

Which Chinese word for green is derived from English?

**Question 6**

How many words are there for green in Thai?

**Question 7**

What does Ian mean when he refers to trees?

**Text number 4**

In modern European languages, "green" corresponds to about 520-570 nm, but many historical and non-European languages make other choices, e.g. using a term in the range of about 450-530 nm ("blue/green") and another term in the range of about 450-530 nm ("blue/green"). 530-590 nm ("green/yellow").[In a comparative study of colour terms in world languages, green appears as a separate category only in languages with a fully developed six-colour palette (white, black, red, green, yellow and blue), or less frequently in systems with five colours (white, red, yellow, green and black/blue). (See the distinction between green and blue) These languages have adopted additional vocabulary to denote 'green', but these terms are recognisable as recent appropriations that are not colour terms in origin (much like the English adjective orange, which is not a colour term in origin but the name of a fruit). Thus, the Thai word เขียว means not only 'green' but also 'bad' and 'smelly', and has other unpleasant associations.

**Question 0**

In which language does the word "green" also mean "sprawling" and "smelly"?

**Question 1**

Which area does the colour green belong to in modern European languages?

**Question 2**

Where does the word "orange" come from?

**Question 3**

What is the Thai word for green equivalent to nm?

**Question 4**

How many colours are there in the Thai colour system?

**Question 5**

In how many languages is green a separate colour?

**Question 6**

The English word green was originally not a colour term but a what?

**Question 7**

What is the colour range of yellow in European languages?

**Text number 5**

In the subtractive colour system, used in painting and colour printing, green is created by combining yellow and blue or yellow and cyan; in the RGB colour model, used in television and computer monitors, it is one of the main additive colours, along with red and blue, which are mixed in various combinations to create all the other colours. In the HSV colour wheel, also known as the RGB colour wheel, the complement of green is magenta, a colour that corresponds to an equal mixture of red and blue light (one of the violets). In the traditional colour wheel, which is based on subtractive colour, the complementary colour of green is red.

**Question 0**

In which colour system is green created by combining yellow and blue?

**Question 1**

In which colour scheme is green one of the main additive colours?

**Question 2**

What is the complement of green in the HSV colour wheel?

**Question 3**

What is the complement of the colour green in the traditional colour wheel?

**Question 4**

In colour printing, blue is created by combining green and what?

**Question 5**

What colour scheme is used in a subtractive system?

**Question 6**

What is another name for a colour wheel that uses a subtractive system?

**Question 7**

And what do you get when you mix green and magenta in equal amounts?

**Question 8**

What is the complementary colour to blue?

**Text number 6**

In additive colour devices such as computer monitors and televisions, one of the primary light sources is typically a narrow yellowish-green with a wavelength of ~550 nm; this "green" primary light source is combined with an orange-red "red" primary light source and a violet-blue "blue" primary light source to produce any colour in between - the RGB colour model. A unique green (a green that looks neither yellowish nor bluish) is produced by such a device by mixing light from the primary green colour with light from the primary blue colour.

**Question 0**

What happens on a computer screen when light from a green main substance is mixed with light from a blue main substance?

**Question 1**

At what wavelength does the colour green appear on computer screens?

**Question 2**

What kind of colour devices are computer monitors and televisions?

**Question 3**

What is the wavelength of the colour red?

**Question 4**

How is unique blue made?

**Question 5**

What are some examples of devices that do not use additive systems?

**Question 6**

What is the wavelength of the unique green?

**Question 7**

~550 nm green is a combination of the two main colours?

**Text number 7**

Green spectrum lasers are widely available to the general public in a wide range of output powers. Green laser pointers with a power of 532 nm (563.5 THz) are relatively inexpensive compared to other wavelengths of the same power and are very popular due to their good beam quality and very high apparent brightness. The most common green lasers use diode pump source technology (DPSS) to produce green light. An infrared 808 nm laser diode is used to pump neodymium-doped yttrium vanadium oxide crystal (Nd:YVO4) or neodymium-doped yttrium aluminium garnet (Nd:YAG) and cause it to emit radiation at 281,76 THz (1064 nm). This deeper infrared light is then passed through another crystal containing potassium, titanium and phosphorus (KTP), whose non-linear properties produce light at a frequency twice that of the incoming beam (563,5 THz), in this case corresponding to a wavelength of 532 nm ('green'). Other green wavelengths are also available using DPSS technology between 501 nm and 543 nm. Green wavelengths are also available from gas lasers such as helium neon laser (543 nm), argon ion laser (514 nm), krypton ion laser (521 nm and 531 nm) and liquid dye lasers. Green lasers have a wide range of applications, including pointing, illumination, surgery, laser light projection, spectroscopy, interferometry, fluorescence, holography, machine vision, non-lethal weapons and bird control.

**Question 0**

What colour lasers are widely available to the general public?

**Question 1**

What is the wavelength of low-cost green lasers?

**Question 2**

What kind of technology is used in the most common green lasers?

**Question 3**

What is the range of available green wavelengths when using DPSS technology?

**Question 4**

What is the range of an argon ion laser?

**Question 5**

What is the nm of liquid dye lasers?

**Question 6**

What colour laser is the most difficult for the public to access?

**Question 7**

What is the THz of a helium-neon laser?

**Question 8**

What have linear properties?

**Text number 8**

Many minerals yield pigments that have been used for centuries in green paints and dyes. Pigments in this case are minerals that reflect the green colour rather than emit it through luminescent or phosphorescent properties. The large number of green pigments makes it impossible to mention them all. However, the most important green minerals include emerald, which is dyed green by small amounts of chromium and sometimes vanadium. Chromium (III) oxide (Cr2O3) is called chromium green, which, when used as a pigment, is also called viridian or institutional green. The source of the colour of amazonite was a mystery for many years. It was generally thought to be due to copper, since copper compounds are often blue-green, but the blue-green colour is probably due to the small amounts of lead and water in the feldspar. The source of the green colour of malachite pigments is copper, known chemically as basic copper (II) carbonate.

**Question 0**

What do pigments do to the colour green?

**Question 1**

Where are green paints and dyes usually made?

**Question 2**

What is the main chemical that causes emeralds to turn green?

**Question 3**

What causes the green colour of malachite pigments?

**Question 4**

What causes the colour of amatsonite?

**Question 5**

What is the name of the minerals with green luminescence?

**Question 6**

What is another name for amazonite?

**Question 7**

What is the symbol for copper?

**Question 8**

What is chromium oxide in small amounts?

**Question 9**

What is the name of the amazonite-based pigments?

**Text number 9**

Verdigris is made by placing a copper, brass or bronze plate or blade, slightly heated, in a fermenting vat, leaving it there for several weeks, then scraping and drying off the green powder that has formed on the metal. Pliny described the process of making verdigris in ancient times. It was used by the Romans in wall paintings in Pompeii and by the Celts in medieval manuscripts as early as the 5th century AD. It produced a blue-green colour that no other pigment could imitate, but it also had drawbacks: it was unstable, it was not resistant to moisture, it did not mix well with other colours, it could spoil other colours with which it came into contact, and it was toxic. In his treatise on painting, Leonardo da Vinci warned artists against using it. It was widely used in miniature paintings in Europe and Persia in the 1500s and 1600s. Its use largely ceased in the late 19th century, when it was replaced by the safer and more stable chrome green. Viridian, also called chrome green, is a pigment made from chromium oxide dihydrate, which was patented in 1859. It became popular with painters because, unlike other synthetic greens, it was stable and non-toxic. Vincent van Gogh used it in combination with Prussian blue to create a dark blue sky with a greenish tint in his painting Cafe terrace at night.

**Question 0**

What is made by placing a steel plate made of copper, brass or bronze in fermenting wine for several weeks, then scraping off the green powder and drying?

**Question 1**

Who described the process of making verdigris in ancient times?

**Question 2**

In which city did the Romans use verdigris in their murals?

**Question 3**

What would verdigris do to other colours with which it would come into contact?

**Question 4**

Which famous artist warned other artists against using verdigris?

**Question 5**

In which century did Pliny describe the Verdigris production process?

**Question 6**

In which city did Pliny live?

**Question 7**

What paint did Leonardo da Vinci recommend?

**Question 8**

Where was chrome green popular in the 1500s?

**Question 9**

When was Prussian blue patented?

**Text number 10**

There is no natural source of green food colours approved by the US Food and Drug Administration. Chlorophyll, E140 and E141, is the most common naturally occurring green chemical and is only allowed in certain pharmaceuticals and cosmetics. Quinoline yellow (E104) is a commonly used dye in the UK, but is banned in Australia, Japan, Norway and the USA. Green S (E142) is banned in many countries because it is known to cause hyperactivity, asthma, urticaria and insomnia.

**Question 0**

Which green food colour is known to cause hyperactivity, asthma, urticaria and insomnia?

**Question 1**

What is a food colour commonly used in the UK that is banned in Australia, Japan, Norway and the USA?

**Question 2**

What is the most common green chemical found in nature?

**Question 3**

Which two E-numbers have been approved by the FDA?

**Question 4**

The green S is used in which country but not in the USA?

**Question 5**

What are the side effects of Kinoline Yellow?

**Question 6**

What is the name of the green chemical allowed in the UK?

**Question 7**

Which authority approved the use of E140 as a food colouring agent?

**Text number 11**

To create green sparks, fireworks use barium salts such as barium chlorate, barium nitrate crystals or barium chloride, which is also used for green fireworks. Copper salts typically burn blue, but copper chloride (also known as "campfire blue") can also produce green flames. For green pyrotechnic torches, a 75:25 mix of boron and potassium nitrate can be used. Smoke can be turned green with a mixture of solvent yellow 33, solvent green 3, lactose, magnesium carbonate and sodium carbonate added to potassium chlorate.

**Question 0**

How do fireworks create green sparks?

**Question 1**

Which copper salt can produce a green shine?

**Question 2**

What is the ratio of boron to potassium nitrate in green pyrotechnic flares?

**Question 3**

What is the ratio of yellow to green in green smoke?

**Question 4**

What is the other name for copper salts?

**Question 5**

What kind of copper salts are used in fireworks?

**Question 6**

What else are copper salts used for?

**Question 7**

Which two solvents are used in green pyrotechnic flares?

**Text number 12**

Green is common in nature, as many plants are green because of a complex chemical called chlorophyll, which is involved in photosynthesis. Chlorophyll absorbs long wavelengths of light (red) and short wavelengths (blue) much more efficiently than the wavelengths that appear green to the human eye, so the light reflected by plants is rich in green. Chlorophyll absorbs green light poorly because it first emerged in ocean organisms, where purple halobacteria already exploited photosynthesis. Their purple colour came about because they derived energy from the green part of the spectrum through bacteriorhodopsin. The new organisms that later became dominant in light-harvesting were selected to exploit the parts of the spectrum not used by halobacteria.

**Question 0**

Why are many plants green?

**Question 1**

What does chlorophyll do with long (red) and short (blue) wavelengths of light?

**Question 2**

Where was chlorophyll first born?

**Question 3**

What is the chemical in the human eye that makes plants green?

**Question 4**

What does chlorophyll reflect at long wavelengths?

**Question 5**

What is the wavelength of violet?

**Question 6**

Why does chlorophyll absorb green light so effectively?

**Question 7**

What takes energy from the violet part of the spectrum?

**Text number 13**

Animals typically use green as a camouflage colour that blends in with the green colour of chlorophyll in the surrounding environment. Green animals include amphibians, reptiles and some fish, birds and insects. Most fish, reptiles, amphibians and birds look green because blue light is reflected through the yellow pigment layer. The environment can also affect colour perception. For example, deciduous forests typically have yellow-green light because trees filter light. Peat covertine is one chemical that can cause a green hue, especially in birds. Invertebrates such as insects or molluscs often have green colours due to porphyrin pigments, sometimes due to diet. This can also cause their faeces to look green. Other chemicals that usually contribute to the green colour of organisms are flavins (lyochromes) and hemanovadin. People have imitated this by wearing green clothing as camouflage in the military and other fields. Substances that can give the skin a greenish tint include biliverdin, the green pigment in bile, and ceruloplasmin, a protein that transports copper ions in chelation.

**Question 0**

How do animals typically use the colour green?

**Question 1**

Why are most fish, reptiles, amphibians and birds green?

**Question 2**

What is the chemical that can cause birds to turn green?

**Question 3**

What is the protein that transports copper ions in chelation?

**Question 4**

What is the green pigment in bile?

**Question 5**

Why are most fish blue?

**Question 6**

What is the name of the chemical in reptiles that makes them look green?

**Question 7**

What pigment do birds eat that makes them look green?

**Question 8**

What chemicals have people used for camouflage?

**Question 9**

What is another name for hemanovadine?

**Text number 14**

Green eyes have no green pigment; like blue eyes, it is an optical illusion; its appearance is due to a combination of amber or light brown pigmentation of the stroma, due to low or moderate melanin levels, combined with a blue tint due to Rayleigh scattering of reflected light. Green eyes are most common in northern and central Europe. They are also found in southern Europe, western Asia, central Asia and southern Asia. In Iceland, 89% of women and 87% of men have either blue or green eyes. A study of Icelandic and Dutch adults found that green eyes are much more common in women than in men. Among European Americans, green eyes are most common among those of recent Celtic and Germanic ancestry, at around 16%.

**Question 0**

What causes the green colour of the eyes?

**Question 1**

Where are green eyes most common?

**Question 2**

Which sex of Icelandic and Dutch adults has green eyes more often?

**Question 3**

Where is the green pigment in the eyes located?

**Question 4**

Blue and green eyes due to high concentration of what?

**Question 5**

How many women in South Asia have blue or green eyes?

**Question 6**

Which two ancestries have the least green eyes?

**Question 7**

What is the name given to the scattering of light that causes the colour green?

**Text number 15**

In ancient Egypt, the colour green symbolised renewal and rebirth, and the crops made possible by the annual flooding of the Nile. To paint on tomb walls or papyrus, Egyptian artists used finely ground malachite mined from western Sinai and the eastern desert - a painting box containing malachite was found in King Tutankhamun's tomb. They also used cheaper green feldspar or mixed yellow ochre and blue azurite. To dye the cloth green, they first dyed it yellow with a dye made from saffron and then soaked it in a blue dye made from the roots of the woad plant.

**Question 0**

What colour was a symbol of renewal and rebirth in ancient Egypt?

**Question 1**

What did Egyptian artists use to grind when painting on tomb walls or papyrus?

**Question 2**

How did the Egyptians dye their fabrics yellow?

**Question 3**

Where was the Nile located in Egypt?

**Question 4**

Where was blue azurite found?

**Question 5**

Which plant's roots were used to make green dye?

**Question 6**

Whose grave was it that had dye made from saffron in a box?

**Question 7**

What did blue symbolise in ancient Egypt?

**Text number 16**

For the ancient Egyptians, green had very positive connotations. The hieroglyphic for green depicted a growing papyrus shoot, showing the close connection between green, vegetation, vitality and growth. In wall paintings, Osiris, the ruler of the underworld, was usually depicted with a green face, as green was a symbol of good health and rebirth. In tombs, palettes of green floral ornaments made of malachite were found. It was used on both the living and the dead, especially around the eyes, to protect them from evil. Small green scarab beetle-shaped amulets made of malachite were also often found in graves to protect and give strength to the deceased. It also symbolised the sea, which was called 'very green'.

**Question 0**

What is the ancient Egyptian hieroglyph for green?

**Question 1**

Who was the ruler of the underworld in ancient Egypt?

**Question 2**

Why did the ancient Egyptians use green plant make-up?

**Question 3**

What was the name of the underworld?

**Question 4**

Who ruled the ancient Egyptians?

**Question 5**

What kept the scarab beetles alive?

**Question 6**

Where were scarab beetles used to protect the Egyptians from evil?

**Text number 17**

In ancient Greece, green and blue were sometimes considered the same colour, and the same word sometimes described the colour of the sea and trees. The philosopher Democritus described two different kinds of green: chloron, or light green, and prasinon, or lemon green. Aristotle saw green as a symbol of land, between black and white, and water, between white and black. However, green was not counted among the four classical colours of Greek painting; red, yellow, black and white, and is rarely found in Greek art.

**Question 0**

Which ancient Greek philosopher thought that green was halfway between black and white?

**Question 1**

Which ancient Greek philosopher described light green as chloron and Greek green as prasinon?

**Question 2**

Red, yellow and black are three of the four classic colours of Greek painting. What is the fourth colour?

**Question 3**

How many blue ones did Democritus describe?

**Question 4**

Which way did Demokritos say the green was?

**Question 5**

Which two greens was Aristotle referring to?

**Question 6**

Who was the famous Greek painter?

**Question 7**

Yellow and what colour was considered the same?

**Text number 18**

The Romans preferred the colour green, the colour of Venus, goddess of gardens, vegetables and vineyards.The Romans produced a fine green earth colour that was widely used in the murals of Pompeii, Herculaneum, Lyon, Vaison-la-Romagna and other Roman cities. They also used verdigris pigment, made by soaking copper plates in fermenting wine. In the second century AD, the Romans used green in paintings, mosaics and glass, and there were ten different Latin words for the different varieties of green.

**Question 0**

What colour did the Romans give to Venus, goddess of gardens, vegetables and vineyards?

**Question 1**

What pigment was made by soaking copper plates in fermenting wine?

**Question 2**

How many different words are there for varieties of green in Latin?

**Question 3**

Glass soaked in what to make green?

**Question 4**

When did the Romans start making verdigris pigment?

**Question 5**

In which Roman cities were the gardens of Venus located?

**Question 6**

How many words are there in Latin for painting?

**Question 7**

Where did the Romans stop using green in the 2nd century AD?

**Text number 19**

Unfortunately, for those who wanted or needed to wear green, there were no good plant-based green dyes that could withstand washing and sunlight. Green dyes were made from ferns, plantains, sea buckthorn berries, nettle and leek juice, digitalis, broomcorn, fraxinus leaves and alder bark, but they faded or changed colour quickly. It was not until the 16th century that a good green dye was obtained by dyeing the cloth first blue with wadding and then yellow with reseda luteola, also known as yellow grass.

**Question 0**

Why were green vegetable dyes not ideal?

**Question 1**

When was a good green plant dye finally made?

**Question 2**

What was known as yellow grass?

**Question 3**

Plant dyes were good at resisting what?

**Question 4**

What is another name for a hilla?

**Question 5**

When did people start using fraxinus leaves for green dyes?

**Question 6**

What colour did the clothes that were dyed green often turn?

**Question 7**

Which part of the digitalis plant was used to make the green dye?

**Text number 20**

In the 1700s and 1800s, green was associated with the Romantic movement in literature and art. The French philosopher Jean-Jacques Rousseau celebrated the virtues of nature, and the German poet and philosopher Goethe declared that green was the most restful colour for bedroom interiors. Painters such as John Constable and Jean-Baptiste-Camille Corot depicted the lush green of rural landscapes and forests. Green was a contrast to the smoky greys and blacks of the industrial revolution.

**Question 0**

When did green become associated with the romantic movement in literature and art?

**Question 1**

Who was the French philosopher who celebrated the virtues of nature?

**Question 2**

Which German poet and philosopher declared that green is the most restful colour?

**Question 3**

Where was John Constable from?

**Question 4**

Which philosopher started the industrial revolution?

**Question 5**

What did Goethe call the colour grey?

**Question 6**

Who painted the scenes of the industrial revolution?

**Question 7**

Who decorated the bedrooms?

**Text number 21**

The late 19th century also saw the systematic study of colour theory, particularly how complementary colours such as red and green reinforce each other when placed side by side. Artists such as Vincent van Gogh were keen followers of these studies. Describing his painting Night Cottage to his brother Theo in 1888, van Gogh wrote: "I tried to express in red and green the terrible human passions. The hall is blood-red and pale yellow, with a green billiard table in the centre and four lemon-yellow lamps with orange and green rays. Everywhere it is a battle and contrast of the most diverse reds and greens. "

**Question 0**

When did the systematic study of colour theory begin?

**Question 1**

Who painted the Night Cafe?

**Question 2**

What are the colours red and green?

**Question 3**

Which artist created the theory of colour?

**Question 4**

What did Theo van Gogh paint?

**Question 5**

How many shades of orange were in The Night Cafe?

**Question 6**

Van Gogh said that The Night Cafe is about the contrast between yellow and what colour?

**Question 7**

In what year did colour theory first appear?

**Text number 22**

Green can mean safety, such as at traffic lights. Green and red were standardised as colours for international railway signals in the 19th century. The first traffic lights using green and red gas lamps were installed in 1868 in front of the Houses of Parliament in London. It exploded the following year, injuring the policeman operating it. In 1912, the first modern electric traffic lights were installed in Salt Lake City, Utah. The colour red was chosen largely because of its high visibility and danger, while green was chosen largely because it could not be mistaken for red. Today, green lights generally mean that the system is on and working as it should. In many video games, green signifies both health and goals achieved, unlike red.

**Question 0**

When did green and red start to be used on international railway signals?

**Question 1**

When was the first traffic light installed?

**Question 2**

Where were the first modern electric traffic lights installed in 1912?

**Question 3**

Why was the colour red chosen for traffic lights, apart from being dangerous?

**Question 4**

What exploded in 1912?

**Question 5**

Who was injured at a traffic light in Salt Lake City?

**Question 6**

When was the first modern traffic light installed in London?

**Question 7**

Who standardises the colours green and red?

**Question 8**

What do the red lights mean for the system?

**Text number 23**

As with other common colours, green has a number of completely opposite connotations. Although Europeans and Americans associate it most with good health, it is also the colour most often associated with toxicity and poisons. There was a solid basis for this connotation; in the 19th century, several popular paints and pigments, notably verdigris, vert de Schweinfurt and vert de Paris, were highly toxic because they contained copper or arsenic.[d] The intoxicating drink absinthe was called the 'green fairy'.

**Question 0**

What was absinthe known as?

**Question 1**

Why were the paints and pigments popular in the 19th century highly toxic?

**Question 2**

Which colour is most associated with toxicity and poisons?

**Question 3**

Why do Europeans associate the colour green with health?

**Question 4**

What was the second name of Schweinfurt?

**Question 5**

What poisons did absinthe contain?

**Question 6**

The green fairy was the name of what important pigment?

**Text number 24**

Many flags in the Islamic world are green because the colour is considered sacred in Islam (see below). The flags of Hamas and Iran are green, symbolising their Islamist ideology. Libya's 1977 flag consisted of a simple green field with no other features. It was the only national flag in the world with a single colour, without any patterns, symbols or other details. Some countries used green on their flags to represent the lush vegetation of their country, as in the flag of Jamaica, and hope for the future, as in the flags of Portugal and Nigeria. The green Lebanese cedar tree on the Lebanese flag officially represents stability and tolerance.

**Question 0**

Which country's flag was only green in 1977?

**Question 1**

What does the green colour of the Jamaican flag mean?

**Question 2**

What does the green Lebanese cedar tree on the Lebanese flag represent?

**Question 3**

What colour is considered sacred in Islam?

**Question 4**

When was the Hamas flag created?

**Question 5**

Iran is the only flag in the world with only what?

**Question 6**

How many colours are there on the Iranian flag?

**Question 7**

The flag of Jamaica represents hope using what colour?

**Question 8**

What religion does the Lebanese flag represent?

**Text number 25**

In the 1980s, green became the colour of several new European political parties organised around environmental protection. Green was chosen because it was associated with nature, health and growth. Europe's largest green party is the German Alliance 90/Die Grünen (Bündnis 90/Die Grünen), which was formed in 1993 from the merger of the German Green Party, founded in West Germany in 1980, and Alliance 90, founded during the East German revolution of 1989-1990. In the 2009 Bundestag elections, the party won 10.7% of the vote and 68 of the 622 seats in the Bundestag.

**Question 0**

What is the largest Green Party in Europe?

**Question 1**

Why did many new European political parties in the 1980s choose the colour green?

**Question 2**

When was the German Green Party founded in West Germany?

**Question 3**

Which party merged with the German Green Party in 2009?

**Question 4**

What percentage of the vote did the Greens get in 1993?

**Question 5**

How many seats did Alliance 90 win in 1980?

**Question 6**

When did the West German revolution take place?

**Question 7**

How many members does Alliance 90 have?

**Text number 26**

Roman Catholic and more traditional Protestant priests wear green vestments for liturgical celebrations during Ordinary Time. In the Eastern Catholic Church, green is the colour of Pentecost. Green is also one of the colours of Christmas, possibly dating back to pre-Christian times, when evergreens were worshipped for their ability to retain their colour throughout the winter. The Romans used green evergreens and evergreens as decorations in their winter solstice festival, called the Saturnalia, which eventually evolved into the Christmas festival. In Ireland and Scotland in particular, green is used to represent Catholicism and orange to represent Protestantism. This is reflected in the Irish national flag.

**Question 0**

What colours of vestments are worn by Roman Catholic and traditional Protestant clergy for liturgical celebrations in ordinary time?

**Question 1**

What does the colour green mean in the Eastern Catholic Church?

**Question 2**

What was worshipped for its ability to retain its colour throughout the winter?

**Question 3**

What did the Romans use as decorations for their winter solstice celebration, called Saturnalia?

**Question 4**

What does green mean in Ireland and Scotland?

**Question 5**

When do priests wear orange suits?

**Question 6**

What does the orange colour of the Eastern Catholic Church represent?

**Question 7**

What was the original Roman feast day?

**Question 8**

Green and what colour is the Scottish flag?

**Question 9**

What colour is used to represent the Romans?

**Document number 321**

**Text number 0**

Zinc is a chemical element with the symbol Zn and atomic number 30, the first element of group 12 of the periodic table. Zinc is chemically similar in some respects to magnesium: it has the same ion size and the only common oxidation state of +2. Zinc is the 24th most abundant element in the Earth's crust and has five stable isotopes. The most common form of zinc is the zinc sulphide mineral, sphalerite (zinc bolide). The largest quantities mined are found in Australia, Asia and the United States. Zinc production involves flotation of the ore, roasting and final extraction by electricity (electrolytic extraction).

**Question 0**

What is the symbol for zinc?

**Question 1**

What is the zinc atomic number?

**Question 2**

What is zinc chemically close to?

**Question 3**

What is the oxidation state of zinc?

**Question 4**

How many stable isotopes does zinc have?

**Question 5**

What is the symbol for zinc?

**Question 6**

What is the zinc atomic number?

**Question 7**

What other element in the periodic table is zinc similar to?

**Question 8**

What is the most common single ornament?

**Question 9**

What is used to extract zinc during the production process?

**Question 10**

What is no longer a symbol of zinc?

**Question 11**

What is the automatic zinc number?

**Question 12**

What is zinc chemically identical to?

**Question 13**

What is the only single bumblebee?

**Question 14**

What is used to blast zinc during the production process?

**Text number 1**

Brass, an alloy of copper and zinc, has been used since at least the 10th century BC in Judea and the 7th century BC in ancient Greece. Zinc metal was not produced on a large scale until the 13th century in India and was unknown in Europe until the end of the 16th century. The mines of Rajasthan have provided firm evidence of zinc production dating back to the 6th century BC. To date, the oldest evidence of pure zinc comes from Zawar in Rajasthan as early as the 900s AD, when pure zinc was produced by the distillation process. The alchemists burnt zinc in the air to form what is known as 'the wool of the sages' or 'white snow'.

**Question 0**

What two metals are mixed to make brass?

**Question 1**

When was brass first used?

**Question 2**

Where was zinc first produced on a large scale?

**Question 3**

When was zinc introduced to Europe?

**Question 4**

Where is the oldest evidence of pure zinc?

**Question 5**

Brass is an alloy of what two elements?

**Question 6**

In which ancient place was brass used earliest?

**Question 7**

We have evidence of zinc production as far back as the 6th century, thanks to which mine?

**Question 8**

What was the early method of zinc production?

**Question 9**

What names did early alchemists give to zinc?

**Question 10**

What three metals are mixed to make brass?

**Question 11**

When was the use of brass banned?

**Question 12**

When was zinc banned in Europe?

**Question 13**

Where is the only evidence of pure zinc?

**Question 14**

What was the early method used to dissolve zinc?

**Text number 2**

The alchemist Paracelsus probably named the substance after the German word Zinke (thorn, tooth). German chemist Andreas Sigismund Margraf is credited with discovering pure metallic zinc in 1746. Luigi Galvani and Alessandro Volta discovered the electrochemical properties of zinc by 1800. The main use of zinc is in the corrosion-resistant galvanising of iron (hot-dip galvanising). Other uses include batteries, small non-structural castings and alloys such as brass. Various zinc compounds are commonly used, such as zinc carbonate and zinc gluconate (as food supplements), zinc chloride (in deodorants), zinc pyrithione (in anti-dandruff shampoos), zinc sulphide (in fluorescent paints) and zinc methyl or zinc diethyl in organic laboratories.

**Question 0**

Who named the element zinc?

**Question 1**

What is zinc named after?

**Question 2**

Who is considered to have invented zinc?

**Question 3**

Which two people discovered the electrochemical properties of zinc?

**Question 4**

Where can you find zinc chloride?

**Question 5**

Who gave the name to the zinc?

**Question 6**

What does the name zinc or zinke mean?

**Question 7**

Who discovered pure metallic zinc?

**Question 8**

What is the most common use of zinc?

**Question 9**

What is the general use of zinc chloride?

**Question 10**

Who ruined the element zinc?

**Question 11**

Who is credited with hiding the zinc?

**Question 12**

Which single person discovered the electrochemical properties of zinc?

**Question 13**

Where can you lose zinc chloride?

**Question 14**

What is the rarest use of zinc?

**Text number 3**

Zinc is an essential mineral now considered to be of "exceptional biological and public health importance", particularly for prenatal and postnatal development. Zinc deficiency affects around two billion people in developing countries and is associated with many diseases. In children, it causes stunted growth, delayed maturation, susceptibility to infection and diarrhoea. Enzymes with a zinc atom in the reactive centre are widespread in biochemistry, such as alcohol dehydrogenase in humans. Excessive zinc intake can cause ataxia, lethargy and copper deficiency.

**Question 0**

How many people suffer from zinc deficiency?

**Question 1**

What can excessive zinc consumption cause?

**Question 2**

Where can enzymes with a zinc atom in the reactive centre be found?

**Question 3**

What can zinc deficiency cause in children?

**Question 4**

What is extremely important for prenatal and postnatal development?

**Question 5**

What can cause symptoms in children from diarrhoea to stunted growth?

**Question 6**

Which substance has a zinc atom in its reactive centre?

**Question 7**

What causes symptoms such as defects and copper deficiency?

**Question 8**

How many people have zinc immunity?

**Question 9**

What can normal zinc consumption cause?

**Question 10**

What can cause symptoms in plants from diarrhoea to stunted growth?

**Question 11**

Which substance contains a zinc atom without a centre?

**Question 12**

What causes symptoms like leprosy and copper deficiency?

**Text number 4**

Zinc is a bluish-white, shiny, diamagnetic metal, although the most common grades of most commercial metals are dull. It is somewhat less dense than iron, and has a hexagonal crystal structure with a distorted hexagonal close packing, with each atom having six nearest neighbours (at a distance of 265.9 pm) in its plane and six other atoms at a greater distance of 290.6 pm. The metal is hard and brittle at most temperatures, but becomes malleable at 100-150°C. Above 210 °C, the metal becomes brittle again and can be crushed by impact. Zinc is a good conductor of electricity. For a metal, zinc has relatively low melting (419,5 °C) and boiling (907 °C) points. It has the lowest melting point of any transition metal except mercury and cadmium.

**Question 0**

What colour is zinc?

**Question 1**

Is iron denser than zinc?

**Question 2**

At what temperature does the metal become malleable?

**Question 3**

At what temperature does zinc become brittle?

**Question 4**

What is the boiling point of zinc?

**Question 5**

What colour is the zinc before commercial use?

**Question 6**

What is the crystal structure of a synchrotron?

**Question 7**

What happens to zinc when it is treated at temperatures between 100 and 150 degrees Celsius?

**Question 8**

At what temperature can zinc be ground?

**Question 9**

What colour is rotten zinc?

**Question 10**

At what temperature does the metal become a liquid?

**Question 11**

At what temperature does zinc become unbreakable?

**Question 12**

What is the cooking temperature of zinc?

**Question 13**

What is the impossible structure of zinc?

**Text number 5**

Several dozen radioisotopes have been characterised. 65Zn, with a half-life of 243.66 days, is the longest-lived radioisotope, followed by 72Zn with a half-life of 46.5 hours. Zinc has 10 nuclear isomers. 69mZn has the longest half-life, 13.76 h. The superscript m indicates a metastable isotope. A metastable isotope has a nucleus in an excited state and returns to the ground state by emitting a photon in the form of a gamma ray. 61Zn and 73Zn have three and two excited states, respectively. Isotopes 65Zn, 71Zn, 77Zn and 78Zn each have only one excited state.

**Question 0**

How many radioisotopes of zinc have been found?

**Question 1**

What is the longest half-life of isotopes?

**Question 2**

What does the superscript m stand for?

**Question 3**

How many accelerated modes does the 61Zn have?

**Question 4**

How many enthusiastic subscribers does 73Zn have?

**Question 5**

What is the longest-lived radioisotope?

**Question 6**

What is the half-life of 72Zn?

**Question 7**

How many nuclear isomers does zinc have?

**Question 8**

What does the superscript "m" stand for?

**Question 9**

What does a metastable isotope do to return from the excited state back to the ground state?

**Question 10**

How many radioisotopes of zinc are hidden?

**Question 11**

What is the only half-life of isotopes?

**Question 12**

How many boring spaces does the 61Zn have?

**Question 13**

How many nuclear isomers does zinc avoid?

**Text number 6**

Zinc chemistry is dominated by an oxidation state of +2. When compounds of this oxidation state are formed, the outer shell s-electrons are lost, leaving a single zinc ion with the electron configuration [Ar]3d10.In aqueous solution, the octahedral complex [Zn(H  
2O)6]2+ is the dominant species  
.Evaporation of zinc together with zinc chloride at temperatures above 285 °C indicates the formation of Zn  
2Cl  
2, a zinc compound with oxidation state +1.  
  
Zinc compounds with   
  
oxidation states other than +1or +2   
  
are not recognised. According to the calculations, it is unlikely that a zinc compound with an oxidation state of +4 exists.

**Question 0**

Which oxidation state controls zinc?

**Question 1**

What indicates the formation of ZN2Cl?

**Question 2**

What are the only two known oxidation states of zinc?

**Question 3**

Which oxidation state controls the chemistry of zinc?

**Question 4**

What are the only two known oxidation states of zinc compounds?

**Question 5**

What oxidation state repels zinc?

**Question 6**

What indicates the destruction of ZN2Cl?

**Question 7**

What is the only known oxidation state of zinc compounds?

**Text number 7**

The chemistry of zinc is similar to that of the late first-row transition metals nickel and copper, but it has a full d-shell, so its compounds are diamagnetic and mostly colourless. The ionic radii of zinc and magnesium happen to be almost identical. As a result, some of their salts have the same crystal structure, and under conditions where the ionic radius is the determining factor, the chemistry of zinc and magnesium have much in common. Otherwise, there are few similarities. Zinc tends to form more covalent bonds and forms much more stable complexes with N and S donors. Zinc complexes are mostly 4- or 6-coordinate, although 5-coordinate complexes are known.

**Question 0**

Because the d-shell is filled with zinc, its compounds are usually what?

**Question 1**

Which two elements have almost identical ionic radii?

**Question 2**

What is the decisive factor when zinc and magnesium are chemically very similar?

**Question 3**

With which donors does zinc form stable complexes?

**Question 4**

Which two elements have exactly the same ionic radii?

**Question 5**

Which donors of zinc interfere with stable complexes?

**Question 6**

What is the decisive factor when zinc and magnesium are chemically very different?

**Question 7**

Why are zinc compounds very colourful?

**Text number 8**

Zinc(I) compounds are rare and require bulky ligands to stabilise the low oxidation state. Most zinc(I) compounds formally contain a [Zn2]2+ nucleus analogous to the [Hg2]2+ dimer cation found in mercury(I) compounds. The diamagnetic nature of the ion confirms its dimeric structure. The first Zn-Zn bonded zinc(I) compound, (η5-C5Me5)2Zn2, is also the first dimethallocene. The [Zn2]2+ ion decomposes rapidly to zinc metal and zinc(II) and has been obtained only as a yellow glass formed by cooling a solution of metallic zinc in molten ZnCl2.

**Question 0**

What is needed to stabilise low oxidation states of zinc (l) compounds?

**Question 1**

What nuclei do most zinc (l) compounds contain?

**Question 2**

What confirms the dimeric structure of a compound?

**Question 3**

When a solution of metallic zinc is cooled in molten ZnCl2, what is formed?

**Question 4**

What is needed to stabilise the high oxidation state of zinc(l) compounds?

**Question 5**

What nucleus do all zinc (l) compounds contain?

**Question 6**

What spoils the dimeric structure of a compound?

**Question 7**

When a solution of metallic zinc is heated in molten ZnCl2, what is formed?

**Text number 9**

Binary compounds of zinc are known from most metal oxides and all non-metals except noble gases. The oxide ZnO is a white powder that is almost insoluble in neutral aqueous solutions, but is amphoteric and soluble in both strongly alkaline and acidic solutions. Other chalcogenides (ZnS, ZnSe and ZnTe) have a variety of applications in electronics and optics. Pnictogenides (Zn  
3N  
2, Zn  
3P  
2, Zn  
3As  
2 and Zn  
3Sb  
2), peroxide (ZnO  
2), hydride (ZnH  
2) and carbide (ZnC  
2) are also knownOf the four halides, ZnF  
2 is ionic in nature, while the others (ZnCl  
2, ZnBr  
2 and ZnI  
2) have relatively low melting points and are considered to be more covalent in nature

**Question 0**

What is not known about zinc binary compounds?

**Question 1**

What solutions can ZnO be dissolved in?

**Question 2**

What are the applications of calcogenides?

**Question 3**

What cannot be known about zinc binary compounds?

**Question 4**

What applications do calcogenides not have?

**Text number 10**

In weak alkaline solutions containing Zn2+ ions, the hydroxide Zn(OH)  
2 is formed as a white precipitate  
stronger alkaline solutions, this hydroxide dissolves to formzinc lattices   
  
  
  
  
  
  
  
  
  
  
  
  
([  
Zn  
  
  
  
  
  
  
  
  
  
  
  
  
(OH)4]2-). Nitrate Zn(NO3)  
2, chlorate Zn(ClO3)  
2, sulphate ZnSO  
4, phosphate Zn  
3(PO4)  
2, molybdate ZnMoO  
4, cyanide Zn(CN)  
2, arsenite Zn(AsO2)  
2arsenate Zn(AsO4)  
2-8H  
2O and chromate ZnCrO  
  
  
4 (one of the few coloured zinc compounds) are a few examples of other common inorganic zinc compoundsOne of the simplest examples of an organic   
  
  
  
  
  
  
  
  
  
  
  
  
zinc compound is acetate (Zn(O  
2CCH3)  
  
  
  
  
  
  
  
  
  
  
  
2

**Question 0**

What does Zn(OH)2 dissolve in a strong alkaline solution?

**Question 1**

What is heated in strong alkaline solutions?

**Text number 11**

The Charaka Samhita, believed to have been written between 300-500 AD, mentions a metal that, when oxidised, produces pushpanjan, believed to be zinc oxide. Zinc mines in Zawar, near the city of Udaipur in India, have been in operation since the Mauryan period. However, the smelting of metallic zinc here seems to have begun around 1200 AD. According to one estimate, an estimated 1 million tonnes of metallic zinc and zinc oxide were produced at this site between the 13th and 16th centuries. Another estimate puts the total metallic zinc production during this period at 60 000 tonnes. In the Rasaratna Samuccaya, written around 1200 AD, it is estimated that the total amount of metal used in the production of copper was about 1,000 tonnes per year. , mentions two types of zinc-containing ores: one used for metal mining and the other for medicinal purposes.

**Question 0**

Zinc oxide is believed to be mentioned in which ancient text?

**Question 1**

From what period do the active zinc mines in India date back?

**Question 2**

What process took place around the 13th century?

**Question 3**

When was Rasaratna Samuccaya written?

**Question 4**

What are the two uses of zinc ore mentioned in Rasaratna Samuccaya?

**Question 5**

Which ancient text prohibits the use of zinc oxide?

**Question 6**

What is the period of active zinc mining in China?

**Question 7**

What process took place around the 6th century?

**Question 8**

When was Rasaratna Samuccaya destroyed?

**Question 9**

What is the only use of zinc ore mentioned in Rasaratna Samuccaya?

**Text number 12**

The name of the metal was probably first documented by Paracelsus, a Swiss-born German alchemist who referred to the metal as "zincum" or "zinken" in his book Liber Mineralium II in the 1500s. The word is probably derived from the German word zinke, and is thought to mean 'jagged, sharp or jagged' (metallic zinc crystals look needle-like). Zinc could also mean 'tin-like', as it is related to the German zinn, meaning tin. Another possibility is that the word comes from the Persian word for stone سنگ seng. The metal was also called Indian tin, tutanego, calamine and spinter.

**Question 0**

Who is considered to have documented zinc first?

**Question 1**

Why could zinc possibly be derived from the German word zinke?

**Question 2**

Why is it possible that the name zinc could be derived from the German zinn?

**Question 3**

What other terms exist for zinc?

**Question 4**

Who is the only person documenting zinc?

**Question 5**

Why would zinc be possibly derived from the fictional word zinke?

**Question 6**

What other forbidden words are there for zinc?

**Question 7**

Who was the first alchemist to document zinc, born in India?

**Text number 13**

In 1758, William Champion's brother John patented a process to calcine zinc sulphide into a useful oxide in the retort process. Prior to this, zinc could only be made from calamine. In 1798, Johann Christian Ruberg improved the smelting process by building the first horizontal retort smelter. In Belgium, Jean-Jacques Daniel Dony built a second horizontal zinc smelter with even more zinc processing. In 1780, Luigi Galvani, an Italian doctor, discovered that attaching the spinal cord of a freshly cut frog to an iron rail attached with a brass hook caused the frog's leg to twitch. He mistakenly thought he had discovered the ability of nerves and muscles to produce electricity and called the effect 'animal electricity'. The galvanic cell and the electroplating process were both named after Luigi Galvan, and these discoveries paved the way for electric batteries, electroplating and cathodic protection.

**Question 0**

Who was the first to patent a process to create oxide that can be used in a retort process?

**Question 1**

Before John Champion, what was the only element used to make zinc?

**Question 2**

Who built the first horizontal retort smelter?

**Question 3**

What did Galvani call the effect that made the frog's legs twitch?

**Question 4**

What were the three important things that Galvan's findings led to?

**Question 5**

Who was the first to ban the process of creating oxide that can be used in the retort process?

**Question 6**

What is still the only element used to make zinc?

**Question 7**

Who built the only vertical retort smelter?

**Question 8**

What did Galvani call the effect that made the frogs' legs fly?

**Question 9**

What were the adverse effects of Galvan's findings?

**Text number 14**

Zinc metal is produced using extraction metallurgy. After grinding the ore to obtain ore concentrate, flotation is used to selectively separate the minerals from the by-product by exploiting their hydrophobicity differences. The concentrate contains about 50 % zinc and the remainder sulphur (32 %), iron (13 %) and SiO  
2 (5 %), usually consisting of zinc sulphide (80-85 %), iron sulphide (7,0-12 %), lead sulphide (3-5,0 %), silica (2,5-3,5 %) and cadmium sulphide (0,35-0,41 %)

**Question 0**

What is zinc made from?

**Question 1**

What is froth flotation used for?

**Question 2**

What is the first stage of zinc metal production?

**Question 3**

What percentage of the malt dew is zinc?

**Question 4**

What is used to remove metallic zinc?

**Question 5**

What is flotation no longer used for?

**Question 6**

What is the only step in the production of zinc metal?

**Question 7**

What percentage of the s'more sealant is zinc?

**Text number 15**

The production of sulphide zinc ores produces large quantities of sulphur dioxide and cadmium vapour. Smelter slag and other process residues also contain significant amounts of heavy metals. In the Belgian towns of La Calamine and Plombières, some 1.1 million tonnes of metallic zinc and 130 thousand tonnes of lead were mined and smelted between 1806 and 1882. Significant amounts of zinc and cadmium leach from the dumps of past mining operations, resulting in significant amounts of heavy metals in the sediments of the Geul river. About two thousand years ago, mining and smelting activities together emitted 10 thousand tonnes of zinc per year. Zinc emissions increased tenfold since 1850, but peaked at 3.4 million tonnes per year in the 1980s and fell to 2.7 million tonnes in the 1990s, although a 2005 Arctic troposphere study found that concentrations did not reflect the decline. The ratio of anthropogenic to natural emissions is 20:1.

**Question 0**

Why are large amounts of sulphur dioxide and cadmium vapour produced?

**Question 1**

What does the undigested slag contain in significant quantities?

**Question 2**

Why are there significant amounts of heavy metals in the Geul river?

**Question 3**

What is the relationship between man-made and natural emissions?

**Question 4**

What produces small amounts of sulphur dioxide and cadmium vapour?

**Question 5**

What does the thawing slag contain in low quantity?

**Question 6**

Why are there no heavy metals in the Geul river?

**Question 7**

What is the relationship between man-made and unnatural emissions?

**Text number 16**

Zinc is more reactive than iron or steel, so it attracts almost all local oxidation until it corrodes away completely.   
  
  
  
As zinc corrodes, a protective surface layer of oxide and carbonate (Zn  
5(OH)  
6(CO  
3)  
2)  
  
  
  
formed.   
  
  
  
This protection lasts even after the zinc layer is scratched away, but weakens over time as the zinc corrodes away. Zinc is applied electrochemicallyor as molten zinc by hot dip galvanising or spraying. Galvanising is used for chain link fences, guard rails, suspension bridges, lamp posts, metal roofs, heat exchangers and car bodies.

**Question 0**

Which two compounds are more reactive than zinc?

**Question 1**

What is formed when zinc corrodes?

**Question 2**

How is zinc used?

**Question 3**

What is used in many common items, such as chain link fences?

**Question 4**

What is the only compound more reactive than zinc?

**Question 5**

What explodes when zinc corrodes?

**Question 6**

How is zinc used for wounds?

**Question 7**

What is used for many rare items, such as chain link fences?

**Text number 17**

The relative reactivity of zinc and its ability to attract oxidation make it an effective sacrificial anode for cathodic protection (CP). For example, cathodic protection of a buried pipeline can be achieved by attaching zinc anodes to the pipe. The zinc acts as an anode (negative terminal) by slowly corroding away as it conducts an electric current through the steel pipe.[Note 2] Zinc is also used for the cathodic protection of metals exposed to seawater against corrosion. A zinc disc attached to the iron rudder of a ship slowly corrodes while the rudder remains intact. Other similar applications include a zinc plug attached to a propeller or a metallic cover for a ship's keel.

**Question 0**

What makes zinc an effective sacrificial anode?

**Question 1**

What happens when zinc anodes are connected to a buried pipe?

**Question 2**

How is the zinc disc attached to the iron rudder of a ship?

**Question 3**

Why does zinc protect metals exposed to seawater from corrosion?

**Question 4**

What makes zinc an ineffective sacrifice?

**Question 5**

What is not to be gained by attaching a zinc ball to the iron rudder of a ship?

**Question 6**

Why can zinc never corrode?

**Question 7**

Why does zinc damage metals exposed to seawater?

**Text number 18**

Other widely used alloys containing zinc include nickel-silver, typewriter metal, soft alloy, aluminium alloy and commercial bronze. Zinc is also used in modern straws as a substitute for the traditional lead/tin alloy. Alloys containing 85-88% zinc, 4-10% copper and 2-8% aluminium are used to a limited extent in certain types of machinery bearings. Zinc has been used primarily in the manufacture of US one-cent coins since 1982. The zinc core is coated with a thin layer of copper to give the appearance of a copper coin. In 1994, 33 200 tonnes (36 600 short tonnes) of zinc were used to produce 13.6 billion pennies in the United States.

**Question 0**

What has zinc replaced in pipe organs?

**Question 1**

Zinc, copper and aluminium alloys are used in which part of the machinery?

**Question 2**

Zinc is the main metal used to make which American currency?

**Question 3**

What is zinc coated with to affect the appearance of pennies?

**Question 4**

What has zinc been replaced by in pipe organs?

**Question 5**

What is zinc coated with to affect the appearance of coins?

**Question 6**

What is the only metal used in American currency?

**Question 7**

What is the only metal used in straws?

**Text number 19**

Alloys, consisting mainly of zinc and small amounts of copper, aluminium and magnesium, are useful for both die casting and rotary casting, especially in the automotive, electrical and iron industries. These alloys are marketed under the name Zamak. An example is zinc aluminium. The alloy's low melting point and low viscosity allow the production of small and complex shapes. The low operating temperature leads to rapid cooling of the cast products, allowing rapid assembly. Another alloy, marketed under the brand name Prestal, contains 78% zinc and 22% aluminium and is reported to be almost as strong as steel but as malleable as plastic. The superplasticity of the alloy allows it to be cast using ceramic and cement castings.

**Question 0**

For what other purposes than die casting are zinc alloys mixed with copper, aluminium and magnesium used?

**Question 1**

What is the name of a zinc alloy mixed with copper, aluminium and magnesium marketed under?

**Question 2**

What can be produced with the low melting point and low viscosity of a zinc-aluminium alloy?

**Question 3**

What brand of alloy is supposed to be as strong as steel and yet as malleable as plastic?

**Question 4**

What is used to pour Prestal?

**Question 5**

What are zinc alloys mixed with copper, aluminium and plastic used for?

**Question 6**

What can be made from a zinc-aluminium alloy with a high melting point and high viscosity?

**Question 7**

What is used to remove Prestal?

**Question 8**

What name is used to market a zinc alloy mixed with steel and copper?

**Question 9**

What brand of alloy should be strong as silk and yet malleable as butter?

**Text number 20**

Similar alloys with a small amount of lead added can be cold rolled into sheets. An alloy containing 96% zinc and 4% aluminium is used to make stamping dies for small production runs where ferrous metal dies would be too expensive. For building facades, roofs or other applications where zinc is used in thin sheets and processes such as deep drawing, rolling or bending, zinc alloys alloyed with titanium and copper are used. Unalloyed zinc is too brittle for such manufacturing processes.

**Question 0**

What can be done when small amounts of lead are added to mixtures?

**Question 1**

What is made from an alloy of 4% aluminium and 96% zinc?

**Question 2**

Why are alloys used in the manufacture of stamping dies instead of metal?

**Question 3**

Why is unalloyed zinc not used in construction applications?

**Question 4**

What can be done when large amounts of lead are added to mixtures?

**Question 5**

What is made from a mixture of 4% magic and 96% zinc?

**Question 6**

Why are alloys used to make metal rather than stamping dies?

**Question 7**

Why is unalloyed zinc used in construction applications?

**Text number 21**

About a quarter of US zinc production (2009) is consumed in the form of zinc compounds, several of which are used industrially. Zinc oxide is widely used as a white pigment in paints and as a catalyst in rubber manufacturing. It is also used as a thermodegradable agent in rubber and protects its polymers from ultraviolet radiation (the same UV protection is provided by plastics containing zinc oxide). Thanks to its semiconducting properties, zinc oxide is used in varistors and photocopying products. The zinc-zinc oxide cycle is a two-step thermochemical process based on zinc and zinc oxide to produce hydrogen.

**Question 0**

In what form is 1/4 of zinc used in the US?

**Question 1**

What kind of zinc compound is used in the manufacture of rubber?

**Question 2**

What protects rubber polymers from ultraviolet radiation?

**Question 3**

Why is zinc oxide useful in copying products?

**Question 4**

What is the zinc-zinc oxide cycle?

**Question 5**

In what form is 1/4 zinc used in Ukraine?

**Question 6**

What kind of zinc compound is used to melt rubber?

**Question 7**

What protects rubber polymers from nuclear radiation?

**Question 8**

Why is zinc oxide not useful in photocopying products?

**Question 9**

What is the zinc-zinc dioxide cycle?

**Text number 22**

Zinc chloride is often added to lumber as a flame retardant and can be used as a wood preservative. It is also used in the manufacture of other chemicals. Zinc methyl (Zn(CH3)  
2) is used in a number of organic synthesesZinc sulphide (ZnS) is used in luminescentpigments such as clock hands, X-ray and television screens and light colours. ZnS crystals are used in lasers operating in the mid-infrared region of the spectrum. Zinc sulphate is a chemical used in dyes and pigments. Zinc pyrithione is used in antifouling paints.

**Question 0**

What is added to the tree to preserve it?

**Question 1**

What is it about zinc sulphide that makes it useful on TV screens?

**Question 2**

What kind of lasers use zinc sulphide crystals?

**Question 3**

Where is single-sex tourism used?

**Question 4**

What is removed from a tree to preserve it?

**Question 5**

What is the property of zinc sulphide that makes it dangerous on TV screens?

**Question 6**

In what kind of robots are zinc sulphide crystals used?

**Question 7**

Where is it illegal to be single?

**Text number 23**

64Zn, the most abundant isotope of zinc, is highly susceptible to neutron activation and converts to the highly radioactive 65Zn, which has a half-life of 244 days and produces intense gamma radiation. Therefore, the zinc oxide used as corrosion inhibitor in nuclear reactors is stripped of 64Zn before use and is called depleted zinc oxide. For the same reason, zinc has been proposed as a salt material for nuclear weapons (cobalt is another, better known salt material). The cladding containing isotopically enriched 64Zn would be irradiated by the intense high-energy neutron flux of an exploding thermonuclear weapon, producing a large amount of 65Zn, which would significantly increase the radioactivity of the weapon's fallout. Such a weapon has reportedly never been built, tested or used. 65Zn is also used as a tracer to study the wear of zinc-containing alloys or the transport and role of zinc in organisms.

**Question 0**

What is the most abundant isotope of zinc?

**Question 1**

What does 65Zn produce?

**Question 2**

Why is zinc oxide used in nuclear reactors?

**Question 3**

What is used to test the wear of alloys containing zinc?

**Question 4**

What is the only isotope of zinc?

**Question 5**

What does 65Zn reduce?

**Question 6**

Why is zinc oxide used in nuclear reactors?

**Question 7**

What is used to test how zinc-containing alloys melt?

**Text number 24**

Zinc is included in most single-tablet daily vitamin and mineral supplements. These include zinc oxide, zinc acetate and zinc gluconate. Zinc is believed to have antioxidant properties that may protect against accelerated ageing of skin and muscles; studies on its effectiveness vary. Zinc also helps speed up the healing process after injury. It is also suspected of boosting the body's immune system. Zinc deficiency can affect almost all parts of the human immune system.

**Question 0**

Which consumer product contains zinc?

**Question 1**

Which zinc property is thought to protect against skin ageing?

**Question 2**

What are the benefits of zinc after an injury?

**Question 3**

In which consumer product is zinc banned?

**Question 4**

Which property of zinc is thought to reverse ageing?

**Question 5**

What are the dangers of zinc after an injury?

**Question 6**

What is the only formulation in which zinc is available?

**Text number 25**

Although zinc has not yet been tested as a treatment in humans, a growing body of evidence suggests that zinc can kill prostate cancer cells. Because zinc naturally resides in the prostate and because the prostate is relatively inaccessible by invasive methods, its potential as a chemotherapeutic agent in this type of cancer has shown promise. However, other studies have shown that chronic use of zinc supplements above the recommended dose may actually increase the risk of developing prostate cancer, probably also due to the natural accumulation of this heavy metal in the prostate.

**Question 0**

What kind of cancer cells can zinc kill?

**Question 1**

What type of substance is zync useful against prostate cancer?

**Question 2**

What can zinc overuse possibly cause?

**Question 3**

Where does zinc naturally accumulate in the body?

**Question 4**

Which types of cancer cells can zinc be shown to cure?

**Question 5**

Which substance zinc is useless against prostate cancer?

**Question 6**

What could possibly be caused by normal zinc use?

**Question 7**

Where does zinc mysteriously accumulate in the body?

**Text number 26**

There are many important organic zinc compounds. Organo-zinc chemistry is the science of organo-zinc compounds, describing their physical properties, synthesis and reactions. Important applications include the Frankland-Duppa reaction in which an oxalate ester (ROCOCOOR) reacts with an alkyl halide R'X, zinc and hydrochloric acid to form an α-hydroxycarboxylic ester RR'COHCOOR, the reformazeki reaction, in which α-haloesters and aldehydes are converted to β-hydroxyesters, Simmons-Smith reaction in which carbenoid (iodomethyl)zinc iodide reacts with alkene (or alkyne) to convert them to cyclopropane, addition reaction of organic zinc compounds with carbonyl compounds. Barbier's reaction (1899) is the zinc equivalent of the magnesium-Grignard reaction and is the better of the two. In the presence of almost any water, the formation of organomagnesium halide fails, whereas Barbier's reaction can occur even in water. However, organozinc is much less nucleophilic than Grignard, expensive and difficult to handle. Commercially available diorganozinc compounds include dimethyl zinc, diethyl zinc and diphenyl zinc. In one study, an active organozinc compound has been obtained from much cheaper organobromine precursors:

**Question 0**

What does organic zinc chemistry describe?

**Question 1**

What is the zinc equivalent of the Grinard reaction?

**Question 2**

When does the formation of organic magnesium halides fail?

**Question 3**

What are dimethyl zinc, diethyl zinc and diphenyl zinc?

**Question 4**

What is organic zinc chemistry?

**Question 5**

What is the glass equivalent of the Grinard reaction?

**Question 6**

When does the formation of organic magnesium halides become permanent?

**Question 7**

What should dimethyl zinc, diethyl zinc and diphenyl zinc no longer be?

**Text number 27**

Zinc has a purely structural function in zinc rings, threads and clusters. Zinc fingers form parts of some transcription factors, which are proteins that recognise DNA base sequences during DNA replication and transcription. Each of the nine to ten Zn2+ ions in a zinc finger helps maintain finger structure by binding in a coordinated fashion to four amino acids in the transcription factor. The transcription factor wraps around the DNA helix and uses its fingers to bind precisely to the DNA sequence.

**Question 0**

What role does zinc play in fingers, threads and clusters?

**Question 1**

What are the proteins that druing replication and transcription of DNA, identify the base DNA?

**Question 2**

How many amino acids do Zn2+ ions bind to?

**Question 3**

What is the transcription factor involved?

**Question 4**

What role does zinc play in fingers, hands and clusters?

**Question 5**

Which proteins during DNA replication and transcription forget the base DNA?

**Question 6**

How many amino acids are rejected by Zn2+ ions?

**Question 7**

Where does the transcription factor remain vertical?

**Text number 28**

Other sources include fortified foods and supplements, which are available in various forms. A 1998 review found that zinc oxide, one of the most common dietary supplements in the US, and zinc carbonate are virtually insoluble and poorly absorbed by the body. The review referred to studies that found low plasma zinc concentrations after ingestion of zinc oxide and zinc carbonate compared to those found after ingestion of zinc acetate and sulphate salts. However, harmful excess intakes are a problem among the relatively wealthy and should probably not exceed 20 mg/day in healthy people, although the US National Research Council set a tolerable upper intake limit of 40 mg/day.

**Question 0**

What is the most common dietary supplement in the US?

**Question 1**

Why is zinc carbonate poorly absorbed in the body?

**Question 2**

What is the recommended daily dose of zinc supplementation for healthy adults?

**Question 3**

What is the maximum acceptable level of zinc?

**Question 4**

What is the only common supplement in the US?

**Question 5**

Why is zinc carbonate perfectly absorbed by the body?

**Question 6**

What is the recommended daily dose of zinc supplementation for unhealthy adults?

**Question 7**

What is the unacceptable upper intake of zinc?

**Text number 29**

However, a 2003 review recommended adding zinc oxide to cereals because it is cheap, stable and as easily absorbed as more expensive forms. A 2005 study found that there were no statistically significant differences in the absorption of different zinc compounds, such as oxide and sulphate, when added to corn tortillas as fortificants. A 1987 study found that zinc picolinate was better absorbed than zinc gluconate or zinc citrate. However, a 2008 study found that zinc glycinate was the best absorbed of the four types of supplements available.

**Question 0**

Zinc oxide is used to strengthen which product?

**Question 1**

Which product showed little difference in the absorption of different zinc compounds?

**Question 2**

Which compound is better absorbed than zinc gluconate?

**Question 3**

What is the best absorbed dietary zinc compound?

**Question 4**

What product is zinc oxide used to spoil?

**Question 5**

Which product had massive differences in the absorption of different zinc compounds?

**Question 6**

Which compound is absorbed in the same way as zinc gluconate?

**Question 7**

What is the only dietary zinc compound that can be absorbed?

**Question 8**

What year was the only study on zinc compounds carried out?

**Text number 30**

The symptoms of mild zinc deficiency are varied. Clinical consequences include growth retardation, diarrhoea, impotence and delayed maturation, hair loss, eye and skin lesions, impaired appetite, altered cognition, impaired host defence, impaired carbohydrate utilisation and reproductive teratogenesis. Mild zinc deficiency impairs immunity, although excessive zinc also impairs it. Animals lacking zinc in their diet need twice as much food to achieve the same weight gain as animals with sufficient zinc.

**Question 0**

What causes symptoms from diarrhoea to eye damage?

**Question 1**

What is a symptom of both zinc deficiency and excess zinc?

**Question 2**

What is needed to make zinc-deficient animals gain the same weight as animals with sufficient zinc?

**Question 3**

What prevents symptoms from diarrhoea to eye damage?

**Question 4**

What is not needed to make zinc-deficient animals gain the same weight as animals with sufficient zinc?

**Question 5**

What is no longer a symptom of both zinc deficiency and excess?

**Question 6**

Why don't animals use zinc in their diet?

**Text number 31**

Despite some concerns, Western vegetarians and vegans have not been found to suffer from a pronounced zinc deficiency any more than meat eaters. The main sources of plant-based zinc are cooked dried beans, sea vegetables, fortified cereal products, soy dishes, nuts, peas and seeds. However, the phytates in many whole grains and the fibre in many foods can interfere with zinc absorption, and the effects of low zinc intake are poorly understood. The zinc chelator phytate present in seeds and cereal bran may contribute to zinc malabsorption. There is some evidence that those with diets rich in phytates, such as some vegetarians, may need more than the US RDA (15 mg) of zinc daily. These considerations must be balanced against the fact that suitable zinc biomarkers are scarce and that the most commonly used indicator, plasma zinc, has poor sensitivity and specificity. Diagnosing zinc deficiency is an ongoing challenge.

**Question 0**

What is one way for vegetarians and vegans to get zinc?

**Question 1**

What is in wholegrain cereals that can interfere with zinc absorption?

**Question 2**

Where can I find zinc chelator phytate?

**Question 3**

What kind of diet can require more than 15 mg of zinc per day?

**Question 4**

What is the only way for vegetarians and vegans to get zinc?

**Question 5**

What can be found in wholegrain cereals that can help with zinc absorption?

**Question 6**

Where is the zinc chelator phytate banned?

**Question 7**

What kind of diet can require more than 150 mg of zinc per day?

**Text number 32**

Nearly two billion people in developing countries are zinc deficient. In children, it causes an increase in infections and diarrhoea, resulting in the death of around 800,000 children worldwide every year. The World Health Organisation (WHO) recommends zinc supplementation to treat severe malnutrition and diarrhoea. Zinc supplements help prevent disease and reduce mortality, especially in children with low birth weight or stunted growth. However, zinc supplements should not be given alone, as many developing countries have multiple deficiencies and zinc interacts with other trace elements.

**Question 0**

What do two billion people in the world lack?

**Question 1**

What kills 800 000 children worldwide every year?

**Question 2**

What does the WHO recommend for malnutrition and diarrhoea?

**Question 3**

Why should zinc alone not be given to those with multiple deficiencies?

**Question 4**

What do five billion people in the world lack?

**Question 5**

How many babies are born each year because of zinc?

**Question 6**

What does the WHO recommend to treat malnutrition and fever?

**Question 7**

Why should zinc alone not be given to those who are not deficient?

**Text number 33**

Zinc deficiency is the most common micronutrient deficiency in crops; it is particularly prevalent in high pH soils. Zinc-deficient soils are grown in about half of Turkey and India, a third of China and most of Western Australia, and significant responses to zinc fertilisation have been reported in these areas. Plants growing in zinc-deficient soils are more susceptible to disease. Zinc is added to soils primarily by weathering of rocks, but humans have added zinc through fossil fuel combustion, mining waste, phosphate fertilisers, pesticides (zinc phosphide), limestone, manure, sewage sludge and particles from galvanised surfaces. Excess zinc is toxic to plants, although zinc toxicity is much less common.

**Question 0**

In which soils is zinc deficiency most common?

**Question 1**

Growing plants in zinc-deficient soil makes them more susceptible to what?

**Question 2**

What effect does too much zinc have on plants?

**Question 3**

How is zinc added to the soil?

**Question 4**

What is the only soil type with a zinc deficiency?

**Question 5**

What does any level of zinc do to plants?

**Question 6**

How is zinc mainly removed from the soil?

**Question 7**

What are plants immune to in zinc-deficient soils?

**Text number 34**

There is evidence that copper deficiency is caused by people taking 100-300 mg of zinc daily. A 2007 study found that older men taking 80 mg daily were more likely to be hospitalised for urinary complications than those taking a placebo. The US RDA is 11 and 8 mg of zinc per day for men and women respectively. Levels of 100-300 mg can interfere with copper and iron uptake or adversely affect cholesterol. Zinc levels above 500 ppm in soil interfere with the ability of plants to absorb other essential metals such as iron and manganese. There is also a condition called zinc fouling or "zinc cooling", which can be caused by inhalation of fresh zinc oxide formed during the welding of galvanised materials. Zinc is a common ingredient in denture cream, which can contain 17-38 mg of zinc per gram. There have been claims that excessive use of these products has caused disability and even death.

**Question 0**

What kind of deficiency is common from taking 100-300mg of zinc daily?

**Question 1**

What kind of complications were observed in men taking 80 mg of zinc per day?

**Question 2**

What contributes to the presence of more than 500 ppm zinc in soil?

**Question 3**

What causes inhalation of fresh zinc oxide?

**Question 4**

People have argued that the overuse of which common product has caused disability and death?

**Question 5**

What kind of deficiency is common from taking 1000-3000mg of zinc daily?

**Question 6**

What kind of superpowers were seen in men who took 80 mg of zinc a day?

**Question 7**

How does it help if the soil contains more than 500 ppm of zinc?

**Question 8**

What causes inhalation of fresh zinc hydroxide?

**Question 9**

What people have claimed to be the psychological effects of excessive use?

**Text number 35**

The US Food and Drug Administration (FDA) has found that zinc damages the nerve receptors in the nose, which can cause anosmia. Reports of anosmia were also found in the 1930s, when zinc preparations were used in a failed attempt to prevent polio infections. On 16 June 2009, the FDA announced that consumers must stop using zinc-based intranasal cold preparations and ordered their removal from store shelves. According to the FDA, impaired sense of smell can be life-threatening because people with impaired sense of smell are unable to detect leaking gas or smoke and cannot tell if food is spoiled before they eat it. Recent studies suggest that the topical antimicrobial zinc pyrithione is a potent inducer of a heat shock response that can impair genomic integrity by inducing a PARP-dependent energy crisis in cultured human keratinocytes and melanocytes.

**Question 0**

What can zinc damage in the nose?

**Question 1**

Why was zinc used in the 1930s?

**Question 2**

What did the FDA order to be removed from stores in 2009?

**Question 3**

What product is proposed as a strong inducer of thermal shock response?

**Question 4**

What can zinc do to the nose of evolution?

**Question 5**

Why was zinc banned in the 1930s?

**Question 6**

What did the FDA order to be removed from shops in 1709?

**Question 7**

What product is proposed as an effective cold-shock response agent?

**Text number 36**

In 1982, the US Mint started to mint pennies coated with copper, but mainly made of zinc. The new zinc pennies can cause zinc toxicity, which can be fatal. In one reported case, chronic ingestion of 425 pennies (over 1 kg of zinc) resulted in death from gastrointestinal bacterial and fungal sepsis, while another patient who ingested 12 grams of zinc showed only lethargy and ataxia (gross lack of coordination of muscle movements). Several other cases have been reported in which people have been poisoned with zinc poisoning by ingesting zinc coins.

**Question 0**

Which coin has been made mainly of zinc since 1982?

**Question 1**

What is the concern about the new single pennies?

**Question 2**

Zinc ingestion can cause a lack of muscle movement and coordination called why?

**Question 3**

Why have people reported zinc poisoning?

**Question 4**

Which coin has been made only of zinc since 1983?

**Question 5**

What is the requirement with the new single pennies?

**Question 6**

Why have people never reported zinc poisoning?

**Question 7**

What did the ingestion of 4250 pence lead to in one reported case?

**Question 8**

What metal is no longer found in pennies?

**Text number 37**

Dogs sometimes swallow pennies and other small coins, requiring medical treatment to remove the foreign body. The zinc content of some coins can cause zinc poisoning, which is commonly fatal in dogs, causing severe haemolytic anaemia and liver or kidney damage; vomiting and diarrhoea are possible symptoms. Zinc is highly toxic to parrots and poisoning can often be fatal. Ingestion of fruit juices stored in zinc cans has led to mass poisoning of parrots with zinc.

**Question 0**

What are dogs known to eat?

**Question 1**

What are the causes of zinc coins ingested by dogs?

**Question 2**

In which animal is zinc toxic?

**Question 3**

What has been the cause of mass parrot poisoning from zinc?

**Question 4**

What are dogs not known to swallow?

**Question 5**

What are the causes of chocolate coins ingested by dogs?

**Question 6**

What animal is zinc-rich by a long shot?

**Question 7**

What has been the cause of mass poisoning of rats by zinc?

**Question 8**

Why do pennies and other small coins help heal when dogs eat them?

**Document number 322**

**Text number 0**

The designs and projects of Étienne-Louis Boullée and Claude Nicolas Ledoux influenced many neoclassical architects of the early 19th century. The numerous graphite drawings by Boullée and his students depict a spare geometric architecture that mimics the eternity of the universe. There are links between Boullée's ideas and Edmund Burke's concept of the sublime. Ledoux discussed the concept of architectural character and believed that a building should immediately inform the viewer of its function: literally speaking, such ideas lead to the term 'architecture parlante'.

**Question 0**

Who influenced many 19th century neoclassical architects?

**Question 1**

What does geometric architecture imitate about the universe?

**Question 2**

Which of Edmund Burke's concepts is related to Boullee's ideas?

**Question 3**

What concept was Ledoux dealing with?

**Question 4**

What should the concept of neoclassical architecture immediately convey to the viewer?

**Question 5**

What influenced neoclassical architecture in the 20th century?

**Question 6**

What did Claude Nicholas Lediux's drawings show?

**Question 7**

Whose ideas are related to Boullee's ideas on the sublime?

**Question 8**

What did Burke say about the concept of architectural character?

**Text number 1**

In the first quarter of the 1700s, four influential books were published that emphasised the simplicity and purity of classical architecture: the Vitruvius Britannicus (Colen Campbell 1715), Palladio's Four Books of Architecture (1715), De Re Aedificatoria (1726) and The Designs of Inigo Jones... with Some Additional Designs (1727). The most popular was the four-volume Vitruvius Britannicus by Colen Campbell. The book contained architectural sketches of famous British buildings inspired by the great architects, from Vitruvius to Palladio. Initially the book mainly featured the work of Inigo Jones, but later volumes included drawings and plans by Campbell and other 17th century architects. Palladian architecture became well established in 17th century Britain.

**Question 0**

In which century were the four most influential books published?

**Question 1**

Who wrote Vitruvius Britannicus?

**Question 2**

In which century did Palladian architecture become established?

**Question 3**

When was the Inigo Jones Models book published?

**Question 4**

Which style was popular with the English?

**Question 5**

What do books published in the 19th century highlight about classical architecture?

**Question 6**

What was the name of the four-volume books written by Inigo Jones?

**Question 7**

Which book contains prints of famous British buildings inspired by Vitruvius and Aedifacatoria?

**Question 8**

Which book featured the work of Inigo Jones and other 19th century architects?

**Text number 2**

At the forefront of the new school of design was the aristocratic 'architectural Earl' Richard Boyle, Third Earl of Burlington; he and William Kent designed Chiswick House in 1729. The house was a reinterpretation of Palladio's Villa Capra, but stripped of its 16th-century elements and ornamentation. The lack of decoration was a characteristic of Palladianism. In 1734, William Kent and Lord Burlington designed one of England's finest examples of Palladian architecture, Holkham Hall in Norfolk. The main building of this house followed Palladian dictates fairly closely, but the low, often detached wings of the Palladian outbuildings heightened its importance.

**Question 0**

Who was the "architect count"?

**Question 1**

When was Chiswick House designed?

**Question 2**

What was the original building that the Chiswick House design was a reinterpretation of?

**Question 3**

What design built in Norfolk in 1734 is considered one of England's finest examples of Palladian architecture?

**Question 4**

Who was inspired by architect Earl when he built Chiswick House?

**Question 5**

What was Richard Boyle's reinterpretation of Chiswick House?

**Question 6**

What was Villa Capra cleaned?

**Question 7**

Which architectural style do the decorations belong to?

**Question 8**

Whose dictates did the wings of the farmhouses follow?

**Text number 3**

Towards the mid-1700s, the movement expanded and began to incorporate more and more classical influences, including from ancient Greece. The transition to neoclassical architecture is traditionally dated to the 1750s. It was first influenced by England and France; in England, Sir William Hamilton's excavations at Pompeii and other sites, the influence of the Grand Tour and the work of William Chambers and Robert Adam were decisive in this respect. In France, the movement was fuelled by a generation of French art students educated in Rome and influenced by the writings of Johann Joachim Winckelmann. In other countries, such as Sweden and Russia, the style was also taken up by progressive circles.

**Question 0**

What other influences were incorporated into neoclassical architecture by the mid-1700s?

**Question 1**

Which Englishman excavated Pompeii?

**Question 2**

In which city did the generation of French art students study, who promoted neoclassical architecture and broader styles?

**Question 3**

Which other countries have adopted the neoclassical style?

**Question 4**

What was included in the movements by the mid-19th century?

**Question 5**

When was the transition to classical architecture made?

**Question 6**

Which archaeological excavations have an impact on the Classical period?

**Question 7**

What were the influences of the Roman art students educated in France?

**Question 8**

Where was neoclassical architecture adopted in traditional circles?

**Text number 4**

The second neoclassical wave, which is more severe, more studied and more consciously archaeological, is associated with the height of Napoleon's empire. In France, the first phase of neoclassicism took the form of the 'Louis XVI style' and the second of the 'Directoire' or Empire style. The Rococo style remained popular in Italy until the Napoleonic regime introduced a new archaeological classicism, which was adopted as a political statement by the young, progressive, urban, republican-minded Italians (according to whom?).

**Question 0**

When was the second wave of neoclassical architecture?

**Question 1**

What term is used to describe the first wave of neoclassicism in France?

**Question 2**

What is the second wave of neoclassicism in France called?

**Question 3**

Which style remained popular in Italy until the Napoleonic regime?

**Question 4**

What is the connection with the fall of Napoleon's empire?

**Question 5**

Which king was the architectural style named after during the first wave of neoclassicism?

**Question 6**

What was the famous first-wave neoclassical style in Italy?

**Question 7**

Who is against the archaeological classification introduced by the Napoleonic administrations?

**Question 8**

The Louis XVI style was popular until which regime?

**Text number 5**

In the interior, neoclassicism, inspired by the rediscoveries of Pompeii and Herculaneum, found an authentic classical interior. These had begun in the late 1740s, but only reached a wide audience in the 1760s, when the first luxurious volumes in strictly controlled distribution appeared in Le Antichità di Ercolano (The Antiquities of Herculaneum). The Antiquities of Herculaneum showed that even the most classicist interiors of the Baroque, or William Kent's 'Romanesque' rooms, were based on the exterior architecture of the basilica and temple turned inwards from the outside, and therefore often looked bombastic to modern eyes: the raised window frames had been transformed into gilded mirrors, and the fireplaces were covered by the temple facades.

**Question 0**

What rediscoveries inspired neoclassical interior design?

**Question 1**

What tightly controlled book brought the appeal of classical interior design to the masses?

**Question 2**

What are some examples of neoclassical interior design changes based on ancient rediscoveries?

**Question 3**

What were William Kent's interior designs based on?

**Question 4**

What rediscoveries inspired neoclassical exterior design?

**Question 5**

What had a wider audience in the 1740s?

**Question 6**

What were the classical Baroque exteriors based on?

**Question 7**

What are some examples of classic interior design?

**Text number 6**

In the new interiors, the aim was to recreate a truly Roman and authentic interior vocabulary. The techniques used in the style were flatter and lighter motifs, carved in low frieze-like reliefs or painted in monochrome en camaïeu ('like cameos'), individual medallions or vases or busts or bucrania or other motifs hanging from a laurel tree or ribbon, against a background of slender arabesques, perhaps of 'Pompei red' or pale shades, or the colour of stone. In France, the style was originally Parisian, Goût grec ('Greek style'), not court style; when Louis XVI came to the throne in 1774, his fashion-loving queen Marie Antoinette brought the 'Louis XVI' style to court.

**Question 0**

What was it that the interior wanted to recreate?

**Question 1**

What colours were used indoors?

**Question 2**

Who brought Louis XVI's style to court?

**Question 3**

What techniques were used to create the motifs?

**Question 4**

What were the original styles in France?

**Question 5**

What were the new layouts trying to recreate?

**Question 6**

Which techniques were excluded from the style?

**Question 7**

What was the original Parisian style in Greece?

**Question 8**

What do we do to bring Gout grec to justice?

**Text number 7**

Robert and James Adam began a new phase of neoclassical design when they travelled to Italy and Dalmatia in the 1750s and explored the ruins of the classical world. On their return to Britain, they published The Works in Architecture in instalments between 1773 and 1779, a book of engraved drawings that made Adam's repertoire available throughout Europe. The Adam brothers sought to simplify the Rococo and Baroque styles that had been fashionable in previous decades, in order to give Georgian houses what they considered a lighter and more elegant feel. Architectural Works showcased the main buildings on which the Adam brothers had worked and, above all, documented the interiors, furniture and fittings designed by the Adam brothers.

**Question 0**

Who started a new phase of neoclassical design?

**Question 1**

Where was the inspiration for the new phase of neoclassicism concentrated?

**Question 2**

Which book outlines the new trends in neoclassicism at this stage?

**Question 3**

In the late 1700s, the neoclassical design trend sought to simplify what styles?

**Question 4**

This new style was intended to give the design a different feel.

**Question 5**

Which architects travelled in Italy and Dalmatia in the mid-16th century?

**Question 6**

What did Robert and James Adam start in the 1600s?

**Question 7**

Who tried to simplify neoclassical design?

**Question 8**

Which book outlines the trends of the Baroque style?

**Question 9**

How did the old style feel compared to the new style?

**Text number 8**

From around 1800, examples of Greek architecture, presented through etchings and engravings, gave a new impetus to Neoclassicism, the Greek Revival. Little or no direct knowledge of Greek civilisation existed in Western Europe before the mid-1700s, when an expedition funded by the Dilettanti Society in 1751 and led by James Stuart and Nicholas Revett began serious archaeological research. On his return from Greece, George Lyttelton commissioned Stuart to build the first Greek building in England, the garden temple at Hagley Hall (1758-59). In the second half of the century, several British architects, such as Joseph Bonomi and John Soane, took up the expressive challenge of the Doric from their aristocratic patrons, but the Doric was to remain a private pastime of pleasure until the first decade of the 19th century.

**Question 0**

From around 1800, etchings and engravings came from where?

**Question 1**

What was this new phase of neoclassicism?

**Question 2**

Before what century was there little contact between Western Europe and Greek civilisation?

**Question 3**

Who led the expedition to Greece in 1751?

**Question 4**

What was the first Greek building in England?

**Question 5**

What influenced neoclassicism in the 1700s?

**Question 6**

What had been very little in Western Europe before the 19th century?

**Question 7**

I don't know: what was George Lyttelton commissioned to produce?

**Question 8**

What was the last phase of neoclassicism?

**Question 9**

What was the first Greek building in Western Europe?

**Text number 9**

In a wider social context, Greek Revival architecture brought a new sobriety and moderation to British public buildings around 1800, reflecting the nationalism that resulted from the Act of Union, the Napoleonic Wars and the clamour for political reform. William Wilkins' winning design in a public competition at Downing College, Cambridge, announced that the Greek style would become the dominant style of architecture. Wilkins and Robert Smirke went on to build some of the most important buildings of the period, including the Theatre Royal, Covent Garden (1808-09), the General Post Office (1824-29) and the British Museum (1823-48), Wilkins University College London (1826-30) and the National Gallery (1832-38). In Scotland, Thomas Hamilton (1784-1858), in collaboration with artists Andrew Wilson (1780-1848) and Hugh William Williams (1773-1829), created internationally important monuments and buildings, such as the Burns Monument at Alloway (1818) and the Edinburgh (Royal) Grammar School (1823-29).

**Question 0**

Whose winning design in a public competition started the dominance of Greek-style architecture?

**Question 1**

Which monument was founded in 1818?

**Question 2**

When was the main post office built?

**Question 3**

What year was the British Museum built?

**Question 4**

When was the National Gallery built?

**Question 5**

What is the Greek Revival and architecture?

**Question 6**

The design of which university marked the end of the Greek revival?

**Question 7**

Which monument was built in 1823?

**Question 8**

Which secondary school was built in 1818?

**Text number 10**

At the same time, the Empire style in France was a more grandiose wave of neoclassicism in architecture and decorative arts. Based mainly on imperial-Roman styles, the style originated and took its name from the First French Empire of Napoleon I, where it was intended to glorify Napoleon's leadership and the French state. The style corresponds to the more bourgeois Biedermeier style in the German-speaking countries, the Federal style in the United States, the Regency style in Great Britain and the Napoleonic style in Sweden. According to the art historian Hugh Honour, "far from being, as is sometimes assumed, the culmination of the neoclassical movement, empire marks its rapid decline and transformation into yet another mere revival of antiquity, from which all the lofty ideas and the force of conviction that inspired its masterpieces have been drained".

**Question 0**

How would the French empirical style be characterised by comparison?

**Question 1**

Where did the imperial Roman style originate?

**Question 2**

What was the equivalent of Empire in Britain?

**Question 3**

In the United States, the neoclassical empirical style was known during this period as what?

**Question 4**

Which French neoclassical style was less pompous?

**Question 5**

What is named after Napoleon II's wall?

**Question 6**

What was the US colonial response?

**Question 7**

What did Hugh Honour consider the pinnacle of the neoclassical movement?

**Text number 11**

High Neoclassicism was an international movement. Although neoclassical architecture used the same classical vocabulary as late Baroque architecture, it emphasised its planar qualities rather than its sculptural volumes. Projections and recesses and their effects of light and shadow were flatter, and the basic sculptural reliefs were flatter and usually framed by friezes, panels or panels. Individual, clearly articulated features were distinct rather than interpenetrating, independent and complete.

**Question 0**

What other architectural styles did neoclassical architecture have similarities with and vocabulary for?

**Question 1**

What characteristics were more emphasised in the neoclassical than in the Baroque?

**Question 2**

In addition to being smoother, how were individual features treated with neoclasic?

**Question 3**

How broad was the scope of neoclassicism?

**Question 4**

What was the national movement?

**Question 5**

What used a different vocabulary than late Baroque architecture?

**Question 6**

What emphasised its sculptural volumes?

**Question 7**

Which architectural features had a less uniform effect on light and shadow?

**Question 8**

Which architectural style was less isolated?

**Text number 12**

Neoclassicism also influenced urban planning; the ancient Romans had used a consolidated system of urban planning for both defence and civil use, but this system has its roots in even older civilisations. At its simplest, a grid system of streets, a central platform with city services, two slightly wider main boulevards and occasional diagonal streets were typical of very logical and systematic Roman planning. Ancient façades and building layouts were oriented towards these urban planning patterns and tended to function in relation to the importance of public buildings.

**Question 0**

Which ancient civilisation used neoclassicism in urban planning?

**Question 1**

Which basic street design system has its roots in neoclassicism?

**Question 2**

What are the 2 benefits of using neoclassicism in civil engineering?

**Question 3**

What kind of design has been influenced by classical architecture?

**Question 4**

Why did the Romans use an open system for urban planning?

**Question 5**

What kind of urban planning began with the Romans?

**Question 6**

What kind of urban design often uses diagonal streets?

**Question 7**

What was the orientation towards the importance of public buildings?

**Text number 13**

From the mid-1700s onwards, research and publication changed the direction of British architecture towards a purer vision of the ancient Greco-Roman ideal. James 'Athenian' Stuart's The Antiquities of Athens and Other Monuments of Greece was very influential in this respect, as were Robert Wood's Palmyra and Baalbec. Most contemporary British architects and designers adopted a combination of simple forms and rich detailing. The revolution started by Stuart was soon overshadowed by the work of Adam Brothers, James Wyatt, Sir William Chambers, George Dance, James Gandon and provincial architects such as John Carr and Thomas Harrison of Chester.

**Question 0**

In what direction did British architecture develop in the mid-1700s?

**Question 1**

What were Robert Wood's influential Greek monuments from the mid-1700s?

**Question 2**

Who started the Greek-inspired architectural revolution in Britain?

**Question 3**

Which brothers were the driving forces behind this Greek neoclassical movement?

**Question 4**

What changed the direction of British architecture from the mid-19th century onwards?

**Question 5**

What was the shift towards a less pure form of Greco-Roman architecture in the eighteenth century?

**Question 6**

Who has introduced a combination of complex forms and enrichment?

**Question 7**

What revolution did the Adams brothers start?

**Question 8**

Where did architects like George Dance live?

**Text number 14**

In the early 1900s, Albert Richardson's writings revived interest in pure neoclassical design. Vincent Harris (compare Harris's Manchester Central Reference Library's columnar and domed interior with the columnar and domed interior of John Carr and R. R. Duke), Bradshaw Gass & Hope and Percy Thomas, among others, designed public buildings in the neoclassical style during the interwar period. In British Raj India, Sir Edwin Lutyens' monumental urban design of New Delhi marked the sunset of neoclassicism. In Scotland and the north of England, where the Gothic Revival was less strong, architects continued to develop William Henry Playfair's neoclassical style. The works of Cuthbert Brodrick and Alexander Thomson show that in the late 19th century the results could be powerful and eccentric.

**Question 0**

Which author's writings in the 20th century sparked an interest in pure neoclassical design?

**Question 1**

In which period did Percy Thomas design public buildings in the neoclassical style?

**Question 2**

In which city did Sir Edwin Lutyens' urban planning mark a change in planning?

**Question 3**

Which new design was the trend after the neoclassical one?

**Question 4**

Who revived interest in pure neoclassical design in the 21st century?

**Question 5**

What types of buildings did Vincent Harris design between the wars?

**Question 6**

Which city planning marked the rise of neoclassicism?

**Question 7**

In which other region than England was there a strong Gothic revival?

**Question 8**

Which style was strong and eccentric at the end of the 20th century?

**Text number 15**

In France, the first phase of neoclassicism is expressed in the "Louis XVI style" of architects such as Ange-Jacques Gabriel (Petit Trianon, 1762-68); the second phase, known as the Directoire and Empire styles, can be characterised by the austere asteroidal Arc de Triomphe designed by Jean Chalgrin in 1806. In England, these two phases can be characterised first by the buildings of Robert Adam and then Sir John Soane. In France, the style of interior design was initially Parisian, 'Goût grec' ('Greek style'), not courtly. It was only when the young king came to the throne in 1771 that his fashion-loving queen, Marie Antoinette, introduced the 'Louis XVI' style to the court.

**Question 0**

What is the name of the first wave of neoclassicism in France?

**Question 1**

The second phase of French neoclassicism is known as what?

**Question 2**

Which architect represents the first neoclassical style in England?

**Question 3**

The structure that characterise England's second phase of neoclassical?

**Question 4**

Who designed the French court in its most modern style after 1771?

**Question 5**

Which style marked the first phase of neoclassicism in continental Europe?

**Question 6**

Which style replaced neoclassicism in 1806?

**Question 7**

Which style was originally court style and not Parisian style?

**Question 8**

Which king brought Louis XVI style to court?

**Text number 16**

What little there was started with Charles de Wailly's crypt in St Leu-St Gilles (1773-80) and Claude Nicolas Ledoux's Barriere des Bonshommes (1785-89). First-hand evidence of Greek architecture was of little importance to the French, influenced by the teachings of Marc-Antoine Laugier, who sought to discern Greek principles rather than mere practices. It was not until the neo-Greekism of Laboustre's Second Empire that the Greek revival briefly flourished in France.

**Question 0**

What is the earliest example of Greek architecture in France?

**Question 1**

How interested was France in Greek architecture?

**Question 2**

Who influenced the revival of Greekism in France?

**Question 3**

Which wave of neoclassicism did the Greek revival in France belong to?

**Question 4**

Who considers first-hand evidence of Greek architecture very important?

**Question 5**

What tended to distinguish the practices of the Greeks?

**Question 6**

Which revival flourished in France?

**Question 7**

What started in the crypt of Claude Nicholas Ludoux?

**Text number 17**

The earliest examples of neoclassical architecture in Hungary can be found in Vác. The French architect Isidor Marcellus Amandus Ganneval (Isidore Canevale) designed the triumphal arch and neoclassical façade of the French cathedral in the 1760s. The garden façade of the Esterházy Palace in Kismarton (now Eisenstadt, Austria) (1797-1805) is also the work of the French architect Charles Moreau. The two main architects of Hungarian neoclassicism were Mihály Pollack and József Hild. Pollack's main work is the Hungarian National Museum (1837-1844). Hild is famous for the cathedrals of Eger and Esztergom.

**Question 0**

Which city has the oldest neoclassical architecture in Hungary?

**Question 1**

Which French architect designed important neoclassical buildings in the 1760s?

**Question 2**

Who designed Esterhazy Palace?

**Question 3**

Who is famous for the cathedrals of Eger and Esztergom?

**Question 4**

What is one of the last examples of neoclassical architecture and hungry architecture?

**Question 5**

Which French architect designed a cathedral in Hungary in the 17th century?

**Question 6**

Charles Moreau was the main architect of what are you hungry for?

**Question 7**

Which two cathedrals Pollack designed and hungry

**Text number 18**

Neoclassical architecture was introduced in Malta in the late 1700s, during the last years of the Hospitaller dynasty. Early examples include the Bibliotheca (1786), De Rohan's Arch (1798) and the Hompesch Gate (1801), but Neoclassical architecture only became popular in Malta after the advent of British rule in the early 19th century. In 1814, a neoclassical colonnade decorated with the British coat of arms was added to the main guardhouse, which served as a symbol of British Malta. Other 19th century neoclassical buildings include the RNH Bighi (1832), St Paul's Pro-Cathedral (1844), Mosta Rotunda (1860) and the now-destroyed Royal Opera House (1866).

**Question 0**

When did Malta discover neoclassical architecture?

**Question 1**

What was the ruler at the time of the introduction of neoclassicism?

**Question 2**

When was RNH Bighi built?

**Question 3**

In what year was St Paul's pro-cathedral built?

**Question 4**

What was introduced in Malta in the late 19th century?

**Question 5**

What became unpopular in Malta after the establishment of British rule?

**Question 6**

Who was the ruler of Malta after the neoclassical period?

**Question 7**

Who ruled Malta in the 20th century?

**Text number 19**

Since the first decade of the 21st century, contemporary neoclassical architecture is usually classified under the concept of new classical architecture. Sometimes it is also referred to as neo-historicism/revivalism, traditionalism or simply neo-classical architecture such as the historic style. The term traditional architecture (or vernacular architecture) is most often used for architecture of a sincere traditional style, which adheres to regional architecture, materials and craftsmanship. The Driehaus Architecture Prize is awarded to outstanding figures in the field of traditional or classical architecture of the 21st century, and is twice the amount of the modernist Pritzker Prize.

**Question 0**

To which architectural discipline does neoclassicism belong today?

**Question 1**

What is the term for sincere traditional architecture that follows regional architecture?

**Question 2**

What is the award for a significant contribution to the tradition of classical architecture in the 21st century?

**Question 3**

What is another name for the new classical architecture?

**Question 4**

How was neoclassicism classified from the 20th century onwards?

**Question 5**

What is the new classical architecture, also referred to as

**Question 6**

What is architecture that uses a wide range of materials and craftsmanship from different regions?

**Question 7**

What is awarded to architects who contribute to the classical architecture of the 21st century?

**Text number 20**

During the period of modern architecture's dominance (roughly from the Second World War until the mid-1980s), the recession has brought about a certain revival of neoclassicism. This resurgence may be due to the new urbanism movement and the adoption of classical elements by postmodern architecture, which is ironic, especially in the light of the dominance of modernism. While some continued to use classicism ironically, some architects, such as Thomas Gordon Smith, began to look at classicism seriously. While some schools, such as the University of Virginia, were interested in classical architecture, no school was fully dedicated to classical architecture. In the early 1990s, Smith and Duncan Stroik started a classical architecture programme at the University of Notre Dame, which continues to be successful. Programmes at the University of Miami, Andrews University, Judson University and The Prince's Foundation for Building Community have trained many new classical architects since this resurgence. Today, one can find numerous buildings that have adopted the neoclassical style, as a generation of architects trained in this field is shaping urban design.

**Question 0**

When was neoclassical architecture quiet?

**Question 1**

What movement caused the resurgence of neoclassicism?

**Question 2**

In what ways do many postmodern models have classical elements?

**Question 3**

Which recent architect started to take elements of classicism seriously?

**Question 4**

What kind of architecture flourished from after the First World War until the 1980s?

**Question 5**

Which two types of architecture experienced a rebirth thanks to neoclassicism?

**Question 6**

What did Thomas Gordon Smith find ironic?

**Question 7**

Which university was dedicated exclusively to classical architecture?

**Question 8**

Why is modernism shaping urban planning?

**Text number 21**

In Britain, many architects worked in the neoclassical style. Two new university libraries, the Maitland Robinson Library at Downing College designed by Quinlan Terry and the Sackler Library designed by ADAM Architecture, show that the approach can vary from traditional to traditional to unconventional to unconventional. Recently, Prince Charles was the subject of controversy for promoting a classical building on the site of the former Chelsea Barracks in London. Writing to the Qatari royal family (who financed the project through the Qatari Diar real estate development company), he condemned the approved modernist plans and instead advocated a classical approach. His appeal was successful and the plans were withdrawn. A new design by the architectural firm Dixon Jones is currently being drawn up.

**Question 0**

Who has sparked the controversy over the development and design of Chelsea Barracks?

**Question 1**

Which family funded the development of the former Chelsea Barracks?

**Question 2**

Which new library illustrates the traditional style of neoclassicism?

**Question 3**

What is the name of the library that illustrates the unconventional style of neoclassicism?

**Question 4**

Is neoclassical design relevant in the UK?

**Question 5**

Which country has a number of architects who have worked in the Roman-Greco style?

**Question 6**

Which architectural style is always traditional?

**Question 7**

Who promoted the modern plan to develop the former Chelsea barracks site?

**Question 8**

Which building project was funded by the British Royal Family?

**Document number 323**

**Text number 0**

The South Slavic dialects have historically formed a continuum. The turbulent history of the region, especially the expansion of the Ottoman Empire, led to a diversity of dialects and religious differences. As a result of population migrations, Shtokavian became the most widespread dialect in the Western Balkans, penetrating westwards into an area previously inhabited by the languages of Chakavia and Kayakavia (which still intermingle with Slovene in the north-west). Bosniaks, Croats and Serbs differ religiously and have historically often belonged to different cultural groups, although a large number of peoples have lived side by side under foreign overlords. At that time, the language was referred to by various names, such as "Slavic", "Illyrian" or, on a regional basis, "Bosnian", "Serbian" and "Croatian", the latter often in combination with "Slavic" or "Dalmatian".

**Question 0**

What names were given to the language under foreign rule?

**Question 1**

What particular historical event caused a group of religious and verbal differences in the South Slavic dialect?

**Question 2**

Why was the culture of Stoka the most widespread culture in the Western Balkans?

**Question 3**

What was the historical territory of the Ottoman Empire?

**Question 4**

What happened to the expansion of Shtokavian?

**Question 5**

What became more common in Kajkavian as the population changed?

**Question 6**

What dialect used to go into the territory occupied by Bosniaks and Croats?

**Question 7**

Which was the Ottoman Empire often part of?

**Text number 1**

The Serbo-Croatian language was standardised in the mid-19th century by the Vienna Literary Convention, which was concluded by Croatian and Serbian writers and philologists decades before the creation of the Yugoslav state. From the outset, the literary standards of Serbian and Croatian were slightly different, although both were based on the same Shtokavian subclass, East Herzegovinian. In the 20th century, Serbo-Croatian served as the official language of the Kingdom of Yugoslavia (when it was called Serbo-Croatian Slovene) and later as one of the official languages of the Socialist Federal Republic of Yugoslavia. The break-up of Yugoslavia affected language attitudes, with social perceptions of language diverging along ethnic and political lines. Since the break-up of Yugoslavia, Bosnian has also become the official standard in Bosnia and Herzegovina, and there is an ongoing movement to codify a separate Montenegrin standard. The ethnic names for the Serbo-Croatian language are therefore usually Serbian, Croatian, Bosnian and sometimes Montenegro and Bunjevac.

**Question 0**

What were the Serb and Croat standards based on?

**Question 1**

What was the official language of the Kingdom of Yugoslavia?

**Question 2**

What ethnic names is Serbo-Croat related to?

**Question 3**

In what year was the Yugoslav state established?

**Question 4**

Which agreement helped to standardise the language of Eastern Herzegovina?

**Question 5**

What were the standards in Yugoslavia and Bosnia based on?

**Question 6**

What was the official language of Yugoslavia in the mid-19th century?

**Question 7**

How did the break-up of Croatia affect the language?

**Text number 2**

Like other South Slavic languages, Serbo-Croatian has a simple phonology, with a general system of five vowels and twenty-five consonants. Its grammar has evolved from General Slavonic and has a complex inflectional structure with seven grammatical cases for nouns, pronouns and adjectives. Verbs have an imperfective or perfective aspect and a moderately complex tense system. Serbo-Croatian is a pro-drop language with flexible word order, subject-verb-object is the default. It can be written in the Serbian Cyrillic alphabet or in the Gaj Latin alphabet, with thirty letters corresponding one to one, and the orthography is very phonemic in all standards.

**Question 0**

How many vowels are there in Serbo-Croatian?

**Question 1**

How many consonants are there in Serbo-Croatian?

**Question 2**

Where does the Serbo-Croatian grammar come from?

**Question 3**

What alphabet can be used to express the Serbo-Croatian language?

**Question 4**

What is the phonology of Serbian Cyrillic?

**Question 5**

How many consonants are there in the Gaj Latin alphabet?

**Question 6**

Where did the Serbian Cyrillic alphabet evolve from?

**Question 7**

What is the word order in Gaji's Latin alphabet?

**Question 8**

Name another language that can be used to write Pan-Slavic in addition to Serbian Cyrillic?

**Text number 3**

Throughout the history of the South Slavs, the vernaculars, written languages and literary languages of the different regions and ethnic groups (e.g. Chakavian, Kajkavian, Shtokavian) developed and diverged independently. Before the 19th century, they were collectively referred to as "Illyrians", "Slavs", "Slavs", "Bosniaks", "Dalmatians", "Serbs" or "Croats". The term Serbo-Croat was first used by Jacob Grimm in 1824, popularised by the Viennese philologist Jernej Kopitar in the following decades, and adopted by the Croatian grammarians of Zagreb in 1854 and 1859. At that time, the Serb and Croat lands were still part of the Ottoman and Austrian empires. Officially, the language was variously called Serbo-Croat, Croatian-Serbian, Serb and Croat, Croat and Serb, Serb or Croat, Croat or Serb. Unofficially, Serbs and Croats usually called the language "Serbian" or "Croat" without distinguishing between the two, while in independent Bosnia and Herzegovina "Bosnian", "Croat" and "Serbian" were considered the three names of one official language. In 1988, the Croatian linguist Dalibor Brozović still advocated the term Serbo-Croatian, arguing that Serbo-Croatian not only names two parts of the same language, but, like the Indo-European language, Serbo-Croatian simply marks the borders of the area where it is spoken and includes everything in between ("Bosnian" and "Montenegrin"). Today, the term "Serbo-Croat" is controversial because of the prejudice that nation and language must correspond. It is still used in the absence of a succinct alternative, although alternative names have been used, such as Bosnian/Croatian/Serbian (BCS), which is often used in political contexts, such as the Hague war crimes tribunal.

**Question 0**

Did the South Slavic languages develop in a homogeneous or independent way?

**Question 1**

What names were given to the different dialects before the 1800s?

**Question 2**

Who first used the term Serbo-Croat in 1824?

**Question 3**

Why is the term "Serbo-Croat" controversial today?

**Question 4**

What were the Slavic languages called in 1854 and 1859?

**Question 5**

What term did Jacob Grimm use before the 1800s?

**Question 6**

By what name was the language informally known in the Ottoman Empire?

**Question 7**

What were the three official langugae names of independent Montenegro?

**Question 8**

Which Croatian linguist coined the term Serbo-Croatian in 1824?

**Text number 4**

In the mid-19th century, the Serbs (led by the self-taught writer and folklorist Vuk Stefanović Karadžić) and most Croatian writers and linguists (represented by the Illyrian movement led by Ljudevit Gaj and Đuro Daničić) proposed that the most common dialect, the Stokavian dialect, should be used as the basis for their common standard language. Karadžić standardised the Serbian Cyrillic alphabet and Gaj and Daničić the Croatian Latin alphabet on the basis of the phonemes of vernacular speech and the principle of phonological spelling. In 1850, Serbian and Croatian writers and linguists signed the Vienna Literary Convention, in which they declared their intention to create a uniform standard. Thus was born a complex bivariate language, officially called "Serbo-Croatian" or "Serbian or Croatian" by the Serbs and "Croatian-Serbian" or "Croatian or Serbian" by the Croats. In practice, however, the variants of the conceived common written language functioned as different written variants, differing mainly in terms of lexical inventory and stylistic devices. A common expression describing this situation was that Serbo-Croatian or "Croatian or Serbian" was one language. During the Austro-Hungarian occupation of Bosnia and Herzegovina, the language of all three nations was called 'Bosnian' until the death of the administrator von Kállay in 1907, when the name was changed to 'Serbo-Croat'.

**Question 0**

What dialect did writers and linguists of Serbian and Croatian origin want to use as their common standard language?

**Question 1**

Why was Stokavian proposed as a common language base?

**Question 2**

Which document from 1850 formally announced the intention to create a single standard?

**Question 3**

After whose death in 1907, the name "Bosnian" was changed to "Serbo-Creation"?

**Question 4**

What dialect did Serbian and Croatian writers propose as the standard language in 1850?

**Question 5**

What does Ljudevit Gaj standardise in Serbian?

**Question 6**

On what basis was the Shtokavian standardised?

**Question 7**

Who signed the Vienna Literary Treaty in the mid-19th century?

**Question 8**

What did the Shtokavia signatories declare?

**Text number 5**

Western European scholars consider Yugoslavia's language policy to be exemplary: although three quarters of the population spoke one language, no language was official at federal level. Official languages were only declared official at state and provincial level, and very generously so: in Vojvodina there were five languages (including Slovak and Romani, spoken by 0.5% of the population) and in Kosovo four (Albanian, Turkish, Romani and Serbo-Croat). Sixteen languages were used in newspapers, radio and television studios, fourteen as the language of instruction in schools and nine in universities. Only the Yugoslav army used Serbo-Croatian as the sole language of command, and all other languages were represented in the army's other activities - but this is no different from other armies in multilingual countries or other specific institutions such as international air traffic control, where English is used worldwide. All variants of Serbo-Croat were used in the state administration and in republican and federal institutions. Both Serbian and Croatian variants were represented in various grammar books, dictionaries, school textbooks and books known as pravopis (with detailed spelling rules). Serbo-Croatian was a form of soft standardisation. However, legal equality could not undermine the prestige of the Serbo-Croatian language: as it was the language used by three quarters of the population, it served as an informal lingua franca. Within Serbo-Croatian, the Serbian variant, which had twice as many speakers as Croatian, was more highly valued, as confirmed by the fact that Slovene and Macedonian speakers preferred it to Croatian, since their languages are also primitive. This is a common situation in other multilingual languages, e.g. German variants differ in prestige, as do Portuguese variants. Moreover, all languages differ in terms of prestige: 'The fact is that languages (in terms of prestige, learnability, etc.) are not equal, and the law cannot make them equal'.

**Question 0**

What is the term used for books that contain spelling rules?

**Question 1**

What language was spoken by 3/4 of the population?

**Question 2**

Which of the two variants of Serbo-Croatian had twice as many speakers as the other?

**Question 3**

How many languages do Western European scientists use?

**Question 4**

Where were all the Albanian language variants used?

**Question 5**

What does the Yugoslav army think of Yugoslavia's language policy?

**Question 6**

At what level was the Yugoslav language policy announced?

**Question 7**

What percentage of the Turkish population spoke Slovak and Romanian?

**Text number 6**

As in most Slavic languages, the gender of nouns is mostly three: masculine, feminine and neuter, and this distinction still exists in the plural (unlike in Russian and partly in the Chakavian dialect). They also have two numbers: singular and plural. Some, however, think there are three numbers (also paucal or dual), since (preserved in nearby Slovene) there are two (dva, dvije/dve), three (tri) and four (četiri) and all numbers ending in these (e.g. After twenty-two, ninety-three, one hundred and four) the genitive is used in the singular, and after all other numbers from five (pet) and upwards the genitive is used in the plural. (The number one [jedan] is treated as an adjective.) Adjectives are placed before the noun they modify and must agree with it both in isotope and number.

**Question 0**

What are the three families of nouns in Serbo-Croatian?

**Question 1**

Where are adjectives placed in the Serbo-Croatian language?

**Question 2**

What number in Serbo-Croatian is treated as an adjective?

**Question 3**

What are the three genders in Slovenian?

**Question 4**

What kind of numbers are there in Russian?

**Question 5**

What are the three numbers in Slavic languages?

**Question 6**

Where are adjectives placed in Russian?

**Question 7**

What do the singular and plural numbers have to do when they are in front of a noun?

**Text number 7**

Comparative and historical linguistics offers some clues to remembering the position of the accent: if you compare many standard words in Serbo-Croatian with their Russian counterparts, for example, the accent of a Serbo-Croatian word is one syllable before the accent of a Russian word with a rising sound. Historically, the rising tone appeared when the place of the accent shifted to the preceding syllable (the so-called "Neo-Shtokavian retreat"), but the quality of this new accent was different - its melody was still "weighted" towards the original syllable. In most Shtokavian dialects (Neo-Shtokavian dialects) this shift occurred, but not in Chakavian, Khazkavian and Old Shtokavian dialects.

**Question 0**

What is the term used when the accent is shifted to the next preceding syllable?

**Question 1**

Which dialects did not follow the Neo-Shtokava lineage?

**Question 2**

Where can I look for tips on accent positions?

**Question 3**

What is the term used for the shift towards the original syllable?

**Question 4**

When did the quality of the accent emerge historically?

**Question 5**

What gives an indication of how the dialects were different?

**Question 6**

What followed Chakavia, Kajkavia and Old Shtokavia?

**Question 7**

What was different about the voice of historical linguistics?

**Text number 8**

The Croatian Latin alphabet (Gajica) followed shortly afterwards, when Ljudevit Gaj defined it as ordinary Latin, with five extra letters with diacritical marks, apparently borrowing heavily from Czech, but also from Polish, and inventing the unique digraphs "lj", "nj" and "dž". These digraphs are represented by the letters 'ļ', 'ń' and 'ǵ' in 'Rječnik hrvatskog ili srpskog jezika', published by the former Yugoslav Academy of Sciences and Arts in Zagreb. However, the latter digraphs are not used in the written standard of the language. Overall, Serbo-Croatian is therefore the only Slavic language that officially uses both Latin and Cyrillic scripts, although the Latin version is more commonly used.

**Question 0**

Serbo-Croatian is the only Slavic language that uses which two spellings together?

**Question 1**

Which version, Latin or Cyrillic, is most commonly used?

**Question 2**

How many extra letters are there in the Croatian Latin alphabet?

**Question 3**

How did Lyudevit Gaj define the Cyrillic alphabet?

**Question 4**

How often is Zagreb spelled?

**Question 5**

What is the Latin standard Rjecnik hrvatskog ili srpskog jezika?

**Question 6**

Which group published the Latin and Cyrillic script?

**Question 7**

How is Polish used in the literary standard?

**Text number 9**

The South Slavic language has historically formed a dialect continuum, meaning that each dialect has some similarities with a neighbouring dialect, and the differences increase with distance. However, the migrations resulting from the expansion of the Ottoman Empire into the Balkans in the 1500s and 1800s caused large-scale population movements that broke the dialect continuum into many geographical pockets. The migrations of the 20th century, mainly due to urbanisation and wars, have also contributed to the reduction of dialect differences.

**Question 0**

What is a dialect continuum?

**Question 1**

What caused the dialect continuum to break?

**Question 2**

What caused migration in the 20th century, as opposed to the 1500s and 1700s?

**Question 3**

What was the impact of the spread of the Ottoman Empire in the 20th century?

**Question 4**

What are the two characteristics of urbanisation?

**Question 5**

What has been historically created in the Balkans?

**Question 6**

What caused the wars of the 1500s and 1800s?

**Question 7**

What broke urbanisation into many geographical pockets?

**Text number 10**

The Serbo-Croatian dialects differ not only in the formulation of the questions by which they are named, but also in phonology, accent and intonation, case endings and tenses (morphology), and basic vocabulary. In the past, Chakavian and Kajkavian dialects were spoken over a much wider area, but they were replaced by Shtokavian dialects during the Ottoman Turkish colonisation of the Balkans in the 1400s and 1500s. These migrations caused the coinéization of the Shtokavian dialects, forming the dialect peaks of Western Shtokavian (closer to and in transition towards the adjacent Shtakavian and Kajkavian dialects) and Eastern Shtokavian (in transition towards the Torlaks and the whole Bulgaro-Macedonian region), and their subsequent spread at the expense of the Shtakavian and Kajkavian dialects. As a result, the Štokavian language now covers a wider area than all the other dialects combined, and continues to advance in enclaves where non-literary dialects are still spoken.

**Question 0**

Which dialect covers a larger area than all the other dialects put together?

**Question 1**

What is morphology for language?

**Question 2**

What has made the Stokavian language so widespread?

**Question 3**

What have the dialects of Chakavia and Kayan replaced?

**Question 4**

In what three ways do the dialects of Kajkavia differ from each other?

**Question 5**

Where were Ottoman Turkish languages spoken in the past?

**Question 6**

What area does Chakavia cover after the Ottoman and Turkish conquests of the Balkans?

**Question 7**

Which language is spoken in the Balkans, where non-literary dialects are spoken?

**Text number 11**

Enisa Kafadar argues that there is only one language of Serbo-Croatian, with several variants. This has made it possible to include all four varieties in the new grammar book. Daniel Bunčić argues that it is a multilingual language with four standard varieties spoken in Serbia, Croatia, Montenegro and Bosnia and Herzegovina. The mutual intelligibility of their speakers 'exceeds that of the standard variants of English, French, German or Spanish'. Other linguists have argued that the differences between Serbo-Croatian variants are not as significant as the differences between English, German, Dutch and Hindi-Urdu variants.

**Question 0**

How many standard varieties of Serbo-Croatian are spoken?

**Question 1**

In which regions are the four standard forms of Serbo-Croatian spoken?

**Question 2**

Who concluded that Serbo-Croatian is a multilingual language?

**Question 3**

Who believes that Serbo-Croatian is one language with several variants?

**Question 4**

What do the Dutch say about language?

**Question 5**

What is the Hindi-Ugric conclusion about the Serbo-Croat language?

**Question 6**

How many varieties of Enisa Kafadar aruge are in Hindi-Urdu?

**Question 7**

What is included in the new polycentric language?

**Question 8**

Where are the four varieties of English spoken?

**Text number 12**

The majority opinion among Croatian linguists is that there has never been a Serbo-Croatian language, but two different standard languages that have sometimes overlapped in the course of history. However, Croatian linguist Snježana Kordić has led the academic debate on this issue in the Croatian journal Književna republika between 2001 and 2010. In the debate, she shows that linguistic criteria such as mutual intelligibility, the huge overlap in the language system and the same dialectal basis of the standard language prove that Croatian, Serbian, Bosnian and Montenegrin are the four national variants of the polycentric Serbo-Croatian language. Igor Mandić says: "In the last ten years, it has been the longest, most serious and poignant debate (...) in the Croatian culture of the 21st century". Inspired by this debate, a monograph on language and nationalism has been published.

**Question 0**

Is there a majority or minority view that two different standard languages existed and that they overlapped at some point in history?

**Question 1**

Who has stated that the debate between the pluricentric or dual-standard classification has been "the longest, most serious and sharpest debate in 21st century Croatian culture"?

**Question 2**

Which Croatian linguist agrees with Igor Mandic that Serbo-Croatian is a multilingual language?

**Question 3**

What does the Croatian magazine Knjizevna repulika think about the Serban and Croatian language?

**Question 4**

Which criterion makes Mandik one of the four language variants?

**Question 5**

How long has the language debate lasted, according to Snjezana Kordic?

**Question 6**

What has been published on the basis of mutual intelligibility?

**Question 7**

What is the opinion of most Bosnian linguists?

**Text number 13**

Before the 19th century, the language of Dalmatian and Dubrovnik writers was only distinguished from Italian or Slavic speakers, as these were the two main ethnic groups inhabiting the Dalmatian city-states at the time. Whether one spoke Croatian or Serbian was not an important distinction at the time, as most speakers did not distinguish between the two languages. This has been used to justify the claim that Croatian literature is Croatian per se, but also includes Serbian and other languages belonging to Serbo-Croatian, These facts undermine the claim of Croatian language advocates that the modern Croatian language is based on a language called Old Croatian.

**Question 0**

Which language groups lived in the Dalmatian city-states before the 19th century?

**Question 1**

Which language has its roots in modern Croatian?

**Question 2**

Why did it not matter before the 19th century whether a person spoke Croatian or Serbian?

**Question 3**

What language is the modern Dalmatian language based on?

**Question 4**

What distinguished Croatian literary writers before the 19th century?

**Question 5**

Where did Croats and Serbs live before the 1800s?

**Question 6**

Which two city-states were not distinguished by most speakers before the 9th century?

**Question 7**

What is undermined by the facts about Dalmatia and Dubrovnik?

**Text number 14**

However, most Dalmatian intellectuals and writers who used the Štokavian dialect and practised the Catholic faith considered themselves part of the Croatian people as early as the mid-16th and 17th centuries, some 300 years before the appearance of the Serbo-Croat ideology. They were loyal first and foremost to Catholic Christianity, but when they recognised their ethnic identity they called themselves 'Slovin' and 'Illyrian' (a kind of precursor to Catholic Baroque Pan-Slavism) and Croat - these 30 or so writers over a period of some 350 years always saw themselves first as Croats and never as part of the Serbian people. It is also worth noting that in the pre-Catholic era, the Catholic religious orientation did not necessarily correspond to the ethnic identity of Croats in Dalmatia. Ivan Broz, a Croatian supporter of Vuk Karadžić, noted that Dalmatian identification as a Serb was considered as alien as identification as a Macedonian or Greek. Vatroslav Jagić noted in 1864:

**Question 0**

To which group of people of the Catholic faith did they primarily refer?

**Question 1**

Given their religion, did people of the Catholic religion consider themselves Serbs or Croats?

**Question 2**

Ivan Broz said that a Dalmatian identifying as Serb was as foreign as which other two ethnic groups?

**Question 3**

Where did most Catholic Croatians see themselves as belonging?

**Question 4**

To which group were Macedonians first loyal?

**Question 5**

How did 30 Serbs see themselves over 350 years?

**Question 6**

What did most intellectuals and writers say about Dalmations?

**Question 7**

Why was the ideology of the Serbo-Croats in Dalmatia not as big as that of the Serbo-Croats?

**Text number 15**

The luxurious and ornate representative texts of the Serbo-Croatian Church Slavonic belong to a later period, when they coexisted with Serbo-Croatian vernacular literature. The most notable are the 'Duke Novak's Missal' (1368) from the Lika region of north-west Croatia, the 'Gospel of Reims' (1395, named after the city of its final destination), the Hrvo's Missal from Bosnia and Split in Dalmatia (1404) and the first printed book in Serbo-Croatian, the Glagolitic Missale Romanum Glagolitice (1483).

**Question 0**

What was the first book published in Serbo-Croatian?

**Question 1**

What was the "Evangel from Reims" named after?

**Question 2**

What year was the first book in Serbo-Croatian printed?

**Question 3**

From which region does the Glagolitic Missale Romanum Glagolitice originate?

**Question 4**

What were the Bosnian Church Slavs living alongside?

**Question 5**

Where did the luxurious and ornate texts of the Gospel of Reims belong?

**Question 6**

What year was the first printed book in Lika?

**Question 7**

What city was the Duke of Novak's missal named after?

**Text number 16**

In 1954, prominent Serbian and Croatian writers, linguists and literary critics, supported by Matica Srpska and Matica Hrvatska, signed the Novi Sad Pact, the first conclusion of which stated that "Serbs, Croats and Montenegrins share a single language with two equal variants, which have developed around Zagreb (western) and Belgrade (eastern)". The agreement called for equal status for the Cyrillic and Latin scripts and for the pronunciations of Ecaavian and Ijekavian. The agreement also specified that Serbo-Croat should be the name of the language in official contexts, while the traditional Serbian and Croatian languages would be retained in informal language use. Matica hrvatska and Matica srpska jointly drafted a dictionary, and a committee of Serbian and Croatian linguists was asked to draft a pravopis. In the sixties, both books were published simultaneously in Ijekavian Latin in Zagreb and in Ekavian Cyrillic in Novi Sad. Croatian linguists, however, claim that this was a Unitarian act. The evidence supporting this claim is patchy: Croatian linguist Stjepan Babić complained that the Latin alphabet was always used in Belgrade television broadcasts - which was true, but this was not evidence of unequal rights, but of frequency of use and prestige. Babić also complained that the Novi Sad dictionary (1967) listed next to each other the words of both Croatian and Serbian variants whenever they differed, which could be taken as evidence of a careful respect for both variants and not of unitarism. In addition, the Croatian linguists criticised the parts of the dictionary written by Croatian linguists for being unitaristic. Finally, the Croatian linguists ignored the fact that the material in Pravopisni rječnik came from the Croatian Philological Society. Despite these facts, in 1967 Croatian intellectuals issued a declaration on the status and name of the Croatian written language. On the occasion of the 45th anniversary of its publication, the Croatian weekly Forum republished the declaration in 2012 with a critical analysis.

**Question 0**

What agreement was signed in 1954 by writers, linguists and literary critics?

**Question 1**

What was the principle behind the Novi Sad agreement?

**Question 2**

Who was given the task of producing the dictionary in the Novi Sad agreement?

**Question 3**

What did Serbian writers and linguists sign in 1967?

**Question 4**

What was the outcome of the agreement supported by Matica srpska and Matikca hrvatska in 2012?

**Question 5**

What was required to use the Latin alphabet?

**Question 6**

What is the name of the dictionary in official contexts?

**Question 7**

How many books were published in 1967 at the same time?

**Text number 17**

In addition, as in most Slavic languages, the Shtokaavi verb has two aspects: perfect or imperfect. Most verbs are paired, and the imperfective verb is formed from the imperfective verb by adding a prefix or changing the body of the verb. The imperfective aspect typically indicates that the action is in progress, in progress or repeated, while the perfective aspect typically indicates that the action is finished, immediate or of limited duration. Some Štokavian tenses (namely aorist and imperfect) favour a particular aspect (but they are less frequent or absent in Čakavian and Kajkavian). In fact, aspects 'compensate' for the relative lack of tenses, since the aspect of a verb determines whether an action is completed or ongoing in the time frame referred to.

**Question 0**

Which time format indicates that the activity has not yet ended?

**Question 1**

What are the two states of shtoka verbs?

**Question 2**

When is the aspect from the perspective of the verb used?

**Question 3**

What are the two aspects of the verb Kajkavian?

**Question 4**

What prefixes are usually used?

**Question 5**

Where is the stock change created from?

**Question 6**

What do some shtoka verbs favour?

**Question 7**

What are the temporary measures replacing?

**Text number 18**

Jat-reflection rules are not without exception. For example, when the short jat is preceded by r, it evolves in most Ijekavian dialects into /re/ or sometimes /ri/. The prefix prě- ("trans-, over-") evolved as long pre- in Eastern Ijekavian dialects to pre-, but in Western dialects to prije-; in Ijekavian pronunciation it also evolved to pre- or prije-, because it was possibly ambiguous with pri- ("to approach, come near"). For verbs with -ěti in the infinitive, the past participle ending -ěl evolved into -io in Ijekavian Neo-Kavian.

**Question 0**

Where did the end -not- evolve in Ijekavian neostokavian?

**Question 1**

What is the Western equivalent of the prefix "pre"?

**Question 2**

Why did pre or prije evolve instead of the symbolized "pre"?

**Question 3**

What does "pri" mean?

**Question 4**

How did the short jat preceded by r evolve in Western dialects?

**Question 5**

What are the rules of the past participle are not without?

**Question 6**

In the Western Neo-Cavian dialects, what did the pre-prefix become when it was long?

**Question 7**

Where did ri evolve in the pronunciation of ikavans?

**Question 8**

Why did re or ri develop instead of pre?

**Text number 19**

On the other hand, the opinion expressed by Jagić in 1864 is said to be unfounded. When Jagić says "Croat", he refers to a few instances where the Dubrovnik vernacular is referred to as Ilirski (Illyrian). This was a common name for all Slavic vernaculars in Dalmatian towns among the Roman inhabitants. At the same time, other written monuments have been found which mention Srpski, lingua serviana (= Serbian), and some which mention Croatian. By far the most authoritative Serbian scholar on the Dubrovnik language question, Milan Rešetar, who was himself born in Dubrovnik, wrote of the language's characteristics: 'Anyone who thinks that Croatian and Serbian are two separate languages must admit that Dubrovnik has always been (linguistically) Serbian.'

**Question 0**

What was the name given to all the Slavic languages among the Romans?

**Question 1**

Who is considered to be the most qualified Serbian language researcher?

**Question 2**

Where was Milan Resetar born?

**Question 3**

What language does Milan Resetar say Dubrovnik comes from?

**Question 4**

What is not the opinion of the Romans?

**Question 5**

What were all the Croatian vernaculars called by the Romans?

**Question 6**

Where was Jagic born?

**Question 7**

What did the Romans write about Croatia and Serbia?

**Question 8**

Who is the most qualified Croatian linguist?

**Text number 20**

Nationalists have conflicting views on language(s). Croatian nationalists contradictorily claim that they either speak a completely separate language from Serbs and Bosniaks, or that these two peoples have somehow 'borrowed' their standard language from them because of the Croats' longer lexicographical tradition.[citation needed] Bosniak nationalists claim that both Croats and Serbs have "appropriated" the Bosnian language because Ljudevit Gaj and Vuk Karadžić favoured the widely spoken Neo-Kavian-Jejekavian dialect in Bosnia and Herzegovina as the basis for language standardisation, while Serb nationalists either claim that all language differences are artificial, or claim that the Štokavian dialect is theirs and that of the Čakavian Croats - in more extreme formulations, the Croats have 'taken' or 'stolen' their language from the Serbs.[citation needed]

**Question 0**

What do Croatian nationalists think about the language issue?

**Question 1**

What language did Ljudevit Gaj and Vuk Karadzic prefer to use?

**Question 2**

Where is the Neostokavian-Jekavian language mainly spoken?

**Question 3**

How do Serbian nationalists feel about Croats using their language?

**Question 4**

What do Bosnians have conflicting views on?

**Question 5**

Who claims that the Stokavian dialect has taken over the Bosnian language?

**Question 6**

What do the Croats of Kakavia claim about the difference in languages?

**Question 7**

What do Bosnians claim about language in extreme formulations?

**Question 8**

What do Neo-Cossack nationalists think Serbs and Bosnians are?

**Text number 21**

In Serbia, Serbian is the official language, while in Vojvodina province both Serbian and Croatian are official languages. There is a large Bosniak minority in the south-western part of Sandžak, but the "official recognition" of Bosnian is questionable. Bosnian is an optional course in the 1st and 2nd grades of primary school and is also officially used in the municipality of Novi Pazar. However, its nomenclature is controversial, as there are incentives to call it "Bosnian" (bošnjački) rather than "Bosnian" (bosanski) (see more on Bosnian).

**Question 0**

In which province are Serbian and Croatian official languages?

**Question 1**

Which language should be referred to instead of "Bosnian"?

**Question 2**

At which primary school levels is Bosnian an optional course?

**Question 3**

Which languages are official in Sanzaki?

**Question 4**

Where is the large Serb minority located?

**Question 5**

What is controversial in the 1st and 2nd grades of primary school.

**Question 6**

What is considered controversial in Novi Pazar?

**Question 7**

Which Novi Pazar should be referred to instead of "Bosnian"?

**Document number 324**

**Text number 0**

At 6.00am on 9 October 2006, the network switched to a 24-hour schedule, becoming one of the last major English-language broadcasters to do so. Most CBC-owned stations had previously stopped broadcasting in the early morning (usually between 1 a.m. and 6 a.m.) Instead of the CBC News Network's simulcast of most commercial programming on private stations or the BBC News Channel's nightly simulcast of BBC One-style simulcast of the BBC News Channel, CBC uses this time to broadcast repeats, including local news, prime-time series, movies and other CBC library programming. Its French counterpart, Ici Radio-Canada Télé, continues to tune in every night.

**Question 0**

Was CBC one of the first or last stations to introduce a 24-hour timetable?

**Question 1**

When have stations stopped broadcasting in the past?

**Question 2**

What did private stations broadcast when programmes were not flagged?

**Question 3**

What does the CBC use the unallocated airtime for?

**Question 4**

Which French station has refused to introduce a 24-hour timetable?

**Question 5**

When did the CBC start broadcasting its programmes online?

**Question 6**

During what period of time did the FCC once require broadcasters to sign a broadcast ban?

**Question 7**

Polls show that viewers prefer 24-hour stations to broadcast what type of content?

**Question 8**

What popular news channel inspired the CBC News Network?

**Question 9**

Which French news station is the biggest competitor to CBC News?

**Text number 1**

Until 1998, the network carried a variety of American programming in addition to its core Canadian programming, in direct competition with Canadian commercial broadcasters such as CTV and Global. Since then, it has been limited to Canadian programmes, a few British programmes and a few American films and off-network reruns. Since this change, the CBC has sometimes had difficulty in maintaining audience levels comparable to those achieved before 1995, although it has slightly improved its ratings in recent years. In 2007-08, hit series such as Little Mosque on the Prairie and The Border helped the CBC achieve its best ratings in more than half a decade.

**Question 0**

In what year did the network stop showing American programmes?

**Question 1**

Which recent (2007-2008) programmes helped the web regain its popularity?

**Question 2**

What foreign programmes will CBC show after 1998?

**Question 3**

With which two private Canadian broadcasters did the CBC merge?

**Question 4**

Which two controversial programs brought down the CBC's ratings?

**Question 5**

What kind of programmes can be broadcast in Canada?

**Question 6**

How long has the CBC maintained its lead over other broadcast networks?

**Text number 2**

Under the current arrangement between CBC and Rogers Communications for the National Hockey League broadcast rights, Hockey Night in Canada broadcasts from CBC-owned stations and affiliates are not technically broadcast over the CBC Television network, but over a separate timeshare network operated by Rogers and licensed by the CRTC. The CRTC required this because Rogers exercises editorial control and sells all advertising time during the HNIC broadcasts, even though CBC's fault and other CBC Television programs' commercials appear throughout the HNIC broadcasts.

**Question 0**

Which company owns the rights to the National Hockey League?

**Question 1**

Where are HNIC affiliates posted?

**Question 2**

Where are HNIC transmissions broadcast?

**Question 3**

What company did the CBC buy to broadcast the National Hockey League?

**Question 4**

What is the most popular programme broadcast on CBC television networks?

**Question 5**

Why was it necessary for CBC to buy Rogers Communication?

**Question 6**

The CRTC has restricted CBC commercials and other CBC television programming from appearing during which broadcast?

**Text number 3**

CBC's flagship newscast, The National, airs Sunday through Friday at 10 p.m. EST and Saturdays at 6 p.m. EST. Until October 2006, CBC-owned and operated stations aired the second broadcast of the program at 11 p.m. EST. This later broadcast contained only the main news segment of the program, but not the analysis and documentary segments. This second broadcast was later replaced by another programme and, from 2012-13, was replaced in the CBC's major markets by a half-hour late news broadcast. In addition, late Saturday evenings are at most a short news update. During the hockey season, this update is usually during the first intermission of the second game of Hockey Night in Canada.

**Question 0**

What was left out of The National's 23.00 broadcast?

**Question 1**

What is the CBC's flagship news programme?

**Question 2**

When did the CBC end its late-night coverage of The National?

**Question 3**

When during the hockey season is there a late night news update?

**Question 4**

Why did the CBC cancel The National at 23.00?

**Question 5**

When was the first episode of The National aired?

**Question 6**

During which television season did the CBC begin broadcasting Hockey Night In Canada?

**Question 7**

The CBC has stated that news broadcasts should not take more time than this event?

**Text number 4**

In addition to the late local news broadcasts mentioned above, CBC stations in most markets fill the early evenings with local news, usually from 5:00 to 6:30 pm, and most stations also broadcast one local newscast on weekend evenings (consisting of dinner on Saturdays and a late night newscast on Sundays). Other newscasts include segments of CBC News Now, which are broadcast weekdays at 6.00am and 12.00pm. The weekly news magazine the fifth estate is also a mainstay of the CBC, as are documentary series such as Doc Zone.

**Question 0**

What times are usually reserved for local news broadcasts?

**Question 1**

When do most other stations watch their local news?

**Question 2**

When is CBC News Now broadcast?

**Question 3**

Consumers have complained that CBC stations tend to fill the early evenings with what kind of programming?

**Question 4**

Which popular CBC news programme has won awards for its news coverage?

**Question 5**

Which documentary series did the CBC recently acquire the rights to in order to boost its ratings?

**Question 6**

Which weekly news magazine has been on the air since the CBC station was set up?

**Text number 5**

One of CBC Television's most popular programs is the weekly Saturday night NHL hockey broadcast, Hockey Night in Canada. The network has been broadcasting it since 1952. During the NHL lockout and the subsequent cancellation of the 2004-2005 hockey season, CBC instead aired a variety of recent and classic movies on Saturday nights under the name Movie Night in Canada. Many cultural groups criticized this and suggested that CBC broadcast games from minor hockey leagues; CBC responded that most such broadcast rights were already held by other groups, but it based each Movie Night broadcast on a different Canadian hockey venue. In addition to hockey, CBC's sports properties include Toronto Raptors basketball, Toronto FC Soccer and a number of other amateur and professional events.

**Question 0**

In what year did HNIC begin broadcasting on the CBC?

**Question 1**

What did CBC broadcast during the NHL lockout?

**Question 2**

Why did the CBC call film screenings during the NHL lockout?

**Question 3**

On what nights does the CBC usually reserve broadcasts for hockey?

**Question 4**

Which popular programme has been broadcast on the CBC since its inception in 1952?

**Question 5**

In which season did the NHL ban the CBC from access to hockey games?

**Question 6**

CBC lost sponsorship when it refused to show what games?

**Question 7**

When the film Night in Canada was not successful, what other sports rights did the CBC acquire?

**Text number 6**

It was also the exclusive organiser of Canadian Curling Association events in 2004-2005. Due to disappointing results and outraged fans that many of the draws were televised on CBC Country Canada (now Cottage Life Television), the association sought to cancel its multi-year contract with CBC, which was signed in 2004. After CBC threatened legal action, the two parties eventually reached an agreement whereby the rights to the early rounds were transferred to TSN. On 15 June 2006, the CCA announced that TSN would have exclusive rights to curling in Canada from 2008-09, which excluded the CBC from the championship weekend for the first time in over 40 years.

**Question 0**

What other sport was the CBC the sole practitioner of in 2004-2005?

**Question 1**

What is the current name of CBC Country Canada?

**Question 2**

Who became the new exclusive curling broadcaster for the 2008-2009 season?

**Question 3**

On what day was it announced that the CBC had lost its exclusive curling broadcasting rights?

**Question 4**

Which popular Canadian sporting event overtook hockey in 2004-2005?

**Question 5**

Which network did the CBC set up in the hope of keeping its contract with the curling federation?

**Question 6**

After numerous legal battles, the CBC agreed to transfer the exclusive rights to curling events to which broadcaster?

**Question 7**

The 2008-2009 curling championships led to the highest attendance in how many years?

**Text number 7**

Many were surprised by these changes to the CBC schedule, which were apparently intended to attract a younger audience to the network; some felt they might alienate core CBC viewers. There was also criticism of the network's decision to move The National in some time zones to allow it to broadcast the American version of The One during the summer. This later proved unnecessary, as The One was taken off the air after two weeks of very low American and Canadian ratings, and the newscast returned to its normal schedule.

**Question 0**

Which American news programme was taken off the air just two weeks after the CBC started showing it?

**Question 1**

Why did the CBC move The National in some areas?

**Question 2**

Why did the CBC make significant changes to its broadcasting?

**Question 3**

The CDC decided to model its news programme on which American programme?

**Question 4**

What was the problem that caused The National to be taken off the air?

**Question 5**

The CCA was concerned that the schedule changes would cause what problems?

**Question 6**

Twice a year the CBC retains new talent, for what purpose?

**Text number 8**

Since 2005, CBC has been involved in the production of the BBC Wales Doctor Who remake, receiving a special credit at the end of each episode. This arrangement continued until the end of the fourth season broadcast in 2008. CBC also contributed to the financing of the first season of the Torchwood spin-off series. More recently, the channel has also begun acquiring Canadian rights to some Australian series, including the drama series Janet King and Love Child, and the comedy-drama series Please Like Me.

**Question 0**

What year did the CBC start funding Doctor Who?

**Question 1**

When did the CBC stop showing Doctor Who?

**Question 2**

Which Doctor Who spin-off did CBC take part in?

**Question 3**

Which Australian series is the CBC interested in?

**Question 4**

What was the most popular CBC programme in 2005?

**Question 5**

Which Doctor Who spin-off lasted only two seasons?

**Question 6**

In what year did the BBC stop giving the CBC special credit for Doctor Who programmes?

**Question 7**

Which series are currently very popular Australian dramas in Canada?

**Text number 9**

On March 5, 2005, CBC Television began broadcasting in high definition on its Toronto (CBLT-DT) and Montreal (CBMT-DT) stations. Since then, the channel has also launched high definition simulcasts in Vancouver (CBUT-DT), Ottawa (CBOT-DT), Edmonton (CBXT-DT), Calgary (CBRT-DT), Halifax (CBHT-DT), Windsor (CBET-DT), Winnipeg (CBWT-DT) and St. John's (CBNT-DT). CBC HD is available nationwide via satellite and digital cable, and free with an antenna dish and digital tuner (included with most new TVs) on the following channels:

**Question 0**

Which stations broadcast CBC in HD in 2005?

**Question 1**

Where is CBC available for free?

**Question 2**

What is required to watch broadcasts?

**Question 3**

CBC television had to fight the CCA to launch its station in which two cities in 2005?

**Question 4**

One of CBC's advantages over its competitors is the ability to broadcast here in British Columbia?

**Question 5**

The CCA would not allow the CBC to broadcast unless they allowed such viewing?

**Question 6**

What has helped make the CBC the most popular station in Canada?

**Text number 10**

Most CBC television stations, including those in major cities, are owned and operated by CBC. CBC's O&O stations operate mostly as a seamless nationwide service with little deviation from the main channel schedule, although regional variations do occur from time to time. Most CBC stations use the CBC brand instead of their call letters as their broadcast identifier, and only identify themselves once they have signed on or off (some, like Toronto's CBLT, do not identify themselves at all, except through PSIP). All CBC O&O stations have a standard call letter with the first two letters "CB" (an ITU prefix not assigned to Canada but to Chile) and the last letter "T". Only the third letter varies from market to market; however, this letter is generally the same as the third letter on CBC Radio One and CBC Radio 2 stations in the same market. The exceptions to this rule are the CBC North stations in Yellowknife, Whitehorse and Iqaluit, whose call signs begin with the letter 'CF' because they have historically been part of the CBC's frontier package before the advent of microwave and satellite broadcasting.

**Question 0**

Which station does not identify itself by its call letters?

**Question 1**

Who owns and operates most of the CBC television stations?

**Question 2**

What are the first two letters of almost all CBC stations?

**Question 3**

What is the last letter of almost all CBC stations?

**Question 4**

Which stations break convention and start with "CF" instead of "CB"?

**Question 5**

CBC does not allow call letter identification with which position?

**Question 6**

CBC receives most of its funding from this source?

**Question 7**

The CBC offered radio broadcasting only in its northern regions before what?

**Question 8**

To join the CBC's transmission network, owners and operators change their call letters to comply with this rule?

**Text number 11**

Some stations broadcasting from smaller cities are private subsidiaries of the CBC, stations owned by commercial broadcasters, but whose programming consists mainly of CBC programmes. Such stations generally follow the CBC schedule and broadcast a minimum of 40 hours per week of network programming. However, they may abandon some CBC programming and broadcast locally produced programming, syndicated series or programming purchased from other broadcasters, such as CTV Two, that do not have a broadcast outlet in the same market. In these cases, the CBC programming to be displaced may be broadcast at a different time than the network programming, or may not be broadcast at all on the station in question. Most private affiliates generally exclude CBC afternoon programming and Thursday evening arts programming. Private affiliates continue to broadcast The National at 10 p.m. as a core part of CBC programming, but usually exclude the 11 p.m. rerun (which is no longer broadcast). Most private affiliates produce their own local newscasts of at least 35 minutes. Some private affiliates have begun to add CBC nightly programming to their schedules since the network began broadcasting 24 hours a day.

**Question 0**

What are private subsidiaries?

**Question 1**

What is the minimum number of hours per week of online programming on CBC's private affiliates?

**Question 2**

What kind of shipments do affiliates usually send?

**Question 3**

Much of the CBC's revenue comes not from advertising, but from other stations known as what?

**Question 4**

How many hours a week does the CBC try to devote to broadcasting?

**Question 5**

CBC terminates contracts when private affiliates decide what programmes to broadcast?

**Question 6**

What time is CBC's private news usually broadcast?

**Question 7**

The CBC contract requires all affiliates to broadcast how many hours a day?

**Text number 12**

Private CBC subsidiaries are not as common as they used to be, as many of these stations have been acquired either by CBC itself or by Canwest Global or CHUM Limited, which have become stations of E! or Channel A (later A, now CTV Two). One private CBC affiliate, Kelowna's CHBC-TV, joined E! (then known as CH) on February 27, 2006. When a private CBC affiliate rejoins another network, CBC has generally added a retransmitter to the nearest O&O station to ensure that CBC service continues. As a result of the agreement between CHBC and CFJC-TV in Kamloops, CFJC also disconnected from CBC on February 27, 2006, but no retransmitters were installed in the licensed area. The former private CBC subsidiaries CKPG-TV Prince George and CHAT-TV Medicine Hat separated on 31 August 2008 and joined E!, but CBC announced that it would not add any new retransmitters in these areas. Otherwise, CFJC, CKPG and CHAT are all owned by an independent media company, the Jim Pattison Group. With the closure of E! and other changes in the media landscape, several former CBC subsidiaries have since merged with City or Global or ceased operations altogether.

**Question 0**

Which CBC subsidiary joined E! in February 2006?

**Question 1**

Which subsidiary left CBC because of the agreement with CHBC?

**Question 2**

Which two subsidiaries joined E! at the end of August 2008, after which the transmitters were not changed?

**Question 3**

Who owns CJFC, CHAT and CKPG?

**Question 4**

The CBC is losing influence to which broadcasting groups?

**Question 5**

On what day in 2006 did CBC lose a large part of its private subsidiaries to CHBC?

**Question 6**

CHBC is the only broadcaster licensed in British Columbia after the CBC had a disagreement with the CRTC over which station?

**Question 7**

Which independent media company has tried to merge with the CBC?

**Question 8**

What is the CBC's biggest challenge in retaining viewers?

**Text number 13**

According to notifications made by Thunder Bay Electronics (owner of CBC's Thunder Bay subsidiary CKPR-DT) and Bell Media (owner of CBC's subsidiaries CFTK-TV in Terass and CJDC-TV in Dawson Creek) to the Canadian Radio-television and Telecommunications Commission (CRTC), CBC informed them that it would not continue to work with any of its private subsidiaries after 31 August 2011. Incidentally, this was also the date of the switchover from analogue to digital broadcasting in Canada. Given recent practices and the CBC's decision not to convert any retransmitters to digital, even in markets with hundreds or thousands of residents, it is not expected that the CBC will open new stations to replace its affiliates, but may even reduce its existing network. However, in March 2011, CKPR announced that it had signed a programming agreement with the CBC under which the station will continue to provide CBC programming in Thunder Bay for five years. On March 16, 2012, Astral Media announced the sale of its assets to Bell Media, which owns CTV and CTV Two, for $3.38 billion, and CFTK and CJDC were included in the deal. Whether the stations will remain subsidiaries of CBC or will become owned and operated by CTV or CTV Two following the completion of the merger has not yet been determined.

**Question 0**

When did Canada switch from analogue to digital broadcasting?

**Question 1**

What did the CBC announce on 31 August 2011?

**Question 2**

In March 2011, CBC and CKPR agreed to continue working together for how many more years?

**Question 3**

Who bought CFTK and CJDC in March 2012?

**Question 4**

The CBC cited the fact that it did not want to pay for the switch from analogue to digital as the reason for this?

**Question 5**

The CBC's refusal meant that hundreds of thousands of people would not receive television broadcasts after what date?

**Question 6**

CRTC asked CBC to negotiate with this station to extend the contract?

**Question 7**

For how much did CTV and CTV2 buy Bell Media in 2012?

**Text number 14**

CBC television stations are received in many U.S. communities along the Canadian border and have a significant audience in these areas. This phenomenon can also occur in Great Lakes communities such as Ashtabula, Ohio, which received programming from the CBC's London, Ontario transmitter station based on atmospheric conditions above Lake Erie. In September 2010, the CBC closed its analog transmitter and decided not to replace it with a digital transmitter. As a result, there is now a huge gap in CBC broadcasting in southwestern Ontario. Both CBC-Toronton and CBC-Windsor are both more than 100 miles from London, ON, and are out of range of even the largest antennas.

**Question 0**

When did the CBC shut down its analogue transmitter?

**Question 1**

Which CBC site's coverage has lapsed since 2010?

**Question 2**

Which US city can receive broadcasts from the CBC London transmitter?

**Question 3**

Where in the United States do CBC programmes have the largest audience?

**Question 4**

Why has the CBC's audience declined since September 2010?

**Question 5**

Economic conditions and social inequality have led the CBC to ignore this problem?

**Question 6**

What is the maximum distance a city can be from a transmission antenna?

**Text number 15**

CBC's sports programming has also gained large viewership in frontier markets, including coverage of the NHL Stanley Cup playoffs, which was widely regarded as more comprehensive and consistent than coverage by other networks such as NBC. CBC's coverage of the Olympics also reached a significant audience in border markets, largely due to the fact that CBC broadcast more events live than NBC, which has been criticized in recent years for delaying events to prime time, even when the event would take place in Pacific time zone markets in East Coast prime time (thus delaying the event to West Coast prime time).

**Question 0**

Why is CBC better than other networks in the US?

**Question 1**

Did CBC broadcast more or less live Olympic events than NBC?

**Question 2**

Why was NBC criticised for its coverage of the Olympics?

**Question 3**

Is this why people prefer CBS sports?

**Question 4**

CBC has a lot of competition from which American network?

**Question 5**

It is difficult to find a broadcasting network that does not engage in this practice?

**Question 6**

NBC allowed Canadian border towns to watch these games?

**Text number 16**

While other Canadian broadcasters converted the majority of their transmitters to digital by the deadline of August 31, 2011, CBC converted only about half of its analogue transmitters in the mandatory areas to digital (15 out of 28 markets with CBC Television stations and 14 out of 28 markets with Télévision de Radio-Canada stations). Due to the financial difficulties reported by the company, the company published a digital switchover plan according to which none of its analogue retransmitters in the mandatory markets were to be converted to digital by the deadline. Under this plan, entities receiving analogue signals via retransmission stations in the mandatory market would lose their transmission signals by the deadline. The retransmitters account for 23 of the 48 transmitters in the compulsory market for the CBC and Radio-Canada. The compulsory markets in which both the CBC and Radio-Canada will lose their signals are London, Ontario (a metropolitan area of 457 000 inhabitants) and Saskatoon, Saskatchewan (a metropolitan area of 257 000 inhabitants). In both of these markets, CBC's television transmitters are the only ones that were not scheduled to be converted to digital by the deadline.

**Question 0**

What was the deadline for converting analogue broadcasts to digital?

**Question 1**

How many of the CBC mandatory transmitters were upgraded before the deadline?

**Question 2**

Which two major metropolitan areas lost CBC and Radio-Canada broadcasts?

**Question 3**

CBC asked to change what was the original deadline for the switchover from digital to analogue broadcasting?

**Question 4**

The CBC was holding elaborate fundraisers when it realized it didn't have the funds to send what percentage of its broadcasts?

**Question 5**

The CRTC indicated which two cities' populations were no longer viable for their operations, and recommended that broadcasting be discontinued?

**Question 6**

How many Canadian broadcasters were among the other Canadian broadcasters?

**Text number 17**

Since retransmission transmitters were not to be converted to digital, many markets were losing coverage of the CBC or Radio-Canada or both. As a result, only seven markets where the transition period ended on August 31, 2011 were scheduled to have both CBC and Radio-Canada digital transmissions, and 13 other markets were scheduled to have either CBC or Radio-Canada digital transmissions. In mid-August 2011, the CRTC granted the CBC an extension until August 31, 2012 to continue to operate its analogue transmitters in the markets subject to the transition period of August 31, 2011. This CRTC decision prevented many markets covered by the transition period from losing CBC or Radio-Canada signals, or both, at the end of the transition period. By the end of the transition period, Barrie, Ontario, lost both CBC and Radio-Canada signals because the CBC did not request the CRTC to allow these transmitters to continue operating.

**Question 0**

When was the extension period for the CBC anology upgrade due to end?

**Question 1**

Which region completely lost its transmission by the deadline?

**Question 2**

Did Barrie, Ontario, lose CBC, Radio-Canada or both?

**Question 3**

How many transmitters did the CRTC buy to convert them to digital?

**Question 4**

What did the CRTC award the CRTC for total loss of service?

**Question 5**

Which Canadian city set up a new network after losing coverage of the CBC and Radio-Canada?

**Question 6**

The CRTC realized that the CBC's monopoly had to be dismantled after it extended the deadline to prevent what?

**Text number 18**

In markets where a digital transmitter was installed, the current coverage areas may not have been maintained. For example, the CBC introduced a digital transmitter covering Fredericton, New Brunswick, to replace its digital transmitter covering Saint John, New Brunswick and Fredericton, and decided to maintain its analogue service in Saint John. According to the CBC's application to the CRTC for this transmitter, the digital transmitter would serve a population of 113 930, compared to 303 465 for the existing analogue transmitter. When Vancouver's analogue transmitters were replaced by digital ones, the north-eastern parts of Victoria's metropolitan area (330 000 inhabitants) would be able to receive the CBC or Radio-Canada.

**Question 0**

How many people did CBC's application say it would serve with digital transmitters?

**Question 1**

How many people had access to an analogue transmitter before the upgrade?

**Question 2**

In which parts of Victoria were CBC and Radio-Canada available?

**Question 3**

Did the CBC lose customers because it did this?

**Question 4**

The CBC provided false information on analogue and digital transmission, stating that coverage would change from which figures?

**Question 5**

The CRTC recommended the continuation of analogue broadcasting in what area?

**Question 6**

In which region of Victoria was the CBC replaced by Radio-Canada?

**Text number 19**

On April 4, 2012, the CBC announced that it will close all of its approximately 620 analogue television transmitters on July 31, 2012, and will not install digital transmitters to replace them, reducing the total number of its television transmitters across the country to 27. According to the CBC, this would reduce the company's annual costs by $10 million. Plans to use subchannels to carry both the CBC and Radio-Canada signals in markets where the company has one digital transmitter have not been announced. In fact, in its CRTC application to close all of its analogue television transmitters, the CBC stated that it opposed the use of subchannels on the grounds of, inter alia, cost.

**Question 0**

How many transmitters does the CBC currently use after 2012?

**Question 1**

When did the CBC announce that it would stop using analogue transmitters?

**Question 2**

How much did the CBC say it would save by ending analogue?

**Question 3**

CBC's annual operating expenses were recorded at this amount?

**Question 4**

The CRTC has limited the CBC to how many digital transmitters it can use?

**Question 5**

Unable to meet the conversion deadline, the CRTC took over how many of the CBC's analogue transmitters?

**Question 6**

CRTC encouraged to use them to maintain transmission signals?

**Question 7**

CBC decided to end all digital and analogue broadcasting on this day?

**Text number 20**

On August 6, 2010, CBC issued a press release announcing that, for economic reasons, CBC and Radio-Canada would be switching to a total of only 27 transmitters, one in each market in which there was an originating station (i.e., a CBC or Radio-Canada television station in that market). In addition, CBC stated in the release that only 15 of the transmitters would be in operation by 31 August 2011 due to insufficient funds being available, and that the remainder would not be on the air until 31 August 2012. In addition, the CBC stated in the release that it would request the CRTC to allow it to continue analogue transmissions until the transmitters in the transition phase were operational. At the time of the press release, only eight of the company's transmitters (four CBC and four Radio Canada) were transmitting digitally.

**Question 0**

How many transmitters did the CBC plan to upgrade before August 2011?

**Question 1**

Why did the CBC consider that the updates were delayed?

**Question 2**

How many transmitters did CBC plan to upgrade in total?

**Question 3**

On what date did the CBC make a statement about the sale of its assets?

**Question 4**

The CRTC agreed to help the CBC install how many transmitters by August 31, 2011?

**Question 5**

How many stations did the CBC have analogue transmissions in 2012?

**Question 6**

Why did the CRTC assist the CBC in the transition?

**Text number 21**

On November 30, 2010, the CBC's Senior Director of Regulatory Affairs sent a letter to the CRTC regarding the CBC's plans to go digital. The letter states that 'CBC/Radio-Canada will not convert its analogue retransmission stations in the mandatory market to digital after August 31, 2011'. On December 16, 2010, some months after the CRTC issued a bulletin reminding broadcasters that analogue transmitters had to be switched off by the deadline in the mandatory market, the CBC reviewed the documents attached to its August 6, 2010 bulletin and stated that it had the money and that it intended to switch all 27 transmitters by August 31, 2011.

**Question 0**

On what day did the CBC publish an updated announcement stating that it was seeking to upgrade all 27 transmitters?

**Question 1**

By what date did the CBC announce it would seek to upgrade its analogue transmitters?

**Question 2**

Why did the CTRC send a newsletter to broadcasters?

**Question 3**

In November 2010, the senior director of the CRTC issued a letter addressing what concerns?

**Question 4**

On what day was the CRTC planning to take over the CBC?

**Question 5**

The CRTC informed broadcasters that channels would continue broadcasting in a press release in December during which year?

**Question 6**

How many transmitters did the CRTC have to regulate?

**Question 7**

When did the CBC decide to ask for an extension to convert its transmitters?

**Text number 22**

On March 23, 2011, the CRTC rejected CBC's application to install a digital transmitter serving Fredericton, New Brunswick to replace the analogue transmitter serving Fredericton and Saint John, New Brunswick, which would have served only 62.5% of the existing analogue transmitter population. The CBC issued a press release stating that "CBC/Radio-Canada intends to resubmit its application to the CRTC and provide more detailed cost estimates that will allow the Commission to better understand that it is not feasible to replicate the company's current analog broadcasting operations." The press release added that CBC suggests that coverage could be maintained if the CRTC were to allow CBC Television to continue its current analog service - similar to what the Commission recently allowed in the cases of Yellowknife, Whitehorse and Iqaluit. "

**Question 0**

What percentage of the former population would have been served by the new digital transmitter in Fredicton compared to the analogue transmitter system?

**Question 1**

Was CBC's application to build a digital transmitter in Fredricton approved or rejected?

**Question 2**

What did the CBC say to allow broadcasting to continue?

**Question 3**

The CRTC required that all conversions serve at least what percentage of the population?

**Question 4**

The CRTC said it rejected the application because it needed what?

**Question 5**

The CBC was going to take the CRTC to court citing the superiority of this type of news reporting?

**Question 6**

Extreme wilderness forced the CRTC to make exceptions to the rule in which cities?

**Text number 23**

On August 18, 2011, the CRTC issued a decision allowing the analogue retransmission of the CBC's must-carry market analogue broadcasts to continue until August 31, 2012. Prior to that date, the CBC's licence renewal process is scheduled to be completed and the CBC's transition plans to digital transmission will be reviewed as part of that process. All of CBC's full power transmitters operating on channels 52-69 will still have to either move to channels 2-51 or convert to low power. In some cases, the CBC has decided to reduce the power of existing transmitters to low-power transmitters, which results in a loss of signal for some viewers.

**Question 0**

On what day did the CRTC decide to allow CBC broadcast stations to continue operating for another year?

**Question 1**

Where could the CBC channels be moved to in order to continue their activities?

**Question 2**

Which of the CBC channels had to be relocated or reduced in power?

**Question 3**

When did the Court hear the case concerning the 31 August deadline?

**Question 4**

What would the CBC and CRTC agree is a reasonable date to extend the deadline?

**Question 5**

The CRTC noted that the CBC refused to move its operating channels from which stations?

**Question 6**

The CRTC found that the CBC refused to move and cut which channels?

**Text number 24**

On 17 July 2012, the CRTC approved the closure of CBC's analogue transmitters, stating that "while the Commission has the discretion to refuse to revoke broadcasting licences even on application by the licensee, it cannot order CBC or other broadcasters to continue operating their stations and transmitters". On 31 July 2012, at around 23.59 in each time zone, the remaining 620 analogue transmitters were closed down, leaving 27 digital TV transmitters across the country, as well as some transmitters operated by affiliated stations.

**Question 0**

On what date did the CTRC approve the closure of the CBC's analogue transmitters?

**Question 1**

On what day were the CBC's remaining analogue transmitters closed?

**Question 2**

How many analogue transmitters were closed on 31 July 2012?

**Question 3**

When did the CRTC order the closure of analogue transmitters?

**Question 4**

When did the CRTC close 620 analogue transmitters?

**Question 5**

How many transmitters did the CRTC consider it appropriate to leave operational?

**Question 6**

What did the CRTC director regret that he could not do?

**Document number 325**

**Text number 0**

The Appalachian Mountains (i/ˌæpəˈleɪʃᵻn/ or /ˌæpəˈlætʃᵻn/,[note 1] French les Appalaches), often called the Appalachians, are a mountain system in eastern North America. The Appalachians were first formed around 480 million years ago in the Ordovician period, and at one time reached altitudes similar to the Alps and the Rocky Mountains before eroding. The Appalachian chain is a barrier to east-west traffic, forming alternating ridges and valleys that face the east-west road.

**Question 0**

What is the French name for the Appalachian Mountains?

**Question 1**

What are the Appalachian Mountains?

**Question 2**

When did the Appalachian Mountains form?

**Question 3**

In what era were the mountains formed?

**Question 4**

What is often called les Appalaches?

**Question 5**

When were the Rocky Mountains formed?

**Question 6**

What language does the name Alpine come from?

**Question 7**

In between, where do the Alps form a barrier?

**Question 8**

During which period was the Appalachian name given?

**Text number 1**

Definitions vary as to the exact boundaries of Appalachia. The United States Geological Survey (USGS) defines the Appalachian Plateau physiographic region as consisting of thirteen provinces: Atlantic Coastal Highlands, Eastern New England Atlantic, Acadian Highlands, Maritime Plain, Notre Dame and Mégantic Mountains, Western New England Mountains, Piedmont, Blue Ridge, Valley and Ridge, Saint Lawrence Valley, Appalachian Highlands, New England, and Adirondack counties. The general definition does not include the Adirondack Mountains, which geologically belong to the Grenville orogeny and have a different geologic history than the other Appalachians.

**Question 0**

How many provinces are there in the mountains?

**Question 1**

What is one of the provinces?

**Question 2**

Which province is often left out?

**Question 3**

Which mountain ranges have a different geological history?

**Question 4**

How many provinces are there in the Grenville orogeny?

**Question 5**

What is the name of a province that is constant in different definitions?

**Question 6**

What has a similar geological history to the Appalachians?

**Question 7**

What is the name of the organization that leaves out the Adirondack Mountains?

**Question 8**

Which definition of mountains remains constant?

**Text number 2**

The range is mostly in the United States, but also extends into south-eastern Canada, forming a zone 160-480 km wide, extending from Newfoundland Island 2 400 km south-west to central Alabama in the United States.The range includes parts of the islands of Saint Pierre and Miquelon, which are French Overseas Territories. The system is divided into several mountain ranges, with individual mountains averaging about 910 m (3 000 ft) in height. The highest mountain in the group is Mount Mitchell in North Carolina, which at 2 037 m (6 037 ft) is the highest point in the United States east of the Mississippi River.

**Question 0**

Which country does the Appalachian Mountains extend to?

**Question 1**

How big is the zone in Canada?

**Question 2**

Where does it start in Canada?

**Question 3**

Where will it end in the US?

**Question 4**

Which island is included in the selection?

**Question 5**

How big is the mountainous area of the United States?

**Question 6**

What is the height of the lowest mountain range in metres?

**Question 7**

What is the name of the highest point in Canada?

**Question 8**

How long is the range in Saint Pierre and Miquelon?

**Question 9**

How high is the highest point in the United States?

**Text number 3**

The term Appalachian refers to several different areas associated with the mountains. In its broadest sense, it refers to the entire mountain range and its surrounding hills, as well as the divided plains. The term is often used more narrowly to refer to the central and southern regions of the Appalachians, usually including areas in the states of Kentucky, Tennessee, Virginia, Maryland, West Virginia and North Carolina, and sometimes extending south into northern Alabama, Georgia and western South Carolina, and north into Pennsylvania, Ohio and southern New York.

**Question 0**

What does the term Appalachian mean?

**Question 1**

Which states are the Southern Appalachian Mountains part of?

**Question 2**

What is a dissected flat area?

**Question 3**

Which southern states are not referred to in the narrower concept of Appalachia?

**Question 4**

North Carolina, South Carolina is considered part of what bounded definition?

**Question 5**

Which countries will be part of the region when it is extended westwards?

**Text number 4**

While exploring inland along the north coast of Florida in 1528, members of the Narváez expedition, including Álvar Núñez Cabeza de Vaca, discovered a Native American village near present-day Tallahassee, Florida, whose name they spelled Apalchen or Apalachen [a.paˈla.tʃɛn]. The Spanish soon changed the name to Apalachee, and it was used as a name for a tribe and territory that spread far inland to the north. Pánfilo de Narváez's expedition first arrived in Apalachee on 15 June 1528 and used the name. Today it is spelled "Appalachian" and is the fourth oldest surviving European place name in the United States.

**Question 0**

What area did the Narvaez expedition survey?

**Question 1**

When did the Narvaez expedition explore Florida?

**Question 2**

What was the name of Florida spelled with?

**Question 3**

What was the name eventually used for?

**Question 4**

When was the name changed to Appalachian?

**Question 5**

What is the oldest surviving European place name in the United States?

**Question 6**

Who named Tallahassee, Florida?

**Question 7**

What was the name of the chief of the Indian village?

**Question 8**

How was the name of the Narvaez expedition spelled?

**Text number 5**

In addition to the actual rugged mountains known as the ridges and valleys, the dissected plains north and west of the mountains are generally classified in the same group as the Appalachians. It includes the Catskill Mountains of southeastern New York, the Poconos Mountains of Pennsylvania, and the Allegheny Plateau of southwestern New York, western Pennsylvania, eastern Ohio, and northern West Virginia. The same plateau is known as the Cumberland Plateau in southern West Virginia, eastern Kentucky, West Virginia, eastern Tennessee and northern Alabama.

**Question 0**

What area is usually grouped with Appalachians?

**Question 1**

What mountains are in this area?

**Question 2**

What is the name of the plain in West Virginia?

**Question 3**

Where are the real folded mountains?

**Question 4**

What is the name of a plateau in the south-east and south-west of New York?

**Question 5**

What is the name of the plain that is not Allegheny?

**Question 6**

What is north and west of the plateau?

**Text number 6**

In addition to the mountains listed above, the Appalachian belt includes the plains that run south to the Atlantic Ocean in New England and south-east to the coastal plain boundary in the central and southern Atlantic; and in the north-west, the Allegheny and Cumberland plains, which descend towards the Great Lakes and interior plains. A notable feature of the zone is the longitudinal chain of broad valleys, including the Great Appalachian Valley, which divides the mountain system into two distinct parts in the southern parts, but which in the northernmost part lies west of all those mountains with typical Appalachian features, separating them from the Adirondack Group. The mountain system has no dominant elevation axis, but in each section the peaks rise fairly steadily, and especially in the central part the valleys between the various ridges and mountains follow the same orientation as the system itself. None of the peaks reaches the area of perpetual snow.

**Question 0**

What does the Great Appalachian Valley do?

**Question 1**

What do all the mountains in the region have in common?

**Question 2**

What is the climate like at the summits?

**Question 3**

How many parts is the Great Appalachian Valley divided into?

**Question 4**

Which ocean is southeast of the mountains?

**Question 5**

What are the names of the inland plains?

**Question 6**

What divides a mountain range equally?

**Question 7**

Which group will get into the eternal snow area?

**Text number 7**

Newfoundland's Long Range mountains are almost 900 metres high. The Chic-Choc and Notre Dame mountains in Quebec have the highest peaks at around 1 200 metres. In Nova Scotia and New Brunswick, individual peaks and small mountain ranges vary between 300 and 800 metres. In Maine, several peaks exceed 1 200 metres (1 200 m), including Mount Katahdin at 1 605 metres (5 267 ft). In New Hampshire, many peaks rise to over 1 500 m (1 500 ft), such as Mount Washington in the White Mountains at 1 917 m (1 917 ft) and Adams Mountain at 1 759 m (1 759 ft), Jefferson at 1 741 m (1 741 ft), Monroe at 1 640 m (1 640 ft), Madison at 1 636 m (1 636 ft), Lafayette at 1 600 m (1 600 ft) and Lincoln at 1 551 m (1 551 ft). The highest point in the Green Mountains, Mansfield Peak, is 1 339 m (4 393 ft) high; others include Killington Peak at 1 288 m (4 226 ft), Camel's Hump at 1 244 m (4 083 ft), Abraham Mountain at 1 221 m (4 006 ft) and several other mountains over 900 m (3 000 ft) high.

**Question 0**

How high are Newfoundland's mountains?

**Question 1**

How high are Nova Scotia's mountains?

**Question 2**

How high are the mountains in Maine?

**Question 3**

How high are the mountains in New Hampshire?

**Question 4**

How high are the individual peaks of Notre Dame?

**Question 5**

What is the name of the 5 267 foot peak in Nova Scotia?

**Question 6**

What is the smallest peak in the New Hampshire mountains?

**Question 7**

What state is the Green Mountains in?

**Question 8**

What is the name of the mountain range in Maine?

**Text number 8**

Pennsylvania has more than sixty peaks that rise to over 800 metres, with Mount Davis and Blue Knob reaching over 900 metres. In Maryland, Eagle Rock and Dans Mountain are notable peaks, reaching 964 metres (3 162 ft) and 878 metres (2 882 ft) respectively. On the same side of the Great Valley, south of the Potomac River, are Pinnacle at 3 007 ft (917 m) and Pidgeon Roost at 3 400 ft (1 000 m). In West Virginia, more than 150 peaks rise to more than 1,200 m (3,200 ft), including Spruce Knob at 1,482 m (1,482 ft), the highest point in the Allegheny Mountains. Several other points in the state rise above 1,800 feet (1,500 m). Snowshoe Mountain at Thorny Flat (1 478 m) and Bald Knob (1 476 m) are among the most notable peaks in West Virginia.

**Question 0**

How many peaks in PA are above 2 500 feet?

**Question 1**

How high are the peaks of Mount Davis and Blue Knob?

**Question 2**

How high are Eagle Rock and Dans Mountain?

**Question 3**

How long is Pinnacle?

**Question 4**

How many peaks in WV are above 4,000 feet?

**Question 5**

How many peaks are over 2500 feet in Maryland?

**Question 6**

Which mountains are on the opposite side of the Great Valley from Mount Dans?

**Question 7**

How many peaks are above 3,000 feet in West Virginia?

**Question 8**

What is the name of the other mountain besides Snowshoe on Thorny Flat?

**Question 9**

What is south of Pinnacle?

**Text number 9**

In southern Pennsylvania, the Blue Ridge Mountains, known there as South Mountain, rise to around 600 metres in the state. South Mountain's highest point is just below the Mason-Dixon line in Maryland on Quirauk Mountain, at 2 145 ft (654 m), and then drops south to the Potomac River. In Virginia, the Blue Ridge extends again to an elevation of 600 m (1,000 ft). The highest peaks of the Virginia Blue Ridge north of the Roanoke River are Stony Man 4 031 ft (1 229 m), Hawksbill Mountain 4 066 ft (1 239 m), Apple Orchard Mountain 4 225 ft (1 288 m) and Peaks of Otter 4 001 and 3 875 ft (1 220 and 1 181 m). South of the Roanoke River, along the Blue Ridge, are Virginia's highest peaks, including Whitetop Mountain 5 520 ft (1 680 m) and Mount Rogers 5 729 ft (1 746 m), the highest point in the Commonwealth.

**Question 0**

Where do the Blue Ridge Mountains begin?

**Question 1**

What are the typical elevation differences in the Blue Ridge Mountains?

**Question 2**

How tall is Quirauk Mountain?

**Question 3**

How high are Virginia's Blue Ridge Mountains?

**Question 4**

What is the highest Appalachian Mountain in Virginia?

**Question 5**

Which mountain is just above the Mason-Dixon line?

**Question 6**

In which state is the Potomac River located?

**Question 7**

What is the highest peak south of the Roanoke River?

**Question 8**

What is the lowest point in the Commonwealth?

**Question 9**

What is the highest mountain in Pennsylvania?

**Text number 10**

Before the French and Indian War, the Appalachian Mountains were a vague border between the British Atlantic colonies and the French territories centred on the Mississippi basin. After the French and Indian War, a 1763 proclamation restricted settlement of Britain's thirteen original North American colonies to the eastern side of the mountain's summit line (except for the northern areas where the Great Lakes formed the boundary). Although the boundary line was adjusted several times to accommodate the frontier settlements, and although it was impossible to enforce as law, it was strongly resented by settlers in the Appalachian backcountry. The Proclamation Line can be considered one of the grievances that led to the American War of Independence. Many frontier settlers felt that the defeat of the French opened the lands west of the mountains to the English, but they noted that the Proclamation of the King of Great Britain prevented settlement. The backcountry settlers who fought in George Rogers Clark's Illinois campaign were motivated to secure their Kentucky settlement.

**Question 0**

Where were the mountains located before the French and Indian War?

**Question 1**

What happened after the French and Indian War?

**Question 2**

What was the public opinion on the law?

**Question 3**

What is the likely outcome of the law?

**Question 4**

What did the settlers in the hinterland want to secure?

**Question 5**

When did the French and Indian War start?

**Question 6**

Who were the most staunch supporters of the Declaration?

**Question 7**

What law did the War of Independence lead to?

**Question 8**

Where was George Rogers Clark from?

**Question 9**

Who was the King of Britain?

**Text number 11**

In eastern Pennsylvania, the Great Appalachian Valley or Great Valley was reached through the wide gateway between South Mountain and the Highlands, and many Germans and Muravians settled here between the Susquehanna and Delaware Rivers, forming the Pennsylvania Dutch community, some of whom still speak a unique American German dialect known as "Pennsylvania German" or "Pennsylvania Dutch". These late arrivals to the New World were forced to the frontier to find cheap land. With followers of German, English and Scotch-Irish origin, they cleared their way south, and soon occupied the entire Shenandoah Valley, ceded by the Iroquois, and the upper reaches of the tributaries of the Tennessee River's Great Valley, ceded by the Cherokee.

**Question 0**

Where did many Germans settle?

**Question 1**

What dialect was born because of this?

**Question 2**

Where did these Germans finally occupy?

**Question 3**

What is another name for Eastern Pennsylvania?

**Question 4**

Which language was created in the Shenandoah Valley?

**Question 5**

Who settled at the head of South Mountain?

**Question 6**

To whom did the English hand over the Shenandoah Valley?

**Question 7**

Which area did the cherokee reclaim?

**Text number 12**

Typical forest birds include the wood turkey (Meleagris gallopavo silvestris), the sandpiper (Bonasa umbellus), the mourning dove (Zenaida macroura), the raven (Corvus corax), the wood duck (Aix sponsa) and the barn owl (Bubo virginianus), barn owl (Strix varia), Eurasian eagle owl (Megascops asio), red-tailed hawk (Buteo jamaicensis), red-tailed hawk (Buteo lineatus) and great spotted eagle (Accipiter gentilis), as well as a large number of songbirds (Passeriformes), in particular the wood pigeon.

**Question 0**

What is a typical bird found in the area?

**Question 1**

What is the scientific name of the turtle dove?

**Question 2**

Which songbird species are rarely found in forests?

**Question 3**

What species of duck is rarely found in forests?

**Question 4**

What is the scientific name of the wild raven?

**Text number 13**

The animals that characterise Appalachian forests include five species of squirrel. The most commonly found species is the eastern grey squirrel (Sciurus carolinensis), which is found at low to medium elevations. Similar habitats are shared by the slightly larger chalk squirrel (Sciurus niger) and the much smaller southern chalk squirrel (Glaucomys volans). The red squirrel (Tamiasciurus hudsonicus) is more typical of cooler northern and high altitude habitats, while the Appalachian northern gliding squirrel (Glaucomys sabrinus fuscus), which closely resembles the southern gliding squirrel, is restricted to northern deciduous and spruce forests.

**Question 0**

How many species of gliders are commonly found in the area?

**Question 1**

What is the most commonly seen species?

**Question 2**

With whom does a squirrel share its habitat?

**Question 3**

What can be found more in the north?

**Question 4**

Which species is generally more common in spruce forests?

**Question 5**

How many species of animals are there in the Appalachian forests?

**Question 6**

What is a smaller northern gliding squirrel?

**Question 7**

What is the rarest squirrel found at moderate altitude?

**Question 8**

Which trees are the gliding squirrel restricted to?

**Question 9**

What is the most commonly seen squirrel in higher altitudes?

**Text number 14**

The drier and rockier uplands and ridges are dominated by oak-chestnut type forests, dominated by various types of oak (Quercus spp.), walnut (Carya spp.) and formerly American chestnut (Castanea dentata). The fungus Cryphonectaria parasitica (chestnut blight) virtually wiped out American chestnut as a canopy species, but it still survives as seedling-sized shoots from the roots, which are not killed by the fungus. In modern forests, chestnut has been largely replaced by oaks.

**Question 0**

What trees are typically found in drier areas?

**Question 1**

Which tree species had almost completely disappeared?

**Question 2**

What does a tree live on?

**Question 3**

Which trees replaced the chestnut trees?

**Question 4**

Which species has made a comeback to the highlands?

**Question 5**

What almost wiped out the hickories?

**Question 6**

Which tree species are chestnuts replacing?

**Question 7**

Which type of chestnut is the most contaminated by the fungus?

**Question 8**

Where does the mushroom come from?

**Text number 15**

The oak forests of southern and central Appalachia are largely composed of black, red, white, chestnut and red oaks (Quercus velutina, Q. rubra, Q. alba, Q. prinus and Q. coccinea) and especially of walnut oaks (Carya glabra). In the most lush forests, which belong to the mesic type and are generally located in bays and on gentle slopes, white oak and northern red oak predominate, while in the driest places chestnut oak, sometimes also red oak or northern red oak, predominate. In the northern Appalachians, the oaks, with the exception of white oak and northern red oak, disappear, while the latter spreads further north.

**Question 0**

What kind of oaks are there in the central and southern parts?

**Question 1**

What other tree is common there?

**Question 2**

Which trees are located in the drier parts?

**Question 3**

What is the predominant oak species in Appalachia?

**Question 4**

What are the five primary types of hickory?

**Question 5**

Where do black oaks mainly thrive?

**Question 6**

Which two types of oak are the rarest in the Northern Appalachians?

**Question 7**

Which oak tree is at its southernmost point?

**Text number 16**

The main peaks of the southern part of the Blue Ridge are located on two main ridges - the western or Unaka front on the Tennessee-North Carolina border and the eastern front in North Carolina - or on one of several "cross ridges" between the two main ridges. The main sub-ridges of the Eastern Front are the Black Mountains, Great Craggy Mountains and Great Balsam Mountains, with the major peaks being Grandfather Mountain (1 818 m) on the Tennessee-North Carolina border, Mount Mitchell (2 037 m) in the Blacks and Black Balsam Knob (1 894 m) and Cold Mountain (1 840 m) in Great Balsam. The western Blue Ridge Front is divided into the Unaka Range, Bald Mountains, Great Smoky Mountains and Unicoi Mountains, with Roan Mountain 6 285 ft (1 916 m) in Unaka, Big Bald 5 516 ft (1 681 m) and Max Patch 4 as its major peaks,616 ft (1 407 m) in the Bald Mountains, Clingmans Dome 6 643 ft (2 025 m), Mount Le Conte 6 593 ft (2 010 m) and Mount Guyot 6 621 ft (2 018 m) in the Great Smokies, and Big Frog Mountain 4 224 ft (1 287 m) near the Tennessee, Georgia and North Carolina border. Notable peaks on the Cross Ridges include Waterrock Knob (1 918 m) in Plott Balsams. In North Georgia, numerous peaks exceed 1,200 m in elevation, including the state's highest Brasstown Bald (1,458 m) and Rabun Bald (1,431 m).

**Question 0**

What are the names of the two main peaks?

**Question 1**

Where does the Unaka front divide?

**Question 2**

Which front is located in northern Georgia?

**Question 3**

How many peaks in northern Georgia are over 1,200 feet?

**Text number 17**

There are many geological issues associated with Appalachian rivers and streams. Despite the existence of the Great Appalachian Valley, many of the major rivers run transversely to the axis of the mountain system. The Appalachian drainage divide follows a meandering route that crosses the mountain range just north of the New River in Virginia. South of the New River, the rivers flow into the Blue Ridge Mountains, cross the higher Unakas, receive important tributaries from the Great Valley, and flow in gorges (water holes) across the Cumberland Plateau, discharging through the Cumberland and Tennessee Rivers into the Ohio River and Mississippi River and thence into the Gulf of Mexico. In the central part, north of the New River, rivers that rise in or immediately beyond the Valley Ridges flow through large gorges into the Great Valley and then over the Blue Ridge into tidal creeks that penetrate the coastal plain via the Roanoke, James, Potomac and Susquehanna rivers.

**Question 0**

What is the name of the catchment area?

**Question 1**

What is north of the Potomac River?

**Question 2**

What geological feature causes the main river to flow in a transverse direction?

**Question 3**

In which state is the James River located?

**Text number 18**

Looking at the rocks exposed in the present-day Appalachian Mountains, elongated zones of warped and thrusting marine sedimentary rocks, volcanic rocks and ancient seabed fragments are found, providing strong evidence that these rocks were deformed during the impact of the continental plates. The formation of the Appalachians, around 480 million years ago, is the first of many plate collisions that formed the mountain range, culminating in the formation of the supercontinent Pangaea, near the centre of which the Appalachians were located. As North America and Africa were connected, the Appalachian Mountains formed part of the same mountain chain as the Little Atlas in Morocco. This mountain range, known as the Central Pangaea, extended from the collision of North America and Europe to Scotland (see Caledonian orogeny).

**Question 0**

What kind of stones were undamaged when the plates collided?

**Question 1**

When was Pangaea?

**Question 2**

What is Appalachia's middle name?

**Question 3**

What is the name of a mountain range in Scotland?

**Question 4**

In which country were the Appalachians originally located?

**Text number 19**

In the middle Ordovician (around 496-440 Ma), a change in continental plate movements set the stage for the first Palaeozoic mountain building (Taconic orogeny) in North America. The once quiet Appalachian passive margin became a very active plate margin when the adjacent oceanic plate, Iapetus, collided with and began to subduct beneath the North American craton. The birth of this new subduction zone gave rise to the early Appalachians. Volcanoes grew on the edge of the continental plate at the same time as subduction began. The thrust faults lifted and twisted the older sedimentary rocks deposited on the passive margin. As the mountains rose, erosion began to erode them. Streams carried rock debris down the slopes and deposited it on nearby lowlands. The Taconic Orogeny was only the first of the mountain-building plate collisions that contributed to the formation of the Appalachians, culminating in the North American-African collision (see Appalachian orogeny).

**Question 0**

When did the Appalachian passive margin go quiet?

**Question 1**

What did the Appalachian crash into and sink under?

**Question 2**

What was the name of the first collision between North America and the Appalachians?

**Question 3**

What was the name of the pre-Taconic Orogeny?

**Question 4**

What was the name of the volcanoes?

**Text number 20**

By the end of the Mesozoic period, the Appalachian mountains had been reduced to a nearly flat plain. It was only when the area was uplifted during the Cenozoic that the distinctive topography of the present area was formed. Uplift rejuvenated streams, which responded quickly by cutting downwards into the ancient bedrock. Some streams flowed along weak strata that defined many of the crevasses and scarps that had formed millions of years earlier. Other streams cut downwards so rapidly that they cut directly across resistant warped rocks in the mountain core, carving canyons through rock layers and geological structures.

**Question 0**

In what era did the Appalachian Mountains begin to erode?

**Question 1**

What did erosion create in the Cenozoic era?

**Question 2**

What rejuvenated the bedrock?

**Question 3**

What defined the warps and blemishes?

**Question 4**

How long did it take to dig the canyons?

**Text number 21**

The Appalachian Mountains contain large anthracite and bituminous coal deposits. In the mountain ranges, coal is in metamorphosed anthracite form, represented by the Coal Region in northeastern Pennsylvania. Bituminous coal fields in western Pennsylvania, western Maryland, southeastern Ohio, eastern Kentucky, southwestern Virginia and western Virginia contain coal in sedimentary form. Coal mining operations, which remove entire mountaintops, currently threaten large areas and ecosystems in the Appalachian Mountains.

**Question 0**

What is the other name for anthracite coal?

**Question 1**

What helps preserve ecosystems in the Appalachians?

**Question 2**

What kind of fields are in southwestern Kentucky?

**Question 3**

Where in Ohio is the metamorphosed form of coal?

**Text number 22**

The dominant northern and high-altitude conifer is the red spruce (Picea rubens), which grows close to sea level to over 1 200 metres above sea level in northern New England and south-eastern Canada. It also grows south along the Appalachian ridge line to the highest elevations in the southern Appalachians, such as in North Carolina and Tennessee. In the central Appalachians, it generally grows at elevations above 900 m, except in a few cold valleys where it grows lower. In the southern Appalachians, it is restricted to higher elevations. Another species is the black spruce (Picea mariana), the northernmost of the North American conifers, found in the northern Appalachians in high elevations and swamps as far north as Pennsylvania.

**Question 0**

What is the height above sea level of red spruce in cold valleys?

**Question 1**

How tall does a black spruce grow?

**Question 2**

Where does red spruce grow in Pennsylvania?

**Question 3**

How far south are there red spruce trees?

**Question 4**

In which part of Canada do black spruce trees grow?

**Text number 23**

The Appalachians are also home to two species of spruce, the boreal balsam fir (Abies balsamea) and the endemic Fraser spruce (Abies fraseri), which grows in the high elevations of the south. The Fraser spruce has spread to the highest parts of the southern Appalachians, where, together with the red spruce, it forms a fragile ecosystem known as the southern Appalachian spruce-fir forest. Fraser spruce is rarely found below 1 700 m and becomes the dominant tree species at 1 900 m. In contrast, balsam fir is found in the Northern Appalachians from nearly sea level to the tree line, but is restricted in the Central Appalachians to the Virginia and West Virginia Central Appalachians, where it is usually found above 1,200 m, except in cold valleys. Curiously, it is associated with Virginia oaks. Some believe that the Virginia and West Virginia balsam fir is a natural hybrid of a more northern variety and the Fraser fir. While red spruce is common in both upland and swamp environments, balsam fir and black spruce and tamarack are more typical of the latter. However, balsam fir also thrives in soils with a pH of up to 6.

**Question 0**

How many species of oak trees are found in the Appalachians?

**Question 1**

Which tree species are most often found below 5 500 feet?

**Question 2**

What is the scientific name of an oak tree?

**Question 3**

What is the lowest altitude at which oaks are usually found?

**Question 4**

In which state are Fraser spruces associated with oaks?

**Text number 24**

Eastern or Canada spruce (Tsuga canadensis) is another important evergreen needle-leaved conifer that grows in the Appalachian chain from north to south, but is restricted to lower elevations than red spruce and Norway spruce. It tends to thrive in more lush and less acidic soils than spruce and fir, and is characteristic of deep, shaded and moist mountain valleys and coves. Unfortunately, it is susceptible to the hemlock woolly adelgid (Adelges tsugae), an introduced insect that rapidly destroys it as a forest tree. The rarer carolinian lingonberry (Tsuga caroliniana), which is restricted to the southern Appalachians, is less common. Like the Canada hemlock, this tree is severely affected by the hemlock woolly adelgid.

**Question 0**

Which insect destroys spruce trees?

**Question 1**

What kind of soil does Carolina hemlock require compared to spruce?

**Question 2**

What species of trees are found lower down than Canada hemlocks?

**Question 3**

Where are Carolina Hemlocks traditionally found?

**Question 4**

Which tree species of Canada hemlock is not affected by adelgid?

**Text number 25**

Several pine species typical of the Appalachians include eastern white pine (Pinus strobus ), Virginia pine (Pinus virginiana), pitch pine (Pinus rigida ), Scots pine (Pinus pungens) and shortleaf pine (Pinus echinata). The red pine (Pinus resinosa) is a boreal species that forms a few high elevations as far north as West Virginia. All these species, with the exception of the white pine, are generally found in sandy, stony and poor soils, most of which are acidic in nature. The white pine, a large species valued for its timber, thrives best on rich, moist soils that are either acidic or alkaline in nature. Scots pine also thrives in acidic, boggy soils, and table pine can sometimes be found in this habitat. Scots pine is generally found in warmer habitats and at lower altitudes than other species. All the species listed are most at home in open or lightly shaded habitats, although white pine also thrives in shady coves, valleys and floodplains.

**Question 0**

What kind of species is pine?

**Question 1**

What is the only species that lives in sandy places?

**Question 2**

Why is red pine valued?

**Question 3**

What species other than the white pine thrives in moist soil?

**Question 4**

In which habitats is it difficult for white pine to thrive?

**Text number 26**

The Appalachians are characterised by a large number of large, beautiful deciduous trees. Their occurrence is best summarised and described in E. Lucy Braun's classic work Deciduous Forests of Eastern North America (Macmillan, New York), published in 1950. The most diverse and abundant forests are mesophytic or medium-humid mixed forests, largely confined to the rich, moist mountainous uplands of the southern and central Appalachians, especially the Cumberland and Allegheny Mountains, but also thriving in the bays of the southern Appalachians. Typical canopy species include white birch (Tilia heterophylla), yellow elderberry (Aesculus octandra), sugar maple (Acer saccharum), American beech (Fagus grandifolia), tulip tree (Liriodendron tulipifera), white ash (Fraxinus americana ), and iron birch (Betula alleganiensis). Other common trees include red maple (Acer rubrum), hazel (Carya ovata and C. cordiformis) and black birch (Betula lenta ). Small understorey trees and shrubs include flowering dogwood (Cornus florida), silver fir (Ostrya virginiana), witch hazel (Hamamelis virginiana) and spicebush (Lindera benzoin). There are also hundreds of perennial and annual herbs, including herbs and medicinal plants such as American ginseng (Panax quinquefolius), goldenrod (Hydrastis canadensis), bloodroot (Sanguinaria canadensis) and blackcurrant (Cimicifuga racemosa).

**Question 0**

What kind of trees are missing in the Appalachian region?

**Question 1**

Where was E. Lucy Braun from?

**Question 2**

When were the deciduous trees discovered?

**Question 3**

Where are perennial herbs mainly located?

**Text number 27**

The above trees, shrubs and herbs are also more widely distributed in less abundant mesic forests, which are generally found in bays, stream valleys and floodplains throughout the southern and central Appalachians in low- and mid-elevation areas. In the northern Appalachians and the higher elevations of the central and southern Appalachians, these diverse mesic forests give way to less diverse "northern hardwoods" with canopies dominated only by American beech, sugar maple, American silver fir (Tilia americana), and yellow birch, and with far fewer shrub and herb species.

**Question 0**

What are some examples of the trees mentioned above?

**Question 1**

Where are the northern hardwoods most diverse?

**Question 2**

What is the scientific name of the American beehive?

**Question 3**

Which part of Appalachia has a lot of bushes high up?

**Question 4**

What occurs more often in lush mesic forests?

**Text number 28**

Oak forests generally lack the diverse layer of small trees, shrubs and herbs of mesic forests. The shrubs are usually ericaceous, and include evergreen mountain ash (Kalmia latifolia), various blueberry species (Vaccinium spp.), black toadflax (Gaylussacia baccata), several deciduous rhododendrons (azaleas) and smaller heathers such as teaberry (Gaultheria procumbens) and trailing arbutus (Epigaea repens ). Wet stream valleys are characterised by evergreen large rhododendron (Rhododendron maximum). These occurrences are compatible with the acidic nature of most oak woodland soils. In contrast, the much rarer chinquapin oak (Quercus muehlenbergii) requires alkaline soils and usually grows where limestone is close to the surface. It is therefore not associated with ericaceous shrubs.

**Question 0**

What kind of layers are abundant in oak forests?

**Question 1**

What is the soil like in most honey forests?

**Question 2**

What kind of rock do rhododendrons grow near?

**Question 3**

What rarely occurs near wetlands?

**Question 4**

What is the name of the shrub associated with the chinquapin oak?

**Text number 29**

Eastern deciduous forests are prone to a number of serious insect and disease outbreaks. One of the most notable of these is the gypsy moth (Lymantria dispar), which mainly infests oak trees, causing severe defoliation and tree death. However, it also destroys weak individuals, thereby improving genetic stocks and creating rich habitats through the accumulation of dead wood. Because deciduous trees sprout so easily, this moth is not as damaging as the hemlock woolly adelgid. Perhaps more serious is the beech bark beetle complex, which includes both the scale insect (Cryptococcus fagisuga) and the fungus.

**Question 0**

What's worse than a hemlock woolly adelgid?

**Question 1**

What kind of sprouts are difficult to grow?

**Question 2**

What is considered more serious than a beech bark disease complex?

**Question 3**

What is the scientific name of adelgid?

**Question 4**

What does hemlock woolly adelgid help to cure?

**Text number 30**

Like the squirrel, the eastern hare (Silvilagus floridanus) and the white-tailed deer (Odocoileus virginianus) are also familiar. The latter in particular has increased considerably following the disappearance of the eastern wolf (Canis lupus lycaon) and the North American mountain lion. This has led to the overgrazing and consumption of many plants in Appalachian forests and the destruction of crops. Other deer include elk (Alces alces ), which is found only in the north, and moose (Cervus canadensis), which was once extirpated but is now making a comeback through transplantation in the southern and central Appalachians. In Quebec, the Chic-Chocs region has the only population of caribou (Rangifer tarandus) south of the St. Lawrence River. Another species that is common in the north, but whose range extends south into the high elevations of Virginia and West Virginia, is the variable snowy plover (Lepus americanus). However, these Central Appalachian populations are scattered and very small.

**Question 0**

Why has the number of hares increased recently?

**Question 1**

What is the scientific name of a North American tree?

**Question 2**

Which crops was the eastern wolf responsible for destroying?

**Question 3**

Where can you find a moose?

**Question 4**

Where is the only stand of snowshoe hare south of the St. Lawrence River?

**Text number 31**

Many species of salamanders are very important, especially the unpneumonic species (genus Plethodontidae), which live in abundance on the forest floor, hidden by leaves and debris. However, the eastern or red-spotted water vole (Notophthalmus viridescens) is the most common, with its terrestrial eft form often found on open, dry forest floor. It is estimated that salamanders constitute the largest faunal biomass category in Appalachian forests. Frogs and toads are fewer in number and abundance, but the tree frog (Rana sylvatica) is commonly found on the dry forest floor, as is the spotted frog, and several small frog species, such as the spring peepers (Pseudacris crucifer), enliven the forest with their sounds. Salamanders and other amphibians contribute greatly to nutrient cycling by feeding on small organisms on the forest floor and in aquatic habitats.

**Question 0**

What is the name of the most common salamander?

**Question 1**

Which category do frogs and toads belong to?

**Question 2**

What impairs the nutrient cycling of forests?

**Question 3**

What eats salamanders and amphibians?

**Question 4**

What species of salamander are called a group?

**Text number 32**

Although there are fewer reptiles than amphibians, and although they are smaller and more diverse in number, many snakes are striking members of the fauna. One of the largest is the poisonous black rat snake (Elaphe obsoleta obsoleta), while the garter snake (Thamnophis sirtalis) is one of the smallest but most abundant. The American copperhead (Agkistrodon contortrix) and the timber snake (Crotalus horridus) are venomous pit snakes. Lizards are few in number, but the wide-headed skink (Eumeces laticeps), which is up to 33 centimetres (13 inches) long and an excellent climber and swimmer, is one of the largest and most impressive in both appearance and action. The most common turtle is the eastern box turtle (Terrapene carolina carolina), found in both upland and lowland forests in central and southern Appalachia. The most notable aquatic species is the large nesting turtle (Chelydra serpentina), which occurs throughout the Appalachians.

**Question 0**

What is found more often than amphibians?

**Question 1**

What is the largest poisonous snake in Appalachia?

**Question 2**

How big can a black rat snake grow?

**Question 3**

What species of turtle is found only in the Eastern Appalachians?

**Question 4**

What kind of snake is a good climber?

**Text number 33**

For a century, the Appalachian Mountains were an obstacle to the westward expansion of the British colonies. The continuity of the mountain system, the bewildering variety of its successive ridges, the sinuous course and ruggedness of its transverse passes, the dense forest and dense undergrowth kept settlers on the seaward plains and coastal plains. Only around the Hudson and Mohawk valleys, Cumberland Gap, the Wachesa Trail [undue emphasis? - under discussion] and the southern terminus of the system were there easy routes to the interior, and these were long closed by powerful Native American tribes such as the Iroquois, Creek and Cherokee. Expansion was also hindered by alliances the British Empire had forged with the Indian tribes, the proximity of the Spanish colonies to the south and French activity throughout the interior.

**Question 0**

What stopped the Appalachians from expanding?

**Question 1**

What prevented settlers from going to the coastal plains?

**Question 2**

What were the names of the valleys that were impossible to cross?

**Question 3**

With whom were the Spanish colonies allied?

**Question 4**

What were the names of the French tribes?

**Text number 34**

By 1755, the barrier to westward expansion had thus been halved; English colonial outposts had penetrated the Allegheny and Cumberland plains, threatening the French monopoly of the intermountain region, and conflict became inevitable. When a joint battle was fought against the French to determine control of the Ohio Valley, the unquestioned power of the colonists was exposed, and the successful conclusion of the French and Indian War extended English territory as far as the Mississippi. The geographical isolation created by the Appalachian Mountains had contributed significantly to this strength. The confinement of the colonies between the ocean and the mountain wall led to the fullest possible occupation of the continental coastal frontiers, which was possible under present agricultural conditions, and led to a common purpose, political and commercial solidarity that would not otherwise have been established. As early as 1700, it was possible to ride from Portland, Maine, to southern Virginia, and stay overnight in a prominent village every night. In contrast to this total industrial occupation, the French territory was ruled by a small and very dispersed population, and its size and openness greatly increased the difficulties of contested tenure. The colonies suffered from this dispute and prepared themselves for the ensuing struggle with the government of the homeland. American armies, with no shipping, fought their way to the sea with mountains at their backs to protect them against the British, who were allied with the Indians. The few settlements behind the Great Valley were free to defend themselves, but because of their location they could not participate in the conflict in general.

**Question 0**

When did the French settlers break into Allegheny?

**Question 1**

Who did the French take the Transmontane from?

**Question 2**

Who did the British ally with in the war?

**Question 3**

How did the American armies get support?

**Question 4**

Who did America ally with in the Great Valley?

**Document number 326**

**Text number 0**

The company was founded in 1911 as the Computing-Tabulating-Recording Company (CTR), when The Tabulating Machine Company, International Time Recording Company, Computing Scale Company and Bundy Manufacturing Company merged. CTR's name was changed to International Business Machines in 1924, and Thomas J. Watson first used this name for CTR's Canadian subsidiary. The company was then referred to as IBM, and was nicknamed Big Blue by securities analysts because of its size and the general use of colour on products, packaging and logo.

**Question 0**

In what year was the company that became IBM founded?

**Question 1**

What was the name of the company that eventually became IBM?

**Question 2**

What year was IBM named?

**Question 3**

What was the nickname given to IBM?

**Question 4**

What is the parent company of Computing-Tabulating-Recording Company?

**Question 5**

What was the original name of Bundy Manufacturing Company?

**Question 6**

In what year was Bundy Manufacturing Company founded?

**Question 7**

What was the nickname of the Bundy Manufacturing Company?

**Question 8**

Who first used the name Bundy Manufacturing Company?

**Question 9**

Why did Thomas J. Watson first use the name Bundy Maufacturing Company?

**Text number 1**

In 2012, Fortune ranked IBM as the second largest US company by number of employees (435,000 worldwide), the fourth largest by market value, the ninth most profitable and the nineteenth largest by revenue. Globally, the company was ranked 31st in terms of turnover in 2011 by Forbes. Other rankings in 2011/2012 included #1 Company for Leaders (Fortune), #1 Green Company in the US (Newsweek), #2 Best Global Brand (Interbrand), #2 Most Admired Company (Barron's), #5 Most Admired Company (Fortune) and #18 Most Innovative Company (Fast Company).

**Question 0**

How many employees did IBM have in 2012?

**Question 1**

What was the market value of IBM's investment in 2012?

**Question 2**

Where did IBM rank globally in 2011 according to Forbes?

**Question 3**

Where did Interbrand rank IBM as a global brand?

**Question 4**

In 2012, Fortune listed the largest companies in the US by number of employees, where did IBM rank?

**Question 5**

How many employees did Forbes have in 2012?

**Question 6**

How did Forbes rank in terms of number of employees in 2012?

**Question 7**

How profitable was Forbes in 2012?

**Question 8**

What was Forbes' revenue ranking in 2012?

**Question 9**

How did Forbes rank globally in terms of turnover in 2011?

**Text number 2**

IBM has 12 research laboratories worldwide, grouped together in IBM Research. As of 2013[update], the company held the record for the most patents generated by a company for 22 consecutive years. Its employees have won five Nobel Prizes, six Turing Prizes, ten National Medals of Technology and five National Medals of Science. The company's most significant inventions or developments include the automated teller machine (ATM), floppy disk, hard disk drive, magnetic stripe card, relational database, universal product code (UPC), financial swap, Fortran programming language, SABRE airline reservation system, dynamic random access memory (DRAM), copper wiring in semiconductors, silicon-on-insulator (SOI) semiconductor manufacturing process and Watson artificial intelligence.

**Question 0**

What is the name of the research laboratories run by IBM?

**Question 1**

How many research laboratories does IBM have worldwide?

**Question 2**

How many years in 2013 had IBM produced the most patents of any company?

**Question 3**

How many Nobel Prizes have IBM employees won?

**Question 4**

This IBM invention is known as UPC, what is the full name?

**Question 5**

How many laboratories work for Watson?

**Question 6**

How long has Watson held the record as the company with the most patents?

**Question 7**

How many Nobel Prizes has Watson won?

**Question 8**

What is one invention made by Watson that people use every day?

**Question 9**

Which code developed by Watson is used in grocery stores?

**Text number 3**

IBM has been constantly evolving since its creation. Over the past decade, it has continuously transformed its business by exiting commodity markets such as PCs, hard disk drives and DRAMs and focusing on more valuable and profitable markets such as business information systems, data analytics, business continuity, security, cloud computing, virtualization and green solutions, resulting in a higher quality revenue stream and higher profit margins. IBM's operating margin increased from 16.8% in 2004 to 24.3% in 2013, and net profit margin increased from 9.0% in 2004 to 16.5% in 2013.

**Question 0**

What was IBM's operating margin in 2004?

**Question 1**

What were IBM's net profit margins in 2004?

**Question 2**

IBM's net profit margin was 16.5% in what year?

**Question 3**

What was IBM's operating margin in 2013?

**Question 4**

IBM's focus on markets such as business continuity, business intelligence, security and cloud computing is an example of what IBM is doing.

**Question 5**

What has happened to DRAMs since their creation?

**Question 6**

How did IBM's profitability improve when it exited the data analytics market?

**Question 7**

What was the average operating margin of HDD producers in 2004?

**Question 8**

Where did HDD producers' operating margins increase in 2013?

**Question 9**

How much net profit did the average HDD manufacturer make in 2004?

**Text number 4**

IBM bought Kenexa (2012) and SPSS (2009), PwC's consulting business (2002), spun off companies such as printer manufacturer Lexmark (1991) and sold product groups such as its personal computer and x86 server businesses to Lenovo (2005, 2014). In 2014, IBM announced its move to 'fabless' by transferring the semiconductor manufacturing business of IBM Micro Electronics to GlobalFoundries, a leading advanced technology manufacturing company. IBM justified its decision on the grounds that semiconductor manufacturing is a capital-intensive business that is challenging to operate without scale. This transition had progressed in early 2015[update].

**Question 0**

What year did IBM buy Kenexa?

**Question 1**

IBM made an acquisition in 2009, name it.

**Question 2**

IBM divested its printer manufacturer in 1991, what was its name?

**Question 3**

IBM sold two product lines to Lenovo, name them.

**Question 4**

What was the name of the company to which IBM Micro Electronics was transferred?

**Question 5**

What year did Lexmark buy Kenexa?

**Question 6**

Which company did Kenexa set up in 2012 to manufacture printers?

**Question 7**

What product ranges did Kenexa produce in 2012?

**Question 8**

To which company did Kenexa sell Lexmark?

**Question 9**

In which industry sector was PwC a leading player?

**Text number 5**

On 16 June 1911, Charles Ranlett Flint merged four companies in New York State to form the Computing-Tabulating-Recording Company (CTR), based in Endicott. The individual companies owned by CTR continued to operate under their established names until 1933, when the companies were merged and the holding company dissolved. The four companies employed 1 300 people and had offices and factories in Endicott and Binghamton, New York, Dayton, Ohio, Detroit, Michigan, Washington and Toronto. They manufactured machines for sale and rent, from commercial scales and industrial timing devices, to meat and cheese slicers, spreadsheets and punch cards.

**Question 0**

On what date were the companies that formed the Computing-Tabulating-Recording Company merged?

**Question 1**

Name the person who merged the companies that became the Computing-Tabulating-Recording Company.

**Question 2**

In what year did the companies owned by Computing-Tabulating-Recording Company finally merge?

**Question 3**

Where was the CTR business office?

**Question 4**

How many employees were there in the four companies owned by CTR in 1933?

**Question 5**

Where was Charles Ranlett Flint originally from?

**Question 6**

In what year did Charles Ranlett Flint found Endicott?

**Question 7**

In which state was Endicott merged into one company?

**Question 8**

How many employees worked for a holding company in 1911?

**Question 9**

What was the original name of Endicott?

**Text number 6**

Thomas J. Watson, Sr., who had been fired from the National Cash Register Company by John Henry Patterson, contacted Flint, and in 1914 was offered CTR. Watson took over as CTR's CEO, and 11 months later became CEO after the lawsuits related to his time at NCR were settled. After learning Patterson's pioneering business practices, Watson went on to put the NCR stamp on CTR's businesses. He introduced sales meetings, "generous sales incentives, a focus on customer service, a demand for well-groomed salespeople dressed in dark suits and an evangelical zeal for instilling company pride and loyalty in every employee". His favourite slogan "THINK" became the mantra of every company employee. In Watson's first four years, turnover more than doubled to $9 million, and the company expanded into Europe, South America, Asia and Australia. "Watson had never liked the clunky CTR name, which consisted of hyphens, and decided to replace it with the broader name 'International Business Machines'." First as the name of a 1917 Canadian subsidiary, then as a line of advertisements. For example, McClures magazine, v53, May 1921, has a full-page advertisement at the bottom which reads:

**Question 0**

In what year did Thomas J. Watson Sr. join CTR?

**Question 1**

Thomas J. Watson Sr. was fired from what company?

**Question 2**

What was Thomas J. Watson Sr's favourite slogan?

**Question 3**

What did income do in the first four years of Watson?

**Question 4**

In what year was the name International Business Machines first used?

**Question 5**

In what year did CTR first use its THINK statement?

**Question 6**

Who did Thomas J. Watson Sr. fire from CTR?

**Question 7**

When did Patterson join the National Cash Register Company?

**Question 8**

What happened to the National Cash Register Company's revenues when Patterson became CEO?

**Question 9**

What kind of benefits did National Cash Register Company employees receive?

**Text number 7**

In 1937, IBM spreadsheets enabled organisations to process unprecedented amounts of data. IBM's customers included the US government, which for the first time sought to maintain employment records for 26 million people under the Social Security Act, and the Third Reich, mainly through its German subsidiary Dehomag. During World War II, the company produced small arms for the US war effort (M1 Carbine and Browning Automatic Rifle). IBM provided translation services for the Nuremberg trials. In 1947, IBM opened its first office in Bahrain and an office in Saudi Arabia to serve the needs of the Arabian-American Oil Company, which later evolved into Saudi Business Machines (SBM).

**Question 0**

What was the name of a subsidiary operating in Germany during the Second World War?

**Question 1**

How many people did IBM maintain data on in 1937?

**Question 2**

What services did IBM provide for the Nuremberg trials?

**Question 3**

What year did IBM open its first office in Bahrain?

**Question 4**

What was the final name of IBM's Saudi Arabia-based company?

**Question 5**

What did the spreadsheets in Bahrain help organisations to deal with?

**Question 6**

How many people did the Third Reich employ?

**Question 7**

Which two types of weapons were used by the Third Reich in 1937?

**Question 8**

What year did the Nuremberg trials begin?

**Question 9**

What year did the German subsidiary Dehomag start operations?

**Text number 8**

In 1952, Thomas Watson senior stepped down after nearly 40 years; his son Thomas Watson junior was appointed Managing Director. In 1956, the company introduced the first practical example of artificial intelligence when Arthur L. Samuel of IBM's Poughkeepsie, New York laboratory programmed the IBM 704 computer to play a button and "learn" from its own experience. In 1957, the scientific programming language FORTRAN (FORmula TRANslation) was developed. In 1961, Thomas J. Watson Jr. was elected Chairman of the Board and Albert L. Williams became President. In the same year, IBM developed the SABRE (Semi-Automatic Business-Related Environment) reservation system for American Airlines and introduced the highly successful Selectric typewriter.

**Question 0**

In what year did Thomas Watson Sr. step down?

**Question 1**

In 1956, the company introduced the first example of what?

**Question 2**

Which computer did Arthur L. Samuel program to play checkers in 1957?

**Question 3**

In 1957, the FORTRAN language was created, where does FORTRAN come from?

**Question 4**

Who became the CEO of IBM in 1961?

**Question 5**

In what year did Albert L. Williams resign from the company?

**Question 6**

What did the Albert L. Willaims programme learn from his experiences playing checkers?

**Question 7**

Which machine was created by FORTRAN in 1952?

**Question 8**

What system was developed for FORTRAN in 1952 to help it play checkers?

**Question 9**

What year did IBM open its first office in Poughkeepsie?

**Text number 9**

In 2002, IBM acquired the consultancy firm PwC. In 2003, it launched a project to redefine the company's values. Using its Jam technology, it held a three-day Internet-based web discussion with 50 000 employees on key business issues. The results were analysed using advanced text analysis software (eClassifier) to identify common themes. Three themes emerged, expressed as "Dedication to the success of every customer", "Innovation that matters - for our business and the world" and "Trust and personal responsibility in all relationships". In 2004, a second three-day Jam was held where 52,000 employees discussed ways to put the company's values into practice.

**Question 0**

One company acquired by IBM in 2002 is?

**Question 1**

In 2003, IBM held an online discussion involving how many employees?

**Question 2**

What technology did IBM use in its 2003 Internet-based debate?

**Question 3**

What did IBM use to analyse the results of the online consultation?

**Question 4**

How many employees participated in the 2004 online consultation?

**Question 5**

Which company was acquired by PwC consulting in 2003?

**Question 6**

What did employees suggest to change the values of the company?

**Question 7**

How many people worked for PwC consulting in 2002?

**Question 8**

What did employees discuss at the second Jam organised by PwC Consulting in 2002?

**Question 9**

Where was the first debate hosted by PwC consulting in 2002?

**Text number 10**

In 2005, the company sold its personal computer business to Chinese technology company Lenovo, and in the same year it agreed to buy Micromuse. A year later, IBM launched Secure Blue, a low-cost hardware design for data encryption built into a microprocessor. In 2009, it acquired the software company SPSS Inc. Later in 2009, US President Barack Obama awarded IBM's Blue Gene supercomputer programme the National Medal of Technology and Innovation. In 2011, IBM received worldwide attention for its artificial intelligence program Watson, which was featured on Jeopardy!, where it beat game show champions Ken Jennings and Brad Rutter. As of 2012[update], IBM had been the number one recipient of US patents for 20 consecutive years.

**Question 0**

IBM sold its personal computer business to which company?

**Question 1**

In what year did IBM sell its personal computer business?

**Question 2**

What was the name of the low-cost data encryption?

**Question 3**

In what year was SPSS Inc. bought?

**Question 4**

The programme was awarded the National Medal for Technology and Innovation.

**Question 5**

To whom did Micromuse sell its personal computer business?

**Question 6**

What year did Micromuse sell its business to Lenovo?

**Question 7**

Which low-cost, microprocessor-based model did Micromuse launch?

**Question 8**

Which award did Micromuse win in 2009 for its Blue Gene supercomputer software?

**Question 9**

Which President awarded Micromuse the Blue Gene programme?

**Text number 11**

IBM announced on 28 October 2015 that it will acquire digital assets from The Weather Company - the holding company of Bain Capital, The Blackstone Group and NBCUniversal, which owns The Weather Channel, including its weather platforms (such as Weather Services International), websites (Weather.com and Weather Underground) and mobile apps. The purpose of the acquisition is to use Watson for weather analysis and forecasting. The acquisition does not include The Weather Channel itself, which will enter into a long-term licence agreement with IBM to use its data. The deal closed on 29 January 2016

**Question 0**

IBM acquired the digital assets of this company on 28 October 2015.

**Question 1**

How does IBM analyse the weather and make forecasts?

**Question 2**

When was the sale of the Weather Company's assets completed?

**Question 3**

What was the Weather Channel's deal with IBM for?

**Question 4**

Bain Capital is the holding company of which company?

**Question 5**

What did Bain Capital buy from The Weather Company in 2015?

**Question 6**

What will Bain Capital use Watson for in this acquisition?

**Question 7**

Why is The Weather Channel making a long-term deal with NBCUniversal?

**Question 8**

When was the sale of the assets of The Blackstone Group completed?

**Question 9**

When was Bain Capital founded?

**Text number 12**

The 14-member Board of Directors is responsible for the overall management of the company. Since Cathie Black's resignation in November 2010, the Board has included (by membership and year of joining) Alain J. P. Belda '08 (Alcoa), William R. Brody '07 (Salk Institute/Johns Hopkins University), Kenneth Chenault '98 (American Express), Michael L. Eskew '05 (UPS), Shirley Ann Jackson '05 (Rensselaer Polytechnic Institute), Andrew N. Liveris '10 (Dow Chemical), W. James McNerney, Jr. '09 (Boeing), James W. Owens '06 (Caterpillar), Samuel J. Palmisano '00 (IBM), Joan Spero '04 (Doris Duke Charitable Foundation), Sidney Taurel '01 (Eli Lilly) and Lorenzo Zambrano '03 (Cemex).

**Question 0**

How many members are on the IBM board?

**Question 1**

Which board member resigned in November 2010?

**Question 2**

In what year did William R. Brody join the IBM board?

**Question 3**

Kenneth Chenault is affiliated with which company?

**Question 4**

Who is the newest member of the IBM Board of Directors?

**Question 5**

In which year did Alain J. P. Belda resign?

**Question 6**

How many corporate offices does IBM have?

**Question 7**

What is Alain J. P. Belda's main responsibility as a member of the Board of Directors?

**Question 8**

Which chemical company does Cathie Black belong to?

**Question 9**

Which credit card company is Doris Duke affiliated with?

**Text number 13**

On 21 January 2014, IBM announced that its executives would forgo bonuses for the 2013 financial year, as the company reported a 5% fall in revenue and a 1% fall in net profit compared to 2012. It also committed to expand its data centre and cloud storage operations with more than $1.2 billion, including the development of 15 new data centres. After 10 consecutive quarters of flat or declining sales under CEO Virginia Rometty, IBM is forced to look at new approaches. Rometty said: "We need to reinvent ourselves, as we have done in previous generations. "

**Question 0**

How big a sales decline did IBM report for the 2013 financial year?

**Question 1**

When did IBM announce that its executives would forgo bonuses in the 2013 financial year?

**Question 2**

IBM is committed to expanding its business by this total dollar amount in 2014?

**Question 3**

How many new data centres has IBM committed to build?

**Question 4**

Who is the CEO of IBM?

**Question 5**

What did CE Virginia Rometty want to do for IBM's cloud storage business in 2014?

**Question 6**

How much profit did cloud storage generate in 2012?

**Question 7**

Which benefit was Rometty the only one willing to give up in 2012?

**Question 8**

What is one storage method that has been more popular among younger generations?

**Question 9**

How many times has IBM had to reinvent itself in the past?

**Text number 14**

Other major campus facilities include towers in Montreal, Paris and Atlanta, software labs in Raleigh-Durham, Rome, Krakow and Toronto, Johannesburg and Seattle, and facilities in Hakozak and Yamato. The company also has the IBM Scientific Center, Hursley House, Canada Head Office Building, IBM Rochester and Somers Office Complex. The company's contribution to architecture and design, including works by Eero Saarinen, Ludwig Mies van der Rohe and I.M. Pei, is recognised. Van der Rohe's building at 330 North Wabash in Chicago, the original headquarters of the company's research department after World War II, received an Honor Award from the National Building Museum in 1990.

**Question 0**

Which building did Van der Rohe create for IBM?

**Question 1**

330 North Wabash served as a post-World War II building.

**Question 2**

Which award was given to the 330 North Wabash Building?

**Question 3**

In which cities does IBM have towers?

**Question 4**

IBM has worked with architects and designers such as Ludwig Mies van der Rohe, I.M. Pei and Van der Rohe.

**Question 5**

Which building did Eero Saarinen create for IBM?

**Question 6**

What was the Somers Office Centre used for after the Second World War?

**Question 7**

Which award was given in recognition of the Somers office complex?

**Question 8**

Which group awarded the prize to the Somers Office Centre?

**Question 9**

In which three cities are Eero Saarinen's works also on display?

**Text number 15**

IBM's employee management practices can be traced back to its roots. In 1914, CEO Thomas J. Watson promoted the company spirit by establishing employee sports teams, organizing family outings and acquiring a company orchestra. IBM sports teams continue to this day; IBM Big Blue teams still exist as semi-professional corporate rugby and American football teams. In 1924, the Quarter Century Club was held to reward employees who had served for 25 years, and IBM's internal publication Business Machines was published for the first time. In 1925, the first meeting of the Hundred Percent Club of IBM salesmen who had met their quota was held in Atlantic City, New Jersey.

**Question 0**

Who was the CEO in 1914?

**Question 1**

The quarter-century club started this year.

**Question 2**

What is the name of IBM's internal magazine?

**Question 3**

In 1925, the first meeting of this group took place.

**Question 4**

What is the Hundred Percent Club made up of?

**Question 5**

Which employee management practices were first introduced in New Jersey in 1924?

**Question 6**

When was the first Atlantic City release?

**Question 7**

What was the Hundred Percent Club created in 1914 to promote?

**Question 8**

How many years of internal IBM publishing were there from 1914?

**Question 9**

What year did the first IBM sports team play in Atlantic City?

**Text number 16**

IBM was among the first companies to offer group life insurance (1934), family benefits (1935) and paid leave (1937). In 1932, IBM set up a training department to oversee the training of its employees, which oversaw the completion of the IBM Schoolhouse in Endicott in 1933. In 1935, Think magazine was established. In the same year, IBM also organised the first training course for female system service professionals. In 1942, IBM launched a program in Topeka, Kansas, to train and employ the handicapped. The following year, courses were started in New York, and soon the company was asked to join the President's Committee for Employment of the Handicapped. In 1946, the company hired its first black salesman, 18 years before the Civil Rights Act of 1964. In 1947, IBM announced a total and permanent disability compensation plan for its employees. A vested pension was added to the IBM pension plan. During IBM's management change in the 1990s, these pension plans were amended to reduce IBM's pension liabilities.

**Question 0**

What year did IBM start offering group life insurance?

**Question 1**

IBM created a schoolhouse in 1933, what was its name?

**Question 2**

IBM employees founded a magazine in 1935, what was its name?

**Question 3**

Which programme was launched by IBM in 1942?

**Question 4**

In what year did IBM hire its first black salesman?

**Question 5**

What year did Endicott offer group life insurance?

**Question 6**

What was Endicott created in 1932 to monitor the training of workers?

**Question 7**

What was considered to be a female system service professional in 1937?

**Question 8**

Who did Endicott create a programme to train and employ in 1942?

**Question 9**

What was the name of the 1935 employee magazine that featured the first black salesman?

**Text number 17**

In 1952, Thomas J. Watson Jr. published the company's first written equal opportunity policy letter, a year before the U.S. Supreme Court decision Brown v. Board of Education and 11 years before the Civil Rights Act of 1964. In 1961, IBM's non-discrimination policy was expanded to include gender, national origin and age. The following year, IBM held its first Invention Awards Dinner, honoring 34 outstanding IBM inventors, and in 1963 IBM named the first eight IBM Fellows to a new Fellowship program that honored IBM senior scientists, engineers and other professionals for outstanding technical achievements.

**Question 0**

Who published IBM's first equality policy letter?

**Question 1**

In what year was IBM's first equality policy letter published?

**Question 2**

In 1961, IBM's non-discrimination policy was extended to include what?

**Question 3**

How many inventors were honoured at IBM's first Inventors' Dinner?

**Question 4**

In 1963, IBM started a programme to name eight of these machines.

**Question 5**

Which was published by the Board of Education in 1952?

**Question 6**

What was added to IBM's hiring policy in 1952 as a result of the Brown v. Board of Education decision?

**Question 7**

How many people were involved in the Brown vs. Board of Education trial?

**Question 8**

Which law was passed in 1952?

**Question 9**

What was the first event hosted by the Board of Education in 1962?

**Text number 18**

On September 21, 1953, Thomas Watson Jr., then the company's president, sent a controversial letter to all IBM employees stating that IBM had to hire the best employees regardless of race, ethnicity or gender. He also issued a policy to make it clear that IBM would not build "separate but equal" workplaces when he negotiated the construction of new plants with the governors of two southern US states. In 1984, IBM added sexual orientation to its non-discrimination policy. The company argued that this would give IBM a competitive advantage because IBM could hire talented people that competitors would reject.

**Question 0**

On what day did Thomas Watson Jr. send a letter telling IBM to hire the best employees regardless of race, gender or origin?

**Question 1**

IBM announced its pay policy to facilitate bargaining in two states, where in the US?

**Question 2**

What jobs did IBM commit not to build?

**Question 3**

What did IBM extend its non-discrimination policy to in 1984?

**Question 4**

What year did IBM add sexual orientation to its non-discrimination policy?

**Question 5**

What did the Southern governors send in 1953?

**Question 6**

What did the letter sent to workers in 1984 say?

**Question 7**

What kind of job would the governors of two states not build?

**Question 8**

What would a separate but equal workplace give IBM to move forward?

**Question 9**

Who would IBM find it easier to hire in the future if it negotiated with its employees on hiring practices?

**Text number 19**

IBM has been a leading proponent of the open source initiative, and began supporting Linux in 1998. The company invests billions of dollars in Linux-based services and software through the IBM Linux Technology Center, which includes more than 300 Linux kernel developers. IBM has also released code under various open source licenses, including the platform-independent software framework Eclipse (worth around USD 40 million at the time of the donation), the three-sentence ICU (International Components for Unicode) license and the Java-based relational database management system (RDBMS) Apache Derby. However, IBM's involvement in open source development has not been without problems (see SCO v IBM).

**Question 0**

IBM started supporting this in 1998.

**Question 1**

There are 300 Linux kernel developers working here.

**Question 2**

IBM created a software framework known as?

**Question 3**

What is a significant legal case involving open source and IBM?

**Question 4**

What is meant by RDBMS?

**Question 5**

What company was Java supporting in 1998?

**Question 6**

Which initiative was created by IBM in 1998?

**Question 7**

How much was Linux worth in 1998?

**Question 8**

How does Java usually publish the code it develops?

**Question 9**

Where are the 300 Open Source Initiative developers working?

**Text number 20**

DeveloperWorks is an IBM-operated website for software developers and IT professionals. It includes articles and tutorials as well as software downloads and code samples, discussion forums, podcasts, blogs, wikis and other resources for developers and technical professionals. Topics range from open, industry-standard technologies such as Java, Linux, SOA and web services, web development, Ajax, PHP and XML, to IBM products (WebSphere, Rational, Lotus, Tivoli and Information Management). In 2007, developerWorks was inducted into the Jolt Hall of Fame.

**Question 0**

What website for software developers does IBM maintain?

**Question 1**

What happened to developerWorks in 2007?

**Question 2**

DeveloperWorks has content on open standards technologies such as Java and SOA. What other standards technologies does it have resources for?

**Question 3**

IBM products such as WebSphere and Rational are covered by DeveloperWorks, but which three other IBM products are covered?

**Question 4**

What year was the Jolt Hall of Fame inducted into DeveloperWorks?

**Question 5**

Where was Java introduced in 2007?

**Question 6**

What website does Ajax run for IT professionals?

**Question 7**

Which Java products are part of the Ajax site?

**Question 8**

What year was IBM elected to the Engineering Professionals Hall of Fame?

**Question 9**

What are the three open industry standard technologies covered by the Ajax website?

**Text number 21**

Almost all previous generations of console game systems used microprocessors developed by IBM. The Xbox 360 includes a PowerPC tri-core processor, designed and built by IBM in less than 24 months. Sony's PlayStation 3 features the Cell BE microprocessor, jointly designed by IBM, Toshiba and Sony. IBM also supplied the microprocessor that is at the heart of Nintendo's new Wii U system, launched in 2012. The new Power Architecture-based microprocessor incorporates IBM's latest technology in an energy-efficient silicon package. Nintendo's seventh-generation Wii console will feature an IBM chip, code-named Broadway. The older Nintendo GameCube uses the Gekko processor, also designed by IBM.

**Question 0**

What kind of processor did the Xbox 360 have?

**Question 1**

How long did it take IBM to create the Xbox 360 processor?

**Question 2**

Which microprocessor was in the Playstation 3?

**Question 3**

Who helped IBM develop the Playstation 3 microprocessor?

**Question 4**

What year did the Nintendo Wii U, partly developed by IBM, debut?

**Question 5**

What did Nintendo develop for all the previous generation console systems?

**Question 6**

How long did it take Nintendo to develop a PowerPC tri-core processor?

**Question 7**

What technology did IBM, Toshiba and Sony jointly design for Xbox 360?

**Question 8**

What year was the Xbox 360 first manufactured?

**Question 9**

What was the code name for Xbox 360 when it was first developed?

**Text number 22**

IBM announced the launch of its new software called "Open Client Offering", which runs on Linux, Microsoft Windows and Apple's Mac OS X. The company says that its new product will allow companies to offer their employees the choice of using the same software on Windows or alternatives. This means that "Open Client Offering" will reduce the cost of choosing whether to use Linux or Apple over Windows. Companies will no longer have to pay Microsoft for operating system licences, as operating systems will no longer be based on Windows-based software. One alternative to Microsoft's office document formats is the Open Document Format software, the development of which is supported by IBM. It will be used for a variety of tasks, including word processing, presentations and collaboration with Lotus Notes, instant messaging and blogging tools, and Mozilla Firefox, a competitor to Internet Explorer. IBM plans to install Open Client on 5% of its desktops. The Linux offering is available as IBM Client for Smart Work on the Ubuntu and Red Hat Enterprise Linux platforms.

**Question 0**

How does Open Client Offering work?

**Question 1**

What is the alternative to the Microsoft Office document format?

**Question 2**

How much of its desktop computers will IBM install Open Client on?

**Question 3**

On which platforms did IBM start offering IBM Client for Smart Work?

**Question 4**

Which web browser is Open Document Format compatible with?

**Question 5**

What does Apple's use of Mac OS X help to reduce, according to Microsoft?

**Question 6**

What do you have to pay Microsoft if you use Open Client Offering software?

**Question 7**

What is the alternative to using Linux document formats?

**Question 8**

How much of its computers does IBM want to install Firefox on?

**Question 9**

On which two platforms does Microsoft offer the Smart Work Linux client?

**Text number 23**

In 2006, IBM launched Secure Blue, an encryption device for microprocessors. A year later, IBM unveiled Project Big Green, an initiative in which IBM committed $1 billion annually to improve energy efficiency across its businesses. In November 2008, in a speech at the Council on Foreign Relations, IBM CEO Sam Palmisano unveiled a new programme to build a smarter planet. On 1 March 2011, IBM announced the Smarter Computing framework to support the Smarter Planet. On 18 August 2011, IBM produced chips that mimic neurons and synapses as part of its cognitive computing efforts. These microprocessors do not use von Neumann architecture and consume less memory and power.

**Question 0**

What is the name of the IBM project that directed one billion dollars a year to improving energy efficiency?

**Question 1**

What year was Secure Blue launched?

**Question 2**

What kind of hardware is Secure Blue?

**Question 3**

Who was the CEO of IBM in November 2008?

**Question 4**

Which framework was announced by IBM on 1 March 2011?

**Question 5**

How much did it cost IBM to produce Secure Blue?

**Question 6**

Where did Sam Palmisano speak in 2006?

**Question 7**

What was von Neumann's agenda at the 2006 External Relations Council?

**Question 8**

What kind of chips did Smarter Computing create in 2006?

**Question 9**

What kind of framework did von Neumann unveil in 2006?

**Text number 24**

IBM also organises a SmartCamp programme worldwide. The programme seeks out new start-up companies with whom IBM can collaborate to solve the world's problems. IBM is organising 17 SmartCamps around the world. Since July 2011, IBM has partnered with Pennies, an online charity box, to provide IBM's retail customers with a software solution that offers an easy way to donate money when paying in-store with a credit or debit card. Customers donate just a few pennies (1p-99p) at a time, with each donation going to UK charities.

**Question 0**

What is the name of the programme that IBM uses to find new start-ups to solve the world's problems?

**Question 1**

How many SmartCamps does IBM organise worldwide?

**Question 2**

Who has IBM partnered with to make it easy for retail shoppers to donate money?

**Question 3**

Which charities in which country will benefit from the IBM-Pennies partnership?

**Question 4**

Which company is known for its electronic charity box?

**Question 5**

What global programme does Pennies run to find companies to partner with?

**Question 6**

What kind of companies are Pennies looking for as partners?

**Question 7**

What did Pennies set out to solve in the UK?

**Question 8**

How many companies work with Pennies in their retail stores in the UK?

**Question 9**

What year did Pennies start?

**Text number 25**

However, the birthplace of IBM, Endicott, suffered decades of pollution. IBM used liquid cleaners to assemble circuit boards for more than two decades, and six spills were recorded, including one in 1979 involving a 4,100-gallon leak from an underground tank. These left volatile organic compounds in the city's soil and aquifer. Traces of volatile organic compounds have been detected in Endicott's drinking water, but concentrations are within regulatory limits. In addition, since 1980, IBM has pumped 78,000 gallons of chemicals into the air, including trichloroethane, freon, benzene and perchloroethane, which have allegedly caused several cancer cases among city residents. The Environmental Protection Agency has identified IBM Endicott as the biggest polluter, although contaminants from a local dry cleaner and other polluters have also been found. Cleanup and testing are ongoing, but city officials say tests show the water is safe to drink.

**Question 0**

What is the birthplace of IBM?

**Question 1**

How many gallons of liquid detergent leaked from an IBM facility in 1979?

**Question 2**

How long did IBM use liquid cleaners in the manufacture of printed circuit boards?

**Question 3**

How many gallons of chemicals did IBM pump into the air since 1980?

**Question 4**

Which ministry has identified IBM as a major polluter?

**Question 5**

What has contaminated drinking water for decades and made it dangerous in Endicott?

**Question 6**

When did the freon leak from the underground tank at Endicott?

**Question 7**

How many gallons of freon were spilled into the city's soil in 1979?

**Question 8**

How many people were diagnosed with cancer in 1980 near Endicott?

**Question 9**

Which local dry cleaner was identified as the main source in 1979?

**Document number 327**

**Text number 0**

In physics, energy is a property of objects that can be transferred to other objects or converted into different forms. The "ability of a system to do work" is a general description, but energy is difficult to define comprehensively because it takes many forms. For example, in SI units, energy is measured in joules, and one joule is defined 'mechanically' as the energy transferred to an object by mechanical work done by moving the object one metre against a force of one newton.[note 1] However, there are many other definitions of energy, depending on the context, such as thermal energy, radiant energy, electromagnetic energy, nuclear energy, and so on, from which definitions are derived that are most appropriate.

**Question 0**

What is a property of objects that can be transferred to other objects or transformed into different forms?

**Question 1**

In SI units, energy is measured in what units?

**Question 2**

Mechanically, one joule is defined as?

**Question 3**

What is a property of objects that can be transferred to other objects or transformed into different forms in biology?

**Question 4**

What is measured in SI units in watts?

**Question 5**

Electronuclear is the definition of what?

**Question 6**

How many metres of chemical work are needed?

**Question 7**

What are the definitions of energy forms, whatever the context?

**Text number 1**

Common forms of energy include kinetic energy of a moving object, potential energy stored in the force field of the object's position (gravitational, electric or magnetic field), elastic energy stored in the elongation of solid objects, chemical energy released when a fuel burns, radiant energy carried by light and thermal energy due to the temperature of the object. All these many forms of energy can be converted into other forms of energy. Newtonian physics has a general law of conservation of energy, which states that energy cannot be created or destroyed, but it can change from one form to another.

**Question 0**

What are the common forms of energy?

**Question 1**

Newtonian physics has a universal law that energy cannot be created and what?

**Question 2**

According to which law can energy partially change from one form to another?

**Question 3**

What are rare forms of energy?

**Question 4**

Gravitational energy is stored by stretching what?

**Question 5**

Physical energy is released when what burns?

**Question 6**

thermal energy transported by what?

**Question 7**

What does universal law say about plutonium physics?

**Text number 2**

In closed systems with no external energy source or sink, the first law of thermodynamics states that the energy of the system remains constant unless energy is transferred in or out by mechanical work or heat, and that no energy is lost during the transfer. This means that energy cannot be created or destroyed. Although heat can always be fully converted into work in the reversible isothermal expansion of an ideal gas, in the cyclic processes of practical interest in thermal engines, the second law of thermodynamics states that a system that is doing work always loses some energy as waste heat. This limits the amount of heat energy that can be used to do work in a cyclic process, and this limit is called the available energy. Mechanical and other energy can be converted into thermal energy in the other direction without such limitations. The total energy of a system can be calculated by adding up all the energy forms in the system.

**Question 0**

How can the total energy of the system be calculated?

**Question 1**

What is the limit to the amount of heat energy that can be used to work in a cyclic process?

**Question 2**

What can be fully converted to work in the reversible isothermal expansion of an ideal gas?

**Question 3**

Which means that the system doing the work always loses some energy as waste heat?

**Question 4**

How can the partial energy of a system be calculated?

**Question 5**

What is the limit to the amount of cold energy that can do the work in a cyclic process?

**Question 6**

What can be fully converted to work in the reversible isothermal contraction of an ideal gas?

**Question 7**

Which means that the system doing the work always receives some energy as waste heat?

**Question 8**

What does it mean that in "open systems", where there is no external energy source or sink, the energy of the system is constant unless energy is transferred in or out by mechanical work or heat?

**Text number 3**

Examples of energy conversion include producing electrical energy from heat energy using a steam turbine or lifting an object against gravity using electrical energy from a crane motor. Lifting against gravity imposes mechanical work on the object and stores gravitational potential energy in the object. If the object falls to the ground, gravity does mechanical work on the object, which converts the gravitational potential energy into kinetic energy, which is released as heat on impact with the ground. Our Sun converts nuclear potential energy into other forms of energy; its total mass does not decrease as such because of this (because it still contains the same total energy, even though it is in different forms), but its mass decreases as the energy escapes into the environment, largely as radiant energy.

**Question 0**

Give one example of energy conversion.

**Question 1**

What converts nuclear potential energy into other forms of energy?

**Question 2**

What is another example of energy conversion?

**Question 3**

Give one example of a linear transformation.

**Question 4**

What converts non-nuclear potential energy into other forms of energy?

**Question 5**

What is another example of solar conversion?

**Question 6**

What does pushing with gravity do?

**Question 7**

What kind of energy escapes into the environment as the mass increases?

**Text number 4**

The total energy of a system can be divided and classified in different ways. For example, in classical mechanics, a distinction is made between kinetic energy, which is determined by the motion of a body in space, and potential energy, which is a function of the position of the body in the field. It may also be useful to distinguish between, for example, gravitational energy, thermal energy, several types of nuclear energy (which exploit the potential of nuclear power and weak force), electrical energy (from an electric field) and magnetic energy (from a magnetic field). Many of these classifications overlap; for example, thermal energy is usually composed partly of kinetic energy and partly of potential energy.

**Question 0**

What determines the motion of an object in space?

**Question 1**

What is usually composed partly of kinetic energy and partly of potential energy?

**Question 2**

What is a function of the position of the object in the field?

**Question 3**

What determines that an object is not moving in space?

**Question 4**

What usually consists entirely of potential energy?

**Question 5**

What is the function of the position of the object outside the field?

**Question 6**

which part of the system can be replicated?

**Question 7**

which classifications do not overlap?

**Text number 5**

Some forms of energy are a variable mixture of both potential and kinetic energy. An example is mechanical energy, which is the sum of the kinetic (usually macroscopic) and potential energy of a system. The elastic energy of materials is also dependent on electric potential energy (between atoms and molecules), as is chemical energy, which is stored and released from the store of electric potential energy between electrons and the molecules or nuclei that attract them.[Citation needed for verification]. Whenever physicists find that a phenomenon appears to violate the law of conservation of energy, new forms are usually added to explain the contradiction.

**Question 0**

What depends on the electric potential energy?

**Question 1**

Where is chemical energy stored and released?

**Question 2**

Some forms of energy are a variable mix of potential and what other forms of energy?

**Question 3**

What is dependent on water potential energy?

**Question 4**

Where is biological energy stored and released?

**Question 5**

All forms of energy are a variable mixture of potential and what other energy?

**Question 6**

what can chemists find out about certain phenomena?

**Question 7**

typically add old forms explaining what?

**Text number 6**

In the late 1700s, Gottfried Leibniz proposed the idea in Latin: vis viva, or living force, defined as the product of the mass of an object and the square of its velocity; he believed that the whole vis viva was conserved. To explain the deceleration caused by friction, Leibniz proposed the theory that thermal energy consisted of the random motion of the parts of matter, a view shared by Isaac Newton, although it took more than a century before it was generally accepted. The modern analogue of this property, kinetic energy, differs from vis viva by only a factor of two.

**Question 0**

What is the term for living power?

**Question 1**

What is defined as the product of the mass of a body and the square of its velocity?

**Question 2**

Who suggested the Latin word vis viva?

**Question 3**

In which century did Leibniz suggest the Latin: vis viva?

**Question 4**

Who shared Leibniz's view that thermal energy consisted of the random motion of the constituents of matter?

**Question 5**

What is the term for dying power?

**Question 6**

What is defined as the product of the mass of a body and its speed in cubes?

**Question 7**

Who suggested the idea of an Italian vis viva?

**Question 8**

In which century did Newton propose the Latin idea: vis viva?

**Question 9**

Who rejected Leibniz's view that thermal energy consisted of the random motion of the constituents of matter?

**Text number 7**

In 1807, Thomas Young was possibly the first to use the term "energy" instead of vis viva in its current sense. In 1829, Gustave-Gaspard Coriolis described 'kinetic energy' in its current sense, and in 1853 William Rankine coined the term 'potential energy'. The law of conservation of energy was also first proposed in the early 19th century and applies to all isolated systems. For some years, there was a debate about whether heat was a physical substance called a calorie or a mere physical quantity such as momentum. In 1845, James Prescott Joule discovered the link between mechanical work and the generation of heat.

**Question 0**

Who could have been the first to use the term "energy" instead of "vis vis"?

**Question 1**

When did Thomas Young use the term "energy" instead of "vis viva"?

**Question 2**

Who invented the term "potential energy"?

**Question 3**

Who discovered the link between mechanical work and heat generation?

**Question 4**

When was the Energy Conservation Act first proposed?

**Question 5**

Surely who was the first to use the term "energy" instead of "vis vis"?

**Question 6**

When did Newton use the term "energy" instead of "vis viva"?

**Question 7**

Who rejected the term "potential energy"?

**Question 8**

Who discovered the link between mechanical work and heat reduction?

**Question 9**

When was the law of conservation of physics first proposed?

**Text number 8**

This development led to the theory of conservation of energy, which William Thomson (Lord Kelvin) formulated as a branch of thermodynamics. Thermodynamics helped Rudolf Clausius, Josiah Willard Gibbs and Walther Nernst to rapidly develop explanations of chemical processes. It also led Clausius to formulate the concept of entropy mathematically and Joseph Stefan to introduce the laws of radiant energy. According to Noether's theorem, the conservation of energy is the result of the laws of physics not changing over time. Since 1918, theorists have thus understood that the law of conservation of energy is a direct mathematical consequence of the translational symmetry of a quantity conjugate to energy, namely time.

**Question 0**

Who largely formalised the development that led to the theory of conservation of energy?

**Question 1**

What contributed to the rapid development of Clausius, Gibbs and Nernst's explanations of chemical processes?

**Question 2**

Who developed the concept of the laws of radiant energy?

**Question 3**

According to which theory is the conservation of energy due to the fact that the laws of physics do not change over time?

**Question 4**

Who largely rejected the developments that led to the conservation of energy theory?

**Question 5**

What prevented Clausius, Gibbs and Nernst from rapidly developing explanations of chemical processes?

**Question 6**

Who developed the concept of the laws of stored energy?

**Question 7**

According to which theory is the conservation of energy a result of the laws of physics changing over time?

**Question 8**

Since 1819, theorists have realised that the law of conservation of energy is what?

**Text number 9**

Another energy-related concept is called the Lagrange concept, after Joseph-Louis Lagrange. This formalism is as fundamental as the Hamiltonian, and both can be used to derive or derive equations of motion. It was invented in the context of classical mechanics, but is generally useful in modern physics. The Lagrangian is defined as kinetic energy minus potential energy. In general, the Lagrangian formalism is mathematically more convenient than the Hamiltonian for non-conservative systems (such as systems with friction).

**Question 0**

What is another energy-related concept?

**Question 1**

Who is the Lagrangian named after?

**Question 2**

What is defined as kinetic energy minus potential energy?

**Question 3**

Is Lagrange's formalism or Hamiltonian more suitable for non-conservative systems?

**Question 4**

What is another non-energy related concept?

**Question 5**

Who is Lestrangian named after?

**Question 6**

What is defined as potential energy minus kinetic energy?

**Question 7**

Is Lagrange's formalism or Hamiltonian more suitable for conservative systems?

**Question 8**

This non-formalism is as fundamental as what?

**Text number 10**

According to Noether's theorem (1918), all differentiable symmetries of the action of a physical system have an equivalent conservation law. Noether's theorem has become the basic tool of modern theoretical physics and calculus of variations. It is a generalisation of the main formulations of Lagrangian and Hamiltonian mechanics (1788 and 1833) concerning the laws of motion, but it does not apply to systems that cannot be modelled by Lagrangians; for example, dissipative systems with continuous symmetry need not have a corresponding conservation law.

**Question 0**

When was Noether's theorem created?

**Question 1**

What says that any differentiable symmetry of the action of a physical system has an equivalent conservation law?

**Question 2**

What has become the basic tool of modern theoretical physics and calculus of variations?

**Question 3**

When was Noether's theorem destroyed?

**Question 4**

What says that all differentiable symmetries of the action of a non-physical system have an equivalent conservation law?

**Question 5**

What has become the basic tool of modern theoretical chemistry and calculus of variations?

**Question 6**

Which theorem was derived in 1819?

**Question 7**

dissipative systems with discontinuous symmetries need not have what?

**Text number 11**

In chemistry, energy is a property of matter that is a consequence of its atomic, molecular or aggregate structure. Since a chemical transformation involves a change in one or more of these structures, it invariably involves an increase or decrease in the energy of the substances involved. Some energy is transferred between the environment and the reactants in the form of heat or light; thus, the reaction products may have more or less energy than the reactants. A reaction is said to be exergonic if the final state is lower on the energy scale than the initial state; in endergonic reactions the opposite is true. Without exception, chemical reactions are only possible if the reactants cross an energy barrier called the activation energy. The rate of a chemical reaction (at a given temperature T) is related to the activation energy E by the Boltzmann population coefficient e-E/kT - that is, the probability of a molecule having an energy greater than or equal to E at a given temperature T. This exponential dependence of the reaction rate on temperature is called the Arrhenius equation.

**Question 0**

In chemistry, what is a property of a substance that is a result of its atomic, molecular or aggregate structure?

**Question 1**

What is not possible unless the reactants exceed the energy barrier called the activation energy?

**Question 2**

What is the probability that the energy of a molecule is greater than or equal to E at a given temperature T?

**Question 3**

Who created the population factor e-E/kT?

**Question 4**

What is the exponential dependence of the reaction rate on temperature?

**Question 5**

In the context of biology, what is a property of a substance that is a consequence of its atomic, molecular or aggregate structure?

**Question 6**

What is always possible except when the reactants cross an energy barrier called the activation energy?

**Question 7**

What is the certainty of a molecule that its energy is greater than or equal to E at a given temperature T?

**Question 8**

Who rejected the population factor e-E/kT?

**Question 9**

What is the exponential independence of the reaction rate on temperature?

**Text number 12**

In biology, energy is a property of all biological systems, from the biosphere to the smallest living organism. In an organism, it is responsible for the growth and development of a biological cell or organ of a biological organism. Energy is therefore often said to be stored in cells in molecular structures such as carbohydrates (including sugars), lipids and proteins, which release energy when they react with oxygen during respiration. In human terms, the human energy equivalent (H-e) (human energy conversion) expresses the relative amount of energy required for human metabolism for a given energy expenditure, assuming an average human energy consumption of 12 500 kJ per day and a basal metabolic rate of 80 watts. For example, if our body operates at (on average) 80 watts, a light bulb operating at 100 watts will operate at 1.25 human equivalent (100 ÷ 80), or 1.25 H-e. In a difficult task lasting only a few seconds, a human can produce thousands of watts, which is many times more than the 746 watts of one official horsepower. In tasks lasting a few minutes, a fit person can produce perhaps 1 000 watts. If the activity has to continue for an hour, the power drops to about 300; if the activity continues all day, 150 watts is about the maximum. The human equivalent helps to understand energy flows in physical and biological systems by expressing energy units in human terms: it gives a "feel" for the use of a given amount of energy.

**Question 0**

In biology, what is a property of all biological systems, from the biosphere to the smallest living organism?

**Question 1**

What is often said about cells storing molecular structures such as carbohydrate, lipid and protein structures?

**Question 2**

What does H-e stand for?

**Question 3**

How many watts are in one official horsepower?

**Question 4**

In chemistry, what is a property of all biological systems, from the biosphere to the smallest living organism?

**Question 5**

What is often said about molecular structures such as carbohydrates, lipids and proteins that cells expel?

**Question 6**

What does E-h stand for?

**Question 7**

How many watts are in half an official horsepower?

**Question 8**

How many watts can a person in poor health produce in a few minutes of work?

**Text number 13**

Plants also use sunlight as chemical potential energy in photosynthesis, when carbon dioxide and water (two low-energy compounds) are converted into high-energy carbohydrates, lipids and proteins. Plants also release oxygen during photosynthesis, which living organisms use as an electron acceptor to release energy from carbohydrates, lipids and proteins. The release of energy stored as heat or light during photosynthesis can occur suddenly by a spark in a forest fire, or it can be released more slowly by animal or human metabolism when these molecules are ingested and enzyme activity triggers catabolism.

**Question 0**

What do plants capture as chemical potential energy in photosynthesis?

**Question 1**

What do plants release during photosynthesis?

**Question 2**

What can trigger a sudden spark?

**Question 3**

What are the two low-energy compounds?

**Question 4**

What is not captured by plants as chemical potential energy in photosynthesis?

**Question 5**

What do plants store during photosynthesis?

**Question 6**

What can trigger a spark after a long time?

**Question 7**

What are the two high-energy compounds?

**Question 8**

what do dead organisms use as an electron acceptor?

**Text number 14**

All living organisms depend on an external source of energy - solar radiation in the case of green plants, chemical energy in some form in the case of animals - to grow and reproduce. The recommended daily intake of 1500-2000 calories (6-8 MJ) for an adult human is taken as a combination of oxygen and food molecules, the latter being mainly carbohydrates and fats, of which glucose (C6H12O6) and stearin (C57H110O6) are convenient examples. Nutrient molecules are oxidised to carbon dioxide and water in mitochondria.

**Question 0**

What do all living organisms depend on to grow and reproduce?

**Question 1**

How many daily calories are recommended for an adult human?

**Question 2**

Where do food molecules oxidise to carbon dioxide and water?

**Question 3**

What do all dead organisms depend on to grow and reproduce?

**Question 4**

How many weekly calories are recommended for an adult human?

**Question 5**

Where do food molecules oxidise to oxygen and water?

**Question 6**

which is based on an internal energy source

**Question 7**

solar radiation red what?

**Text number 15**

It would seem that living organisms are remarkably inefficient (in the physical sense) at using the energy (chemical energy or radiation) they receive, and it is true that most real machines are capable of greater efficiency. In growing organisms, the energy that is converted into heat serves a vital purpose in that it enables the tissue to be well organised in relation to the molecules of which it is made. According to the second law of thermodynamics, energy (and matter) tends to be distributed more evenly throughout the universe: to concentrate energy (or matter) in one particular place, it is necessary to spread a greater amount of energy (as heat) throughout the rest of the universe ("environment").[Note 3] Simpler organisms can achieve higher energy efficiency than more complex organisms, but more complex organisms can occupy ecological niches that are not available to their simpler brethren. The conversion of part of the chemical energy into heat at each step of the metabolic pathway is the physical reason behind the biomass pyramid observed in ecology: taking only the first step of the food chain, of the carbon bound in photosynthesis, estimated at 124.7 Pg/a, 64.3 Pg/a (52%) is used for the metabolism of green plants, i.e. reconverted into carbon dioxide and heat.

**Question 0**

According to which energy tends to be distributed more evenly throughout the universe?

**Question 1**

Which ones are remarkably inefficient at using the energy they receive?

**Question 2**

Complex organisms can use this that are not available to their simpler brethren?

**Question 3**

According to which energy tends to cluster together more throughout the universe?

**Question 4**

Which are remarkably efficient in using the energy they receive?

**Question 5**

Conversion of a fraction of chemical energy to cool energy at each stage of what?

**Question 6**

What is the hypothetical cause of the observed biomass pyramid?

**Question 7**

Can simple organisms use what is not available to their simpler brethren?

**Text number 16**

Sunlight can be stored as gravitational potential energy after it strikes the Earth, for example when water evaporates from the oceans and lands on mountains (where it is released through a hydroelectric dam and can be used to power turbines or generators to produce electricity). Sunlight also influences many weather phenomena, with the exception of those caused by volcanic events. An example of a solar-mediated weather phenomenon is a hurricane, which occurs when large unstable areas of the warm ocean, which have been warming for months, suddenly release some of their thermal energy and cause a few days of violent air movement.

**Question 0**

When can sunlight be stored as gravitational potential energy?

**Question 1**

This affects many weather phenomena, with the exception of those caused by volcanic events.

**Question 2**

What is an example of a weather phenomenon mediated by the sun?

**Question 3**

What happens when large unstable areas of warm ocean that have been warming for months suddenly give up some of their thermal energy to power a few days of violent air movements?

**Question 4**

When can sunlight be stored as gravitational-kinetic energy?

**Question 5**

This does not cause any weather phenomena other than those caused by volcanic events.

**Question 6**

What is an example of a water-mediated weather phenomenon?

**Question 7**

once released from a wind-powered dam, it can be used to power turbines or generators to produce what?

**Question 8**

What happens when large unstable areas of warm ocean that have been warming for months suddenly give up some of their thermal energy to power a few days of violent air movements?

**Text number 17**

The radioactive decay of atoms in the Earth's core releases heat in a slower process. This thermal energy drives plate tectonics and can raise mountains through orogeny. This slow uplift is a form of gravitational potential energy stored in thermal energy that can later be released as active kinetic energy after a landslide triggering event. Earthquakes also release resilient potential energy stored in rocks, ultimately produced from the same radioactive heat sources. According to current thinking, familiar events such as landslides and earthquakes therefore release energy stored as potential energy in the earth's gravitational field or as elastic stress (mechanical potential energy) in the rock. Before that, they involve the release of energy that has been stored in heavy atoms since the collapse and creation of these atoms by long-destroyed supernovae.

**Question 0**

What releases the elastic potential energy stored in rocks?

**Question 1**

What is released by the radioactive decay of atoms in the Earth's core?

**Question 2**

What drives plate tectonics and can raise mountains through orogeny?

**Question 3**

What is mechanical potential energy?

**Question 4**

What releases the elastic kinetic energy stored in rocks?

**Question 5**

What is released by the radioactive decay of atoms in the Martian core?

**Question 6**

What prevents plate tectonics and can raise mountains through orogeny?

**Question 7**

What is non-mechanical potential energy?

**Question 8**

what has been created from the energy stored in heavy atoms after the collapse of recently destroyed supernova stars?

**Text number 18**

In cosmology and astronomy, stars, novae, supernovae, quasars and gamma-ray bursts are the most energetic deformations of matter in the universe. All stellar phenomena (including solar activity) are caused by a variety of energy transformations. The energy of such transformations comes either from the gravitational collapse of matter (usually molecular hydrogen) into different classes of astronomical objects (stars, black holes, etc.) or from nuclear fusion (of lighter elements, mainly hydrogen). The nuclear fusion of hydrogen in the Sun also releases another potential store of energy created at the time of the Big Bang. The theory is that space was expanding at the time and the universe was cooling too fast for hydrogen to fully fuse into heavier elements. This meant that hydrogen represented a store of potential energy that could be released by fusion. Such a fusion process is triggered by the heat and pressure generated by the gravity of hydrogen clouds as stars are formed from the hydrogen clouds, and some of the fusion energy is then converted into sunlight.

**Question 0**

What do different energy transformations achieve?

**Question 1**

What releases the second potential store of energy that was created at the time of the Big Bang?

**Question 2**

According to which theory, space expanded and the universe cooled too fast for hydrogen to completely fuse into heavier elements?

**Question 3**

Hydrogen represents a store of potential energy that can be released by what?

**Question 4**

What do different energy transfers achieve?

**Question 5**

What preserves the second store of potential energy that was created at the time of the Big Bang?

**Question 6**

According to which theory did space expand and the universe cool very slowly so that hydrogen could completely fuse into heavier elements?

**Question 7**

Oxygen is a store of potential energy that can be released by what?

**Question 8**

What process is triggered by the heat and pressure generated by the gravity of nitrogen clouds?

**Text number 19**

In quantum mechanics, energy is defined by an energy operator as the time derivative of a wave function. Schrödinger's equation equates the energy operator with the total energy of a particle or system. Its results can be taken as a definition of energy measurement in quantum mechanics. The Schrödinger equation describes the space and time dependence of the slowly varying (non-relativistic) wave function of quantum systems. The solution of this equation for a bound system is discrete (a set of allowed states, each characterized by an energy level), which leads to the concept of quanta. In the solution of Schrödinger's equation for any oscillator (vibrator) and electromagnetic waves in vacuum, the resulting energy states are related to frequency by the Planck ratio: (where is Planck's constant and frequency). In the case of an electromagnetic wave, these energy states are called light quanta or photons.

**Question 0**

In quantum mechanics, what is defined by the energy operator as the time derivative of a wave function?

**Question 1**

What equates an energy operator to a particle or system at full energy?

**Question 2**

What describes the dependence of the slowly changing wave function of quantum systems on space and time?

**Question 3**

In quantum mechanics, what is defined by the energy operator as the time derivative of a sine function?

**Question 4**

What equates an energy operator with the partial energy of a particle or system?

**Question 5**

What describes the dependence of the rapidly changing wave function of quantum systems on space and time?

**Question 6**

What is the set of allowed spaces, none of which has a specific energy level?

**Question 7**

In the case of an electromagnetic wave, these are called light quanta or protons.

**Text number 20**

For example, consider the annihilation of an electron and a positron, where the rest mass of the individual particles is destroyed, but the inertial equivalent (its invariant mass) of the system of two particles is conserved (because all energy is related to mass), and this inertial equivalent and invariant mass is carried away by the photons, which are individually massless but retain their mass as a system. This is a reversible process - the reverse process is called pair formation - where the rest mass of the particles is created from the energy of two (or more) annihilating photons. In this system, matter (electrons and positrons) is destroyed and converted into immaterial energy (photons). However, the total mass and energy of the system does not change during this interaction.

**Question 0**

What is it called when the rest mass of individual particles is destroyed, but the inertia equivalent of a system of two particles is conserved?

**Question 1**

What is the name of the reversal process?

**Question 2**

What is the process by which the rest mass of a particle is created from the energy of two or more annihilating photons?

**Question 3**

What is it called when the rest mass of individual particles is destroyed, but the inertia equivalent of a three-particle system remains?

**Question 4**

What is the reverse process?

**Question 5**

What is the process by which the rest mass of a particle is destroyed by the energy of two or more annihilating photons?

**Question 6**

what is created and transformed into intangible energy?

**Question 7**

What is the energy of matter?

**Text number 21**

According to Carnot's theorem and the second law of thermodynamics, there are strict limits to how efficiently heat can be converted into work in a cyclic process such as a thermal engine. However, some energy conversions can be quite efficient. The direction of energy transformations (what kind of energy is transformed into what kind of energy) is often determined by entropy (the even distribution of energy among all available degrees of freedom). In practice, all energy transformations are allowed on a small scale, but certain larger transformations are not allowed because it is statistically unlikely that energy or matter will randomly shift to more concentrated forms or smaller states.

**Question 0**

Where does it say that there are strict limits to how efficiently heat can be converted into work in a cyclic process?

**Question 1**

What is the direction of energy conversion?

**Question 2**

What is often determined by entropy?

**Question 3**

Why are certain higher conversions not allowed?

**Question 4**

According to which there are no limits to how efficiently heat can be converted into work in a cyclic process?

**Question 5**

What is the direction of energy translations?

**Question 6**

What is never defined in terms of entropy?

**Question 7**

Why are certain higher conversions allowed?

**Question 8**

what is the unequal distribution of energy among all available degrees of freedom?

**Text number 22**

Energy transformations over time in the universe are characterised by the 'release' (transformation into more active forms of energy, such as kinetic or radiant energy) of various potential energies that have been available since the Big Bang, when a triggering mechanism is available. Familiar examples of such processes include nuclear synthesis, which releases energy that was originally "stored" in heavy isotopes (such as uranium and thorium), and nucleosynthesis, a process that eventually uses the gravitational potential energy of supernovae, released by the gravitational collapse of supernovae, to store energy in the creation of these heavy elements before they were incorporated into the solar system and Earth. This energy is triggered and released in nuclear fission bombs or civil nuclear power generation. Similarly, in a chemical explosion, chemical potential energy is converted into kinetic and thermal energy in a very short time. Another example is the pendulum. At its highest points, the kinetic energy is zero and the gravitational potential energy is at its maximum. At the lowest point, the kinetic energy is at its maximum and corresponds to a decrease in potential energy. Assuming (unrealistically) that there is no friction or other losses, the energy conversion between these processes would be perfect, and the pendulum would continue to swing forever.

**Question 0**

Name an example of a heavy isotope?

**Question 1**

Give another example of a heavy isotope.

**Question 2**

What is the process that ultimately used gravitational potential energy to create these heavy elements before they were incorporated into the solar system and Earth?

**Question 3**

What is converted into kinetic energy and thermal energy in a chemical explosion in a short time?

**Question 4**

Name an example of a heavy transitoop?

**Question 5**

Give another example of a heavy transit journey.

**Question 6**

What is the process that eventually used gravitational potential energy to create these heavy elements before they were incorporated into the lunar system and Earth?

**Question 7**

What is converted into kinetic energy and wind energy in a chemical explosion in a short time?

**Question 8**

what active forms of energy can be converted?

**Text number 23**

Energy becomes weight when it is trapped in a system with zero potential and can be weighed. It also corresponds to mass, and this mass is always associated with it. Mass also corresponds to a certain amount of energy, and is also always associated with it, as described in the mass-energy equivalence. The formula E = mc², proposed by Albert Einstein (1905), quantifies the relationship between rest mass and rest energy within the specific concept of relativity. In different theoretical frameworks, similar formulae have been derived by J. J. Thomson (1881), Henri Poincaré (1900) and Friedrich Hasenöhrl (1904), among others (see Mass-energy equivalence#History for more details).

**Question 0**

When does energy become weight?

**Question 1**

Massa is also responsible for what?

**Question 2**

Who created the formula E = mc2?

**Question 3**

In what year did Einstein create E = mc2?

**Question 4**

What defines the relationship between rest mass and rest energy within the concept of special relativity?

**Question 5**

When does energy give rise to height?

**Question 6**

Massa does not match what?

**Question 7**

Who created the formula E = nc2?

**Question 8**

What year did Weinstein create E = mc2?

**Question 9**

What defines the relationship between rest mass and rest energy outside the concept of relativity?

**Text number 24**

Matter can be converted into energy (and vice versa), but mass can never be destroyed; rather, the equivalence of mass and energy remains constant for both matter and energy in all processes in which they are converted into each other. However, since mass is very large for an ordinary human scale, the conversion of an ordinary amount of matter (say 1 kg) into other forms of energy (such as heat, light and other forms of radiation) can release enormous amounts of energy (~ joule = 21 megatons of TNT), as can be observed in nuclear reactors and nuclear weapons. In contrast, the mass equivalent of a unit of energy is negligible, making it difficult to measure the energy loss (mass dissipation) of most systems by weight unless the energy loss is very large. Examples of the conversion of energy into matter (i.e. the conversion of kinetic energy into particles with rest mass) can be found in high-energy nuclear physics.

**Question 0**

What can a substance change into?

**Question 1**

What can energy be converted into?

**Question 2**

Why is it difficult to measure energy loss by weight?

**Question 3**

Where can you find examples of energy being converted into matter?

**Question 4**

What can matter not be transformed into?

**Question 5**

What can energy not be converted into?

**Question 6**

Why is it difficult to measure energy yield by weight?

**Question 7**

Where can you find no examples of energy being converted into matter?

**Question 8**

the equivalent of 12 megatonnes of TNT...

**Text number 25**

Thermodynamics divides energy conversion into two types: reversible and irreversible processes. An irreversible process is one in which energy dissipates (spreads out) into the empty energy spaces available in the volume, from which it cannot be restored to a more concentrated form (less quantum states) without destroying even more energy. A reversible process is a process in which no such decay occurs. For example, the conversion of energy from one type of potential field to another is reversible, as in the pendulum system described above. In processes where heat is generated, the lower energy quantum states that appear as potential excitations of the interatomic fields act as a store for some of the energy that cannot be recovered to be converted with 100% efficiency into other forms of energy. In this case, some of the energy must remain as heat and cannot be fully recovered as usable energy, except at the cost of some other kind of heat-like increase in the disorder of quantum states in the universe (such as expansion of matter or randomization in a crystal).

**Question 0**

Thermodynamics divides energy information into what two types?

**Question 1**

What divides energy conversion into two types, reversible and irreversible processes?

**Question 2**

A reversible process is a process where this does not happen.

**Question 3**

Thermodynamics multiplies energy information into what two types?

**Question 4**

What does not divide energy conversion into two types, reversible and irreversible processes?

**Question 5**

A regressive process is a process where this happens.

**Question 6**

What is not translatable?

**Question 7**

What must not remain partially warm?

**Text number 26**

As the universe evolves over time, more and more of its energy gets trapped in irreversible states (i.e. heat or other forms of disorder). This has been called the inevitable thermodynamic heat death of the universe. In this heat death, the energy of the universe does not change, but the fraction of energy that is available to do the work by means of a heat engine or to convert it into other usable forms of energy (by means of generators connected to heat engines) is constantly decreasing.

**Question 0**

As the universe evolves over time, more and more of its energy gets trapped in what?

**Question 1**

What is referred to when more and more energy is stuck in irreversible spaces?

**Question 2**

What doesn't change in this heat loss of energy?

**Question 3**

As the universe evolves over time, less and less of its energy is trapped in what?

**Question 4**

What is being referred to when more and more energy is released from irreversible spaces?

**Question 5**

What changes in this heat loss of energy?

**Question 6**

how much energy is not available for work using a heat engine?

**Question 7**

what is not connected to the thermal engines?

**Text number 27**

Energy conservation states that energy cannot be created (produced) or destroyed by itself. It can only be transformed. The total amount of energy entering the system must be equal to the total amount of energy leaving the system and the change in energy within the system. Energy is subject to a strict global conservation law; that is, whenever the total energy of a system of particles whose interactions are clearly independent of time is measured (or calculated), it is found that the total energy of the system always remains constant.

**Question 0**

According to which energy cannot be created or destroyed by itself?

**Question 1**

What should be the total amount of energy entering the system?

**Question 2**

What cannot be created or destroyed by itself, but can only change?

**Question 3**

According to which energy can either be created or destroyed by itself?

**Question 4**

What is the total amount of energy entering the system, which must not be equal to what?

**Question 5**

What cannot be created or destroyed by itself and cannot be changed?

**Question 6**

whose interaction depends explicitly on time?

**Question 7**

the total energy of the system never stays what?

**Text number 28**

This law is a fundamental principle of physics. As Noether's theorem showed, the conservation of energy is a mathematical consequence of the translational symmetry of time, a property of most phenomena below the cosmic scale that makes them independent of their position in the time coordinate system. In other words, yesterday, today and tomorrow are physically inseparable. This is because energy is a quantity that is the canonical conjugate of time. This mathematical intertwining of energy and time also leads to the uncertainty principle - it is impossible to determine the exact amount of energy in any given period of time. The uncertainty principle should not be confused with the conservation of energy - rather, it sets mathematical limits within which energy can, in principle, be defined and measured.

**Question 0**

What shows that the conservation of energy is a mathematical consequence of the translational symmetry of time?

**Question 1**

What is the quantity that is the canonical conjugate of time?

**Question 2**

This mathematical entanglement of energy and time leads to what?

**Question 3**

What makes it impossible to determine the exact amount of energy over any given period of time?

**Question 4**

What shows that the conservation of energy is a mathematical consequence of the translational asymmetry of time?

**Question 5**

What is the property that is canonical conjugate with time?

**Question 6**

This mathematical entanglement of energy and space leads to what?

**Question 7**

What makes it possible to determine the exact amount of energy over any given period of time?

**Question 8**

what should be confused with the uncertainty principle?

**Text number 29**

In particle physics, this inequality allows a qualitative understanding of the virtual particles that carry momentum and whose exchange with real particles is responsible for creating all known fundamental forces (more precisely, fundamental interactions). Virtual photons (which are simply the lowest quantum-mechanical energy state of photons) are also responsible for the electrostatic interactions between electric charges (resulting in Coulomb's law), the spontaneous radiative decay of the vanished states of atoms and nuclei, the Casimir force, van der Waals bonding forces and some other observable phenomena.

**Question 0**

What are simply the lowest quantum mechanical energy states of photons?

**Question 1**

What is responsible for the electrostatic interaction between electric charges?

**Question 2**

Where does Coulomb's law come from?

**Question 3**

What are simply the highest quantum mechanical energy states of photons?

**Question 4**

What is responsible for the non-electrostatic interaction between electric charges?

**Question 5**

Where does Casimir's law come from?

**Question 6**

In what kind of physics does this equality allow for a qualitative understanding of virtual particles that carry a quantity of motion?

**Question 7**

what are not known as basic forces?

**Text number 30**

Energy transfer can be considered as a special case in systems that are closed to mass transfer. The fraction of energy that is transferred over distance by conservative forces is measured as the work done by the source system on the receiving system. The part of the energy that does not work during the transfer is called heat.[Note 4] Energy can be transferred between systems in many different ways. Examples include the transfer of electromagnetic energy via photons, physical collisions that transfer kinetic energy,[note 5] and the resulting transfer of thermal energy.

**Question 0**

What can be thought of the specific case of systems that are closed to transfers?

**Question 1**

What is called energy that does not do any work during the transfer?

**Question 2**

Give one example of how energy can be transferred between systems?

**Question 3**

What can be thought of as a typical case of systems that are open to transfers?

**Question 4**

What is the energy that is at work during the transfer?

**Question 5**

Give one example of how energy cannot be transferred between systems?

**Question 6**

what type of inductive energy transmitter?

**Question 7**

What are physical collisions that do not transfer kinetic energy?

**Text number 31**

According to the first law of thermodynamics, energy (but not necessarily thermodynamic free energy) is always conserved and heat flow is one form of energy transfer. For homogeneous systems with well-defined temperature and pressure, a commonly used consequence of the first law is that for a system subjected only to pressure forces and heat transfer (e.g. a gas cylinder) without chemical changes, the differential change in the internal energy of the system (when the energy increase is denoted by a positive quantity) is as follows

**Question 0**

Which argues that energy is always conserved and that heat flow is a form of energy transfer.

**Question 1**

The first law of thermodynamics says that what is always conserved and that heat flow is a form of energy transfer?

**Question 2**

What is a commonly used corollary of the first law?

**Question 3**

Which argues that energy is always conserved and that cool flow is a form of energy transfer.

**Question 4**

According to the first law of thermodynamics, what never survives and that heat flow is a form of energy transfer?

**Question 5**

What is the never-used consequence of the first law?

**Question 6**

What is an example of a gas pyramid filled with gas?

**Question 7**

What type of system has poorly defined temperature and pressure?

**Text number 32**

This principle is vital for understanding the behaviour of entropy, a quantity closely related to energy. Entropy is a measure of the evenness of the distribution of energy between parts of a system. When an isolated system is given more degrees of freedom (i.e. given new available energy states that are the same as the existing states), the total energy is spread evenly over all available degrees without distinguishing between 'new' and 'old' degrees. This mathematical result is called the second law of thermodynamics.

**Question 0**

What is the principle that is vital to understanding the behaviour of a quantity closely related to energy?

**Question 1**

What is entropy?

**Question 2**

What is the mathematical result of giving more degrees of freedom to an isolated system?

**Question 3**

What is the principle that is vital to understanding the behaviour of an energy-independent quantity?

**Question 4**

What is dystopia?

**Question 5**

What is the non-mathematical result of giving more degrees of freedom to an isolated system?

**Question 6**

When less degrees of freedom are given to an isolated system, what happens to the total energy?

**Question 7**

What is the measure of the odd distribution of energy between the parts of a system?

**Document number 328**

**Text number 0**

East Prussia enclosed most of the lands of the old Prussian ancestors in the Baltic. In the 13th century, the original Prussians were conquered by crusading Teutonic Knights. The original Baltic survivors of the conquest gradually converted to Christianity. Germanisation and colonisation in the following centuries made the Germans the dominant ethnic group, while the Poles and Lithuanians formed a minority. East Prussia was part of the monastic state of the Teutonic Knights from the 13th century onwards. After the Second Peace of Thorn in 1466, it became a fiefdom of the Kingdom of Poland. In 1525, the province became a duchy of Prussia with the honour of Prussia. The old Prussian language had become extinct in the 17th or early 1700s.

**Question 0**

Who defeated the original Prussians in the 13th century?

**Question 1**

To which religion did the Baltics gradually convert?

**Question 2**

Which ethnic group became dominant after the 13th century, just a few hundred years later?

**Question 3**

What other groups in this period are made up of minorities?

**Question 4**

When did the old Prussian language become extinct?

**Question 5**

In which century did the Teutonic Knights originate?

**Question 6**

Which country were the Tea Knights from?

**Question 7**

What year was the first Thorn Peace?

**Question 8**

Which ethnic group ruled the Kingdom of Poland?

**Question 9**

What language did the Knights Templar speak?

**Text number 1**

As the Duchy of Brandenburg was located outside the core area of the Holy Roman Empire, the electors of Brandenburg could declare themselves King of Prussia from 1701. When most of western Royal Prussia was incorporated into the first partition of the Polish-Lithuanian Commonwealth in 1772, eastern (duchy) Prussia was incorporated overland into the rest of Prussia and reorganised as a province the following year (1773). Between 1829 and 1878, the province of East Prussia was merged with West Prussia to form the province of Prussia.

**Question 0**

Why could electoral princes declare themselves King of Prussia?

**Question 1**

In which year did the electors choose themselves as king?

**Question 2**

In which period did East Prussia and West Prussia unite to form Prussia?

**Question 3**

In what year was the Holy Roman Empire founded?

**Question 4**

What was Prussia like before 1773?

**Question 5**

How did the inhabitants of East Prussia enter the rest of Prussia before 1772?

**Question 6**

How did the Holy Roman Empire become part of Brandenburg?

**Text number 2**

The Kingdom of Prussia became the leading state of the German Empire after its creation in 1871. However, the post-World War I Treaty of Versailles ceded West Prussia to Poland and made East Prussia an exclave of Weimar Germany (the new Polish Corridor separated East Prussia from the rest of Germany), while the Memel region was carved out and annexed to Lithuania in 1923. After the defeat of Nazi Germany in World War II in 1945, the war-torn East Prussia was divided, at Joseph Stalin's insistence, between the Soviet Union (the Kaliningrad region of the Russian SFSR and the provinces of the Klaipėda region of the Lithuanian SSR) and the Polish People's Republic (the Warmian-Masurian Voivodeship). The capital Königsberg was renamed Kaliningrad in 1946. The German population of the province was largely evacuated during the war or deported shortly afterwards in the post-World War II deportation of Germans. An estimated 300,000 (about one fifth of the population) died either in wartime bombings or in the defensive battles in the province[citation needed].

**Question 0**

In what year did the Kingdom of Prussia become the leading state in the German Empire?

**Question 1**

Which well-known treaty would finally give West Prussia to Poland?

**Question 2**

What year did the Nazis fall in World War II?

**Question 3**

How many died trying to defend Kaliningrad province?

**Question 4**

How many people lived in Kaliningrad in 1946?

**Question 5**

In what year was the Kingdom of Prussia founded?

**Question 6**

What year did Joseph Stalin come to power?

**Text number 3**

At the invitation of Duke Konrad I of Masovia, the Teutonic Knights took over Prussia in the 13th century and established a monastic state to govern the conquered Old Prussians. The local Old Prussian (in the north) and Polish (in the south) toponyms were gradually Germanised. The expansionist policy of the Order, which included the conquest of Pomerania and Gdańsk/Danzig in Poland and western Lithuania, brought them into conflict with the Kingdom of Poland and embroiled them in several wars, culminating in the Polish-Lithuanian-Teutonic War, in which the united armies of Poland and Lithuania defeated the Teutonic Order at the Battle of Grunwald (Tannenberg) in 1410. Its defeat was formalised in the Second Treaty of Thorn in 1466, which ended the thirteen-year war and left the former Polish territory of Pomerania/Pomerania under Polish control. Together with Warmia, it formed the Royal Province of Prussia. East Prussia remained under the knighthood, but as a Polish fiefdom. The arrangements made by the Polish kings in 1466 and 1525 were not confirmed by the Holy Roman Empire, nor were the earlier achievements of the Teutonic Knights.

**Question 0**

Which group took over Prussia in the 13th century?

**Question 1**

Which two regions were slowly Germanised in the 13th century?

**Question 2**

Where did the knights of expansionary policy finally lead?

**Question 3**

What year was the second Thorn contract signed?

**Question 4**

In what year was the Kingdom of Poland founded?

**Question 5**

Where did the Teutonic Knights come from?

**Question 6**

What was the name of the first war between the Teutonic Knights and the Kingdom of Poland?

**Question 7**

In what year was Warmia founded?

**Question 8**

Who ran the Kingdom of Poland?

**Text number 4**

The Teutonic Order lost East Prussia when the Grand Master Albert of Brandenburg-Ansbach converted to Lutheranism and lands the Prussian branch of the Teutonic Order in 1525. Albert established himself as the first Duke of the Duchy of Prussia and vassal of the Polish crown at the Prussian Court of Appeal. Walter von Cronberg, the next Grand Master, received the title of Prussian after the Diet of Augsburg in 1530, but the Order never regained control of the territory. In 1569, the electors of the Duchy of Hohenzollern of the Margraviate of Brandenburg became joint rulers with Albert's son, the infirm Albert Friedrich.

**Question 0**

Who converted to Lutheranism and secularised the Prussian branch of the Teutonic Order?

**Question 1**

In what year did the Teutonic Order lose East Prussia?

**Question 2**

How did Albert establish himself?

**Question 3**

Who led the Teutonic Knights?

**Question 4**

In what year was Albert Frederick born?

**Question 5**

In what year was the Teutonic Order founded?

**Question 6**

Who was the Polish crown?

**Question 7**

In what year did the Teutonic Knights begin to rule East Prussia?

**Text number 5**

Maximilian III, Grand Master of the Teutonic Order, son of Emperor Maximilian II, died in 1618. When Maximilian died, the family of Albert became extinct, and the Duchy of Prussia passed to the electors of Brandenburg, forming Brandenburg-Prussia. Taking advantage of the Swedish invasion of Poland in 1655, and instead of fulfilling his vassalage obligations to the Kingdom of Poland by allying with the Swedes and then concluding the treaties of Wehlau, Labiau and Oliva, Elector and Duke Frederick William succeeded in revoking the sovereignty of the King of Poland over the Duchy of Prussia in 1660. The absolutist crown prince also subordinated the noble estates of Prussia.

**Question 0**

In what year did Maximilian III die?

**Question 1**

What happened as a result of Maximilian's death?

**Question 2**

Who abolished the Polish king's sovereignty over Prussia in 1660?

**Question 3**

In what year was Maximilian III born?

**Question 4**

What year was the Wehlau agreement signed?

**Question 5**

In what year did Poland gain sovereignty over the Duchy of Prussia?

**Question 6**

In what year was the Oliva agreement signed?

**Question 7**

Who was the King of Poland?

**Text number 6**

Although Brandenburg was part of the Holy Roman Empire, the lands of Prussia were not part of the Holy Roman Empire, but were under the control of the Grand Masters of the Teutonic Order and under the Emperor. In return for supporting Emperor Leopold I in the War of the Spanish Succession, Elector Frederick III was crowned 'King of Prussia' in 1701. The new kingdom, ruled by the Hohenzollern dynasty, was known as the Kingdom of Prussia. The name 'Kingdom of Prussia' was gradually applied to the various regions of Brandenburg-Prussia. To distinguish it from the larger entity, the former Duchy of Prussia was known as Altpreußen ('Old Prussia'), the Province of Prussia or 'East Prussia'.

**Question 0**

To which ruling power did Brandenburg belong?

**Question 1**

Which jurisdiction did the Prussian lands fall under?

**Question 2**

Who was elected King of Prussia in 1701?

**Question 3**

What was the former Duchy of Prussia known as?

**Question 4**

In what year was Emperor Leopold I crowned?

**Question 5**

What year was the War of the Spanish Succession fought?

**Question 6**

Who was the last leader of the Duchy of Prussia?

**Question 7**

In what year did the Duchy of Prussia become East Prussia?

**Question 8**

Who was one of the Grand Masters of the Teutonic Order?

**Text number 7**

About a third of the population of East Prussia died in the plague and famine of 1709-1711, including the last speakers of Old Prussian. The plague, probably brought by foreign troops during the Great Northern War, killed 250 000 East Prussians, especially in the eastern part of the province. Crown Prince Frederick William I led the reconstruction of East Prussia and founded numerous towns. Thousands of Protestants expelled from the Archdiocese of Salzburg were allowed to settle in the depopulated East Prussia. Imperial Russian troops occupied the province during the Seven Years' War.

**Question 0**

What wiped out a third of the population of East Prussia in the early 1700s?

**Question 1**

What was lost in Prussian history during the plague?

**Question 2**

Which army occupied a large part of East Prussia?

**Text number 8**

In the first partition of Poland in 1772, King Frederick the Great of Prussia annexed the neighbouring Royal Prussia, or Polish Pomerania (Gdańsk Pomerania or Pomerelia), the Principality of Malbork, Chełmno and Warmia, thus creating a "Polish Corridor" between his lands of Prussia and Pomerania and cutting off the remaining Poland from the Baltic coast. The Warmia region was incorporated into the former Duchy of Prussia, which was renamed East Prussia by an administrative act of 31 January 1773. The former Polish Pomeranian lands behind the Vistula River, together with the lands of Malbork and Chełmno, formed the province of West Prussia, with Marienwerder (Kwidzyn) as its capital. The Polish Diet ratified the cession on 30 September 1773, after which Frederick continued officially calling himself 'King of Prussia'.

**Question 0**

In what year was Royal Prussia annexed?

**Question 1**

In which year was the Warmia region incorporated into the Community?

**Question 2**

What was ratified in 1773 in Prussia?

**Question 3**

In what year was Marienwerder founded?

**Question 4**

What was the capital of Royal Prussia?

**Question 5**

What was the capital of Poland?

**Question 6**

Who was the King of Poland?

**Question 7**

In what year did the Duke of Prussia cease to exist?

**Text number 9**

After the disastrous defeat of the Prussian army at the Battle of Jena-Auerstedt in 1806, Napoleon occupied Berlin and persuaded the Prussian General Staff to swear an oath of allegiance to him, while King Frederick William III and his wife Louise fled via Königsberg and the Curonian Peninsula to Memel. The French troops immediately gave chase, but were delayed by an East Prussian detachment led by General Anton Wilhelm von L'Estocq at the Battle of Eylau on 9 February 1807. Napoleon was forced to remain in Finckenstein Palace, but in May, after a 75-day siege, his troops under Field Marshal François Joseph Lefebvre succeeded in capturing the city of Danzig, which had been stubbornly defended by Count General Friedrich Adolf von Kalkreuth. On 14 June, Napoleon ended the war of the Fourth Coalition with the victory at the Battle of Friedland. Frederick William and Queen Louise met Napoleon to negotiate peace, and on 9 July the King of Prussia signed the Treaty of Tilsit.

**Question 0**

What defeat led Prussia to swear allegiance to Napoleon?

**Question 1**

Through which city did King Frederick William escape from Prussia?

**Question 2**

In what year did Napoleon end the war of the Fourth Coalition?

**Question 3**

In which country is Königsberg located?

**Question 4**

Who was the leader of the army Napoleon defeated at the Battle of Friedland?

**Question 5**

Which military leader did Napoleon defeat at the Battle of Jena-Auerstedt?

**Question 6**

Which country was Memel in?

**Text number 10**

The Prussian reforms initiated by Heinrich Friedrich Karl vom und zum Stein and Karl August von Hardenberg included the establishment of the Königsberg Oberlandesgericht, a municipal law, economic freedom and the emancipation of serfs and Jews. As part of the restoration of Prussia by the Congress of Vienna in 1815, the regions of East Prussia were reorganised into the Regierungsbezirke of Gumbinnen and Königsberg. From 1905 onwards, the southern regions of East Prussia formed a separate district of Allenstein. East and West Prussia were united, first in a personal union in 1824 and then in a de facto union in 1829 to form the Province of Prussia. The united province was again divided into the separate provinces of East and West Prussia in 1878.

**Question 0**

Who initiated the Prussian reforms?

**Question 1**

What was included in the reform?

**Question 2**

In what year were East and West Prussia united for the first time?

**Question 3**

When did East and West Prussia split again?

**Question 4**

Who was the leader of the Prussian province?

**Question 5**

Who was the first head of the Allenstein Regierungsbezirk?

**Question 6**

Who was the leader of the province of East Prussia in 1878?

**Question 7**

Who was the leader of West Prussia in 1878?

**Question 8**

What were the northern districts of East Prussia in 1905?

**Text number 11**

The population of the province in 1900 was 1 996 626, with a religious composition of 1 698 465 Protestants, 269 196 Roman Catholics and 13 877 Jews. The Low Prussian dialect prevailed in East Prussia, but the High Prussian dialect was spoken in Warmia. The number of Masurian, Corsican and Prussian-Lithuanian speakers decreased over time with Germanisation. The Polish-speaking population was concentrated in the southern parts of the province (Masuria and Warmia), and all German geographical atlases at the beginning of the 20th century identified the southern part of East Prussia as Polish, with an estimated 300 000 Poles at the time. The Kursenieks inhabited the areas around the Kuronian lagoon, while the Lithuanian-speaking Prussians were concentrated in the north-east (Little Lithuania). The old Prussian ethnic group became completely Germanised over time, and the old Prussian language became extinct in the 1700s.

**Question 0**

What was the population of the Prussian province in 1900?

**Question 1**

Which religious group formed the majority of the population of Prussia?

**Question 2**

Which three groups declined in Prussia due to Germanisation?

**Question 3**

How many people in East Prussia spoke the Low Prussian dialect?

**Question 4**

To which religion did most Prussian Lithuanians belong?

**Question 5**

How many Kursenieke were there around the Kuronian lagoon?

**Question 6**

What language did most Jews speak?

**Question 7**

What religion was Kursenieki?

**Text number 12**

At the beginning of the First World War, East Prussia became a theatre of war when the Russian Empire invaded the country. The Russian army initially met little resistance, as the bulk of the German army was directed to the Western Front according to Schlieffen's plan. Despite early successes and the capture of the towns of Rastenburg and Gumbinnen at the Battle of Tannenberg in 1914 and the Second Battle of the Masurian Lakes in 1915, the Russians suffered a decisive defeat and were forced to retreat. The Russians were followed by the advance of the German army into Russian territory.

**Question 0**

Which country invaded East Prussia in the First World War?

**Question 1**

Why did the Russian army meet so little resistance as it moved through Prussia?

**Question 2**

What year was the Battle of Tannenberg fought?

**Question 3**

In what year did the First World War start?

**Question 4**

Who was the German army fighting on the Western Front?

**Question 5**

What year was the first Battle of the Masurian Lakes fought?

**Question 6**

What year did the First World War end?

**Text number 13**

When Emperor Wilhelm II abdicated power by force in 1918, Germany became a republic. Most of West Prussia and the former Prussian province of Posen, territories annexed by Prussia in the 17th century partitions of Poland, were ceded to the Second Polish Republic under the Treaty of Versailles. East Prussia became an exclave, separated from mainland Germany. After the Treaty of Versailles, East Prussia was separated from Germany as an exclave; Memelland was also separated from the province. As most of West Prussia became part of the Second Republic of Poland as a corridor of Poland, the former Marienwerder district of West Prussia became part of East Prussia (Regierungsbezirk Westpreußen). The district of Soldau in the Allenstein region was also part of the Second Republic of Poland. Seedienst Ostpreußen was established to provide an independent transport service to East Prussia.

**Question 0**

In which year did Germany become a republic?

**Question 1**

What was implemented that separated East Prussia from Germany?

**Question 2**

What was done to organise transport in East Prussia?

**Question 3**

In which year was William II crowned emperor?

**Question 4**

In what year was the Second Republic of Poland founded?

**Question 5**

What year was the Treaty of Versailles signed?

**Question 6**

Who was the first leader of the Second Republic of Poland?

**Question 7**

Which was one of the countries that forced Emperor William II to give up power?

**Text number 14**

Erich Koch led the Nazi Party of East Prussia from 1928, and was the district leader from 1932. This period was characterised by efforts to collectivise local agriculture and by a ruthlessness towards critics within and outside the party. He also had long-term plans for large-scale industrialisation in a largely agricultural province. These actions made him unpopular with local peasants. By 1932, the local paramilitary SA had already begun to terrorise its political opponents. On the night of 31 July 1932, the Social Democrat headquarters in Königsberg, the Otto Braun House, was bombed. Communist politician Gustav Sauf was killed; Otto Wyrgatsch, editor of the Social Democratic newspaper Königsberger Volkszeitung, and Max von Bahrfeldt, a politician from the German People's Party, were seriously injured. Members of the Reichsbanner were attacked and Kurt Kotzan, the local Reichsbanner chairman in Lötzen, was murdered on 6 August 1932.

**Question 0**

Who was the leader of the Nazi Party in East Prussia?

**Question 1**

What were Koch's big plans?

**Question 2**

What even happened in Königsberg in the summer of 1932?

**Question 3**

Who was killed in the attack by social democrats?

**Question 4**

In which year did Konigsberger Volkszeitung become editor-in-chief?

**Question 5**

In what year did Kurt Kotzan become chairman of the Lotzen Reichsbanner?

**Question 6**

Who was the local Reichsbanner chairman in Königsberg?

**Question 7**

In which year did Max von Bahrfeldt become a politician for the German People's Party?

**Question 8**

In what year was the East Prussia Nazi Party founded?

**Text number 15**

Through publicly funded emergency aid programmes focusing on agricultural land improvement projects and road building, East Prussia's Erich Koch plan was supposed to make the province an unemployment-free zone.On 16 August 1933, Koch announced to Hitler that unemployment had been completely banished from East Prussia, to the admiration of the entire Reich. Koch's industrialisation plans led him into conflict with R. Walther Darré, who was Reichsbauernführer and Minister of Agriculture. Darré, a neo-populist rural romantic, wanted to implement his vision of an agrarian East Prussia. When his 'Land' representatives challenged Koch's plans, Koch had them arrested.

**Question 0**

How did the people of East Prussia pay for land improvements and road building?

**Question 1**

What was the name of the initiative to help new projects in East Prussia?

**Question 2**

What did Koch report to Hitler in 1933?

**Question 3**

On what day did R. Walther Darre become the kingdom's peasant leader?

**Question 4**

What religion was Erich Koch?

**Question 5**

On what day was a representative of Koch's "country" arrested?

**Question 6**

What was Hitler's position?

**Question 7**

How much unemployment was there in the whole country?

**Text number 16**

In 1938, the Nazis changed about a third of the region's toponyms by deleting, Germanising or simplifying several old Prussian names, as well as Polish or Lithuanian names that had originated from Prussian immigrants and refugees during and after the Prussian Reformation. More than 1 500 places were ordered to be renamed by 16 July 1938, in accordance with a decree issued by Gauleiter and Oberpräsident Erich Koch and initiated by Adolf Hitler. Many who refused to cooperate with the Nazi German authorities were sent to concentration camps where they were held as prisoners until their death or release.

**Question 0**

In what year did the Nazis change about a third of the toponyms in the region?

**Question 1**

How many places were renamed when the Nazis arrived in Prussia?

**Question 2**

What would happen if some people did not follow the Nazis' demands?

**Question 3**

In what year did the Protestant Reformation begin?

**Question 4**

What was Adolf Hitler's position in 1938?

**Question 5**

In what year did Adolf Hitler come to power?

**Question 6**

How many Polish seats were ordered to be renominated?

**Question 7**

How many Lithuanian seats were ordered to be renominated?

**Text number 17**

In 1939, East Prussia had a population of 2.49 million, 85% of whom were ethnic Germans, Poles in the south, estimated by Poles to number between 300,000 and 350,000 between the wars, and Latvian-speaking Kursenieks and Lithuanian-speaking Lithuanian Lietuvininkai in the north-east. Most of the German East Prussians, Masurian, Kursians and Lietuvininkai were Lutheran, while the population of Ermland was predominantly Roman Catholic because of its diocesan history. The Jewish community in East Prussia declined from around 9 000 in 1933 to 3 000 in 1939, as most fled the Nazi regime. Those who remained were later deported and killed in the Holocaust.

**Question 0**

How many people lived in Easy Prussia in 1939?

**Question 1**

What percentage of the population of East Prussia was German?

**Question 2**

How many East Prussian Jews were there in 1939?

**Question 3**

What happened to the Jews who remained?

**Question 4**

How many Latvian-speaking Kursenieks were there?

**Question 5**

How many Lietuvinink were there?

**Question 6**

Where did Kursenieki live?

**Question 7**

What language did ethnic Germans speak most often?

**Question 8**

How many Masurians were there?

**Text number 18**

In 1939, the Regierungsbezirk Zichenau was annexed to Germany and incorporated into East Prussia. Parts of it were transferred to other regions, for example Suwałki to Regierungsbezirk Gumbinnen and Soldau to Regierungsbezirk Allenstein. Despite Nazi propaganda claiming that all the annexed regions had a significant German population that wanted to be reunited with Germany, according to Reich statistics at the end of 1939, only 31 000 of the 994 092 inhabitants of this region were ethnic Germans.

**Question 0**

In what year was the Regierungsbezirk Zichenau annexed?

**Question 1**

What other parts of East Prussia were transferred after the annexation of Zichenau?

**Question 2**

Despite all the propaganda presented to the East Prussians, what did the Germans want inside the country?

**Question 3**

In what year was the Regierungsbezirk Zichenau founded?

**Question 4**

Which ethnic group were most people in East Prussia at the end of 1939?

**Question 5**

What did most East Prussians want from Germany in 1939?

**Question 6**

How many Germans were Nazis in 1939?

**Text number 19**

After the defeat of Nazi Germany in World War II in 1945, East Prussia was divided between Poland and the Soviet Union in accordance with the Potsdam Conference. Southern East Prussia was placed under Polish administration, while Northern East Prussia was divided between the Soviet republics of Russia (Kaliningrad region) and Lithuania (the provinces of Klaipėda region). The city of Königsberg was renamed Kaliningrad in 1946. The German population of the province was largely evacuated during the war, but several hundred thousand died during 1944-46 and the rest were later deported.

**Question 0**

Into which two countries was East Prussia divided after the Second World War?

**Question 1**

What was the name of the town of Konigsberg renamed in 1946?

**Question 2**

What happened to most of the Germans during the war in what is now Kaliningrad?

**Question 3**

What year was the Potsdam Conference held?

**Question 4**

Which country was Kaliningrad in 1946?

**Question 5**

In what year did the Second World War start?

**Question 6**

Which was one of the countries that defeated Nazi Germany?

**Question 7**

In which country were the Germans deported?

**Text number 20**

Shortly after the end of the war in May 1945, Germans who had fled in early 1945 tried to return to their homes in East Prussia. In the summer of 1945, an estimated 800 000 Germans were living in East Prussia. Many others were prevented from returning, and the communist governments almost completely expelled the German population of East Prussia. During and for some time after the war, 45 camps were established for some 200 000 to 250 000 forced labourers, most of whom were deported to the Soviet Union, including the Gulag camp system. The largest camp, with about 48 000 prisoners, was established in Deutsch Eylau (Iława). The orphaned children who remained in the Soviet-occupied zone were referred to as 'wolf children'.

**Question 0**

How many Germans lived in East Prussia in 1945?

**Question 1**

How many camps did the Germans set up during the trip?

**Question 2**

How many forced labourers were in the largest camp?

**Question 3**

What was the name given to the children who stayed in Russian-occupied East Prussia?

**Question 4**

How many Germans were prevented from returning to East Prussia?

**Question 5**

How many wolf packs were there?

**Question 6**

How many forced labourers were in the smallest camp?

**Question 7**

Where was the smallest camp set up?

**Question 8**

In what year was the first forced labour camp established?

**Text number 21**

On 23 May 1945, the Polish government officially took over the civil administration of the southern part of East Prussia. Thereafter, Poles deported from Polish lands annexed by the Soviet Union, as well as Ukrainians deported by Operation Vistula in 1947, and Lempians deported from southern Poland, settled in the southern part of East Prussia, now the Polish province of Warmia-Masuria. In 1950, the Olsztyn Voivodeship had 689 000 inhabitants, 22.6% of whom came from the territories annexed by the Soviet Union, 10% were Ukrainians and 18.5% were pre-war inhabitants. The remaining pre-war population was treated as Germanised Poles and a resettlement policy was pursued throughout the country. Most of these 'autochtonians' decided to move to West Germany in the 1950s and 1970s (55 227 people from Warmia and Masuria moved to West Germany between 1970 and 1988). The local place names were Polishised by the Polish Commission for the Definition of Place Names.

**Question 0**

In what year did the Polish government officially take over the administration of East Prussia?

**Question 1**

What was the name given to the population of East Prussia during the war?

**Question 2**

What was the percentage of Ukrainians in East Prussia's population?

**Question 3**

How many were deported in Operation Vistula in 1947?

**Question 4**

How many people decided to move to West Germany in the 1950s?

**Question 5**

In what year was the Polish Commission for the Definition of Place Names established?

**Question 6**

How many Lemkos were deported in Operation Vistula?

**Question 7**

How many Ukrainians were deported in Operation Vistula?

**Text number 22**

In April 1946, the northern part of East Prussia became an official province of the Russian SFSR "Kyonigsbergskaja Oblast", and the Memel region became part of the Lithuanian SSR. In June 1946, 114 070 German and 41 029 Soviet citizens were registered in the region, as well as an unknown number of unregistered persons. In July of the same year, the historic town of Königsberg was renamed Kaliningrad in honour of Mikhail Kalinin and the region was renamed Kaliningrad Oblast. Between 24 August and 26 October 1948, 21 transports with a total of 42 094 Germans left the region for the Soviet occupied territory (which became East Germany). The last Germans left in November 1949 (1 401 persons) and January 1950 (7 persons).

**Question 0**

In what year did East Prussia become an official province of Russia?

**Question 1**

In whose honour was the city named Kaliningrad after Konigsberg?

**Question 2**

Between 24 August and 26 October, how many Germans left the area for the Soviet occupied territory?

**Question 3**

How many unregistered persons were there in the area?

**Question 4**

How many people lived in Kaliningrad?

**Question 5**

In what year was the Memel region founded?

**Question 6**

What was Königsberg named after?

**Question 7**

How many people had lived in the Memel area?

**Text number 23**

A similar fate befell the Kuronians who lived around the Kuria lagoon. Many fled the Red Army during the evacuation of East Prussia, but the remaining Kuronians were expelled by the Soviet Union. In 1955, only 219 people lived on the Kuria peninsula. Many had German names, such as Fritz or Hans, which caused anti-German discrimination. The Kuronians were considered fascists by the Soviet authorities. Because of this discrimination, many moved in 1958 to West Germany, where most Kuronians live today.

**Question 0**

What happened to the Kuronians who lived in East Prussia?

**Question 1**

What did the Russians consider to be Kuronian?

**Question 2**

Where did most of the Kuronese flee to in 1958?

**Question 3**

In what year did the evacuation of East Prussia take place?

**Question 4**

How many Kuronians moved to West Germany in 1958?

**Question 5**

How many people in Kuron had a German name?

**Question 6**

How many Kuronites escaped from the Red Army?

**Question 7**

How many Kuronians were left when many moved to West Germany in 1958?

**Text number 24**

After the expulsion of the German population, Russians, Belarusians and Ukrainians settled in the north. In the Soviet part of the region, a policy was pursued to eradicate all traces of German history. All German place names were replaced by new Russian names. The Exclave was a military zone closed to foreigners; Soviet citizens could only enter with special permission. In 1967, the remains of Königsberg Castle were demolished by order of Leonid Brezhnev to make way for a new 'Soviet House'.

**Question 0**

After the German population was removed, which three groups settled in the northern region?

**Question 1**

What did the Soviets in the north want to expel from the country?

**Question 2**

What else happened in the northern part of East Prussia, in what is now Russia?

**Question 3**

In what year was the military district established?

**Question 4**

What year did Leonid Brezhnev come to power?

**Question 5**

In what year did Russia start settling ethnic Russians in the north?

**Question 6**

What year was the new "Soviet House" completed?

**Text number 25**

Although Soviet officials expelled Germans from the northern part of former East Prussia between 1945 and 1949, often violently and aggressively, the current Russian inhabitants of the Kaliningrad region are much less hostile to Germans. German names have been revived in commercial Russian trade, and there is sometimes talk of returning Kaliningrad's name to its historic name of Königsberg. The centre of Kaliningrad was completely rebuilt, having been left in ruins by the British bombing in 1944 and the Soviet siege in 1945.

**Question 0**

What has since been considered in Kalinigrad?

**Question 1**

Which city was completely rebuilt after the Russian and German bombing?

**Question 2**

How did the Russians generally manage the removal of Germans from East Prussia?

**Question 3**

What year was Konigsberg renamed Kaliningrad?

**Question 4**

What are some examples of how the current Russian inhabitants of the Kaliningrad region treat Germans?

**Question 5**

In what year did the centre of Kaliningrad start to be rebuilt?

**Question 6**

In what year did the current Russian residents of the Kaliningrad region start moving there?

**Text number 26**

From 1875, when autonomy was established, the urban and rural districts (Kreise) of each province (sometimes also governorate) formed a provincial association (Provinzialverband) with common tasks and common property (schools, transport, hospitals, cultural institutions, prisons, etc.). Initially, the assemblies of urban and rural areas elected representatives to the Provincial Assemblies (Provinziallandtage), which were thus indirectly elected. From 1919 onwards, the Provincial Assemblies (or, in the case of the Provincial Assemblies, the so-called Kommunallandtage) were directly elected by the citizens of the provinces (or governorates). These parliaments passed laws within the framework of the powers delegated to the provincial assemblies. The Provincial Assembly of East Prussia elected the provincial executive (government), the Provincial Committee (Provinzialausschuss), and the provincial governor, the Landeshauptmann ('provincial governor'; until the 1880s Landdirektor).

**Question 0**

What was the common mission of the company formed by the urban and rural districts?

**Question 1**

What was the name of the company that took care of the joint task?

**Question 2**

What has happened since 1919 with the provincial diaries?

**Question 3**

How many representatives will there be at each of the county days?

**Question 4**

How many Landeshauptmann are there in total?

**Question 5**

In what year in the 1880s was the post of Landdirektor renamed Landeshauptmann?

**Question 6**

How were urban and rural district councils filled between 1875 and 1919?

**Document number 329**

**Text number 0**

Ottoman Empire (/ˈɒtəmən/; Ottoman Turkish: دَوْلَتِ عَلِيّهٔ عُثمَانِیّه Devlet-i Aliyye-i Osmâniyye, modern Turkish: Osmanlı İmparatorluğu or Osmanlı Devleti), also known as the Turkish Empire, Ottoman Turkey or Turkey, was an empire founded in 1299 by the Oguz Turks under Osman I in northwestern Anatolia. After the conquests of the Balkans by Murad I in 1362-1389, the Ottoman Sultanate became an intercontinental empire and caliphate. The Ottomans ended the Byzantine Empire when Mehmed the Conqueror conquered Constantinople in 1453.

**Question 0**

The Ottoman Empire is also known as the What other three?

**Question 1**

When was the Ottoman Empire founded?

**Question 2**

Who founded the Ottoman Empire?

**Question 3**

Where was the Ottoman Empire founded?

**Question 4**

Whose conquests started the transformation of the Ottoman Sultanate into an empire?

**Text number 1**

In the 1500s and 1600s, especially at the height of its power during the reign of Suleiman the Magnificent, the Ottoman Empire was a multi-ethnic and multilingual empire that ruled much of south-eastern Europe, western Asia, the Caucasus, North Africa and the Horn of Africa. In the early 17th century, the empire comprised 32 provinces and numerous vassal states. Some of these were later absorbed into the Ottoman Empire, while others were granted varying degrees of autonomy over the centuries.

**Question 0**

During whose reign did the Ottoman Empire rule much of south-eastern Europe?

**Question 1**

During which centuries did the Ottoman Empire rule much of south-eastern Europe?

**Question 2**

How many provinces did the Ottoman Empire rule in the early 17th century?

**Question 3**

What kind of states did the Ottoman Empire rule, apart from the provinces?

**Question 4**

Which parts of Africa were under Ottoman rule?

**Text number 2**

With Constantinople as its capital and control of the Mediterranean countries, the Ottoman Empire was at the centre of interaction between the Eastern and Western worlds for six centuries. After a long period of military defeat by the European powers, the Ottoman Empire gradually declined in the late 19th century. The Empire allied itself with Germany in the early 20th century with the aim of regaining lost territory. It entered the First World War to achieve this goal on the side of Germany and the Central Powers. Although the Empire was largely able to maintain its position during the conflict, it struggled with internal divisions, particularly over the Arab Revolt in its Arab holdings. The Ottoman government committed major atrocities against Armenians, Assyrians and Greeks, which began before the war but became more widespread and increasingly violent during it. After the First World War, the Allied powers lost the empire and occupied part of its territory, which led to the creation of a new state, Turkey, in the Ottoman heartland of Anatolia after the Turkish War of Independence, and to the creation of the modern Balkan and Middle Eastern states and the partition of the Ottoman Empire.

**Question 0**

What was the capital of the Ottoman Empire?

**Question 1**

Which countries ruled by the Ottoman Empire contributed to the centre of trade between East and West?

**Question 2**

When did the Ottoman Empire decline?

**Question 3**

Which nation did the Ottoman Empire ally with in the 20th century?

**Question 4**

What led to the decline of the Ottoman Empire?

**Text number 3**

The word Ottoman is a historical anglicisation of the name of Osman I, the founder of the empire and ruler of the Ottoman dynasty (also known as the Ottoman dynasty). The name Osman, in turn, was derived from the Persian form of the name ʿUthmān عثمان, which is ultimately of Arabic origin. In Ottoman Turkish, the kingdom was called Devlet-i ʿAliyye-yi ʿOsmâniyye (دَوْلَتِ عَلِيّهٔ عُثمَانِیّه), (literally "Supreme State of the Ottomans") or alternatively Osmanlı Devleti (عثمانلى دولتى).[dn 5] In modern Turkish it is known as Osmanlı İmparatorluğu ("Ottoman Empire") or Osmanlı Devleti ("Ottoman State").

**Question 0**

What word is derived from the name Osman I?

**Question 1**

Which house was the founder of the Ottoman Empire?

**Question 2**

What was the second name of the Ottoman dynasty?

**Question 3**

Where does the name Osman come from?

**Question 4**

What was the Ottoman Empire literally called?

**Text number 4**

Ertuğrul, the father of Osman I (the founder of the Ottoman Empire), arrived in Anatolia from Merv (Turkmenistan) with 400 horsemen to help the Seljuks of Rum against the Byzantines. After the destruction of the Turkish Seljuk Rum Sultanate in the 13th century, Anatolia was divided into a patchwork of independent, mostly Turkic states, the so-called Ghazi emirates. One of these emirates was led by Osman I (1258-1326), from whom the name Ottomans derives. Osman I extended the boundaries of Turkish settlement towards the edge of the Byzantine Empire. It is not known exactly how the early Ottomans came to dominate their neighbours, as little is still known about the history of medieval Anatolia.

**Question 0**

Who was the father of Osman I?

**Question 1**

How many horsemen did Osman I's father bring to help the Seljuks of Rum?

**Question 2**

When did the Turkish Seljuk Sultanate of Ram come to an end?

**Question 3**

By what name was the divided Anatolia finally called?

**Question 4**

On which edge of the empire did Osman I push the Turkish colonies?

**Text number 5**

In the century after the death of Osman I, Ottoman power began to expand into the eastern Mediterranean and the Balkans. Osman's son Orhan conquered the north-western Anatolian city of Bursa in 1324 and made it the new capital of the Ottoman state. The Ottoman conquest marked the loss of Byzantine control over north-western Anatolia. The important city of Thessaloniki was conquered from the Venetians in 1387. The Ottoman victory in Kosovo in 1389 marked the end of Serbian rule in the region and paved the way for Ottoman expansion into Europe. The Battle of Nicopolis in 1396, widely regarded as the last large-scale crusade of the Middle Ages, failed to halt the victorious Turkish Ottoman advance.

**Question 0**

Which city did Osman's son conquer?

**Question 1**

In what year did the son of Osman conquer the Anatolian city?

**Question 2**

What was the name of the son of Osman who conquered the city of Anatolia?

**Question 3**

Which city was conquered from the Venetians in 1387?

**Question 4**

What year did the Ottomans win victory in Kosovo?

**Text number 6**

As Turkish power expanded into the Balkans, the strategic conquest of Constantinople became a key objective. The Empire had managed to control almost all the former Byzantine territories surrounding the city, but in 1402 the Byzantines were temporarily liberated when the Turkish-Mongol leader Timur, founder of the Timurid Empire, invaded Anatolia from the east. At the Battle of Ankara in 1402, Timur defeated the Ottoman forces and captured Sultan Bayezid I, causing turmoil in the kingdom. The ensuing civil war lasted from 1402 to 1413, as Bayezid's sons fought over the right of succession. It ended when Mehmed I ascended to the sultanate and restored Ottoman rule, bringing the Interregnum, also known as the Fetret Devri, to an end.

**Question 0**

What was Turkey's objective when it expanded into the Balkans?

**Question 1**

Which empire previously ruled the areas around Constantinople?

**Question 2**

Which leader invaded Anatolia from the east?

**Question 3**

Timur was the founder of which state?

**Question 4**

Which battle was fought between Timur and the Ottoman Empire in 1402?

**Text number 7**

Some Ottoman territories in the Balkans (such as Thessaloniki, Macedonia and Kosovo) were temporarily lost after 1402, but were later regained by Murad II in the 1430s-1450s. On 10 November 1444, Murad II defeated the Hungarian, Polish and Wallachian armies led by Władysław III of Poland (also King of Hungary) and John Hunjad at the Battle of Varna, the last battle of the Varna Crusade, although the Albanians led by Skanderbeg continued to resist. Four years later, John Hunyadi prepared a second army (of Hungarian and Wallachian troops) to attack the Turks, but he was defeated again by Murad II at the Second Battle of Kosovo in 1448.

**Question 0**

Who took back the Ottoman Empire's territories in the Balkans in the 1430s-1450s?

**Question 1**

On what day did Murad II defeat the armies led by Władysław III?

**Question 2**

Władysław III of Poland was also king of which country?

**Question 3**

Which battle was fought on 10 November 1444?

**Question 4**

In which battle was Murad II defeated in 1448?

**Text number 8**

Murad II's son Mehmed the Conqueror reorganised the state and army and conquered Constantinople on 29 May 1453. Mehmed allowed the Orthodox Church to retain its sovereignty and land in exchange for accepting Ottoman rule. Due to poor relations between the Western European states and the later Byzantine Empire, the majority of the Orthodox population accepted Ottoman rule instead of Venetian rule. Albanian resistance was a major obstacle to Ottoman expansion on the Italian peninsula.

**Question 0**

Who was the son of Murad II?

**Question 1**

Which city was conquered on 29 May 1453?

**Question 2**

What did the Orthodox Church get in return for accepting the rule of the Ottoman Empire?

**Question 3**

The Orthodox population of Constantinople preferred Ottoman rule to what?

**Question 4**

What was the main obstacle to the expansion of the Ottoman Empire into the Italian peninsula??

**Text number 9**

Suleiman the Magnificent (1520-1566) conquered Belgrade in 1521, conquered the southern and central parts of the Kingdom of Hungary as part of the Ottoman-Hungarian Wars,[not cited] and after his historic victory at the Battle of Mohács in 1526, he established Turkish rule in what is now Hungary (excluding its western part) and other parts of Central Europe. He then besieged Vienna in 1529, but failed to capture the city. In 1532, he attacked Vienna again, but was defeated at the siege of Guns. Transylvania, Wallachia and occasionally Moldavia became principalities subject to the Ottoman Empire. In the east, the Ottoman Turks captured Baghdad from the Persians in 1535, gained control of Mesopotamia and reached the Persian Gulf by sea. In 1555, the Caucasus was officially divided for the first time between the Safavids and the Ottomans, a situation that continued until the end of the Russo-Turkish War (1768-74). This division of the Caucasus, signed in the Peace of Amasya, left Western Armenia and Western Georgia to the Ottomans, while Dagestan, Eastern Armenia, Eastern Georgia and Azerbaijan remained with the Persians.

**Question 0**

During which years did Suleiman the Magnificent live?

**Question 1**

What year did Suleiman the Magnificent conquer Belgrade?

**Question 2**

In which battle did Suleiman the Mighty achieve an important victory in 1526?

**Question 3**

After a victorious battle in 1526, to which nation did the Turks extend their power?

**Question 4**

At which siege was Suleiman the Mighty stopped when he attacked Vienna in 1532?

**Text number 10**

France and the Ottoman Empire, united in their opposition to the Habsburgs, became strong allies. The conquest of Nice (1543) and Corsica (1553) from France was a joint effort between the French King Francis I and Suleiman's forces, commanded by the Ottoman admirals Barbarossa Hayreddin Pasha and Turgut Reis. A month before the siege of Nice, France supported the Ottomans with an artillery unit when they captured Esztergom in northern Hungary in 1543. As the Turks continued their advance, the Habsburg monarch Ferdinand formally recognised Ottoman domination of Hungary in 1547.

**Question 0**

France and the Ottoman Empire united against what?

**Question 1**

Where did the French conquer in 1553?

**Question 2**

Was the conquest of Nice an attempt by Suleiman and which French king?

**Question 3**

What were the names of the Ottoman admirals who led the conquest of Nice?

**Question 4**

Which ruler recognised the Ottomans in 1547?

**Text number 11**

Stephen Lee argues that the stagnation and decline was relentless after Suleiman's death in 1566, interrupted by a few brief revivals or reforms and recoveries. The decline accelerated so that by 1699 the empire was 'but a shadow of what had frightened both East and West in 1566'. Although there are dissenting scholars, most historians point to 'degenerate sultans, incompetent grand vizier, weakened and ill-equipped armies, corrupt officials, greedy speculators, avaricious enemies and treacherous friends'. The main reason was a failure of leadership, since, according to Lee, the first ten sultans between 1292 and 1566 had, with one exception, performed their duties excellently. The next 13 sultans from 1566 to 1703, with two exceptions, were, according to Lee, lazy or incompetent rulers. In a well-centred system, failure at the centre proved fatal. A direct consequence was the strengthening of provincial elites, which increasingly bypassed Constantinople. Secondly, the military power of European enemies grew stronger and stronger, while Ottoman armies and weaponry hardly improved. Finally, the Ottoman economic system became distorted and impoverished as war caused inflation, world trade moved in other directions and the deterioration of law and order hampered economic progress.

**Question 0**

Who claims that after Suleiman's death there was a sharp decline and stagnation?

**Question 1**

What year did Suleiman die?

**Question 2**

By what year was it claimed that the Ottoman Empire was a "shadow" of what it was in 1566?

**Question 3**

From which years and up to which years does Lee claim that the rules of empire were incompetent?

**Question 4**

What caused inflation in the Ottoman Empire?

**Text number 12**

The efficient military and bureaucratic structures of the previous century were put to the test during a period of prolonged misrule by weak sultans. The Ottomans gradually fell behind the Europeans in military technology, as the innovations that fuelled the empire's massive expansion were stifled by growing religious and intellectual conservatism. Despite these difficulties, however, the empire remained a major expansionist power until the Battle of Vienna in 1683, which marked the end of Ottoman expansion into Europe.

**Question 0**

Which class of people's mismanagement burdened the empire?

**Question 1**

What technology did the Europeans use to defeat the Ottoman Empire?

**Question 2**

What conservative beliefs slowed down the expansion of the empire?

**Question 3**

Which battle was fought in 1683?

**Question 4**

To which territory did the empire stop expanding after the battle of 1683?

**Text number 13**

As Western European countries discovered new maritime trade routes, they were able to avoid the Ottoman trade monopoly. The Portuguese discovered the Cape of Good Hope in 1488, setting off a series of Ottoman-Portuguese naval wars in the Indian Ocean throughout the 1500s. The Somali Muslim Ajuran Empire, allied with the Ottomans, challenged the Portuguese economic monopoly in the Indian Ocean by introducing a new Ottoman-style coinage, thus declaring economic independence from the Portuguese.

**Question 0**

Avoiding the strength of the Ottoman trade was achieved by finding what?

**Question 1**

What did the Portuguese discover in 1488?

**Question 2**

Where did the Ottomans and Portuguese wage naval warfare in the 16th century?

**Question 3**

Who did the Ottomans ally with in the Indian Ocean?

**Question 4**

The new coins were a declaration of independence for the Somali Muslim Ajuran kingdom from whom?

**Text number 14**

In southern Europe, the Catholic alliance led by Philip II of Spain defeated the Ottoman fleet at the Battle of Lepanto (1571). It was a startling, if mainly symbolic, blow to the image of Ottoman invincibility, which the Knights of Malta's victory over the Ottoman invaders at the siege of Malta in 1565 had recently begun to erode. The battle did far more damage to the Ottoman fleet, taking away experienced crews than the loss of ships, which were quickly replaced. The Ottoman fleet recovered quickly and persuaded Venice to sign a peace treaty in 1573, allowing the Ottomans to expand and strengthen their position in North Africa.

**Question 0**

Which Spaniard led the battle in 1571?

**Question 1**

Which battle was won by the Spanish in 1571?

**Question 2**

Which siege took place in 1565?

**Question 3**

In what year did Venice sign a peace treaty with the Ottomans?

**Question 4**

After signing the peace treaty with Venice, in which area did the Ottoman Empire expand?

**Text number 15**

By contrast, the Habsburg border had calmed down somewhat, and the stalemate was due to the strengthening of the Habsburg defences. The long war against Habsburg Austria (1593-1606) created the need for a larger number of Ottoman infantry armed with firearms, which led to a relaxation of recruitment policy. This contributed to problems of indiscipline and outright rebellion within the forces, which were never fully resolved. Irregular snipers (Sekban) were also recruited and, when repatriated, engaged in banditry in the Yelal rebellions (1595-1610), which gave rise to widespread anarchy in Anatolia in the late 1500s and early 1600s. As the empire's population rose to 30 million by 1600, land shortages put further pressure on the government. Despite these problems, the Ottoman state remained strong and its army did not collapse or suffer crushing defeats. The only exceptions were the campaigns against the Safavid dynasty in Persia, in which many of the Ottoman eastern provinces were lost, some permanently. This war of 1603-1618 eventually led to the Treaty of Nasuh-Hasa, which ceded all of the Caucasus, except westernmost Georgia, back to the Safavids of Iran. The campaigns of this era became increasingly unsuccessful, even against weaker states with much smaller forces, such as Poland or Austria.

**Question 0**

What was the name of the late 16th century war against the Habsburgs in Austria?

**Question 1**

In which years was the Ottoman war against Habsburg Austria fought?

**Question 2**

What were the Ottoman irregular snipers known as?

**Question 3**

What was the population of the Ottoman Empire in the early 17th century?

**Question 4**

Which treaty was the result of a war fought between 1603 and 1618?

**Text number 16**

During his short period of majority rule, Murad IV (1612-1640) re-established central power and reconquered Iraq (1639) from the Safavids. The Treaty of Zuhab, signed in the same year, decisively divided the Caucasus and the surrounding areas between the two neighbouring states, as already defined in the 1555 Treaty of Amasya. The female sultanate (1648-1656) was a period when the mothers of young sultans exercised power on behalf of their sons. The most prominent women of the period were Sultan Kösem and his daughter-in-law Turhan Hatice, whose political rivalry culminated in Kösem's assassination in 1651. During the Köprülü period (1656-1703), several grand vizirs of the Köprülü family ruled the kingdom effectively. The Köprülülü Visigothic period achieved further military success with the restoration of power in Transylvania, the conquest of Crete in 1669 and the expansion into southern Poland, with the fortresses of Hotyn and Kamianets-Podilsky and the Podolia region coming under Ottoman control in 1676.

**Question 0**

Who conquered Iraq back in 1639?

**Question 1**

Who ruled Iraq before it was reconquered in 1639?

**Question 2**

When was Kösem murdered?

**Question 3**

Which years define the Köprülü period?

**Question 4**

Which region was conquered by the Köprülü Visigoths in 1669?

**Text number 17**

This period of renewed assertiveness came to a fateful end in May 1683, when Grand Vizier Kara Mustafa Pasha led a huge army to attempt the second Ottoman siege of Vienna in the Great Turkish War of 1683-1687. The final invasion was fatally delayed, and allied Habsburg, German and Polish forces, led by King Jan III Sobieski of Poland, swept away the Ottoman forces at the Battle of Vienna. The Holy Alliance weighed the defeat of Vienna in its favour, culminating in the Treaty of Karlowitz (26 January 1699), which ended the Great Turkish War. The Ottomans relinquished control of significant territories, many permanently. Mustafa II (1695-1703) led a counter-attack in 1695-96 against Habsburg rule in Hungary, but lost a disastrous defeat in Zenta (modern Serbia) on 11 September 1697.

**Question 0**

Which Grand Vizier attempted to besiege Vienna in 1683?

**Question 1**

What was the name of the war fought between 1683 and 1687?

**Question 2**

Which Polish king led the battle against the Ottoman Empire at the Battle of Vienna?

**Question 3**

What was the name of the alliance against the Ottoman Empire in the late 17th century?

**Question 4**

Which treaty was signed on 26 January 1699?

**Text number 18**

After the Austro-Turkish War of 1716-1718, the Passarowitz Treaty confirmed the loss of Banat, Serbia and "Little Wallachia" (Oltenia) to Austria. The treaty also showed that the Ottoman Empire was on the defensive and unlikely to invade Europe again. The war between Austria, Russia and Turkey, which ended with the Treaty of Belgrade in 1739, led to the recovery of Serbia and Oltenia, but the empire lost the port of Azov, north of the Crimean peninsula, to the Russians. After this treaty, the Ottoman Empire enjoyed a generation of peace as Austria and Russia struggled with the rise of Prussia.

**Question 0**

Oltenia is also known as what?

**Question 1**

The war between Austria and Turkey lasted for what years?

**Question 2**

The war between Austria and Turkey culminated in the signing of which treaty?

**Question 3**

The Belgrade Agreement was the result of a war known as the what?

**Question 4**

Which port did the Ottoman Empire lose as a result of the Belgrade Agreement?

**Text number 19**

Educational and technological reforms were implemented, and higher education institutions such as Istanbul University of Technology were established. In 1734, an artillery school was established to teach Western artillery, but was successfully opposed by the Islamic clergy on the grounds of theodicy. In 1754, the artillery school was reopened in semi-secret. In 1726, Ibrahim Muteferrika convinced Grand Vizier Nevşehirli Damat İbrahim Pasha, the Grand Mufti and clergyman of the effectiveness of the printing press, and Sultan Ahmed III later granted Muteferrika permission to publish non-religious books (despite the opposition of some calligraphers and religious leaders). Muteferrika's press published its first book in 1729 and by 1743 had published 17 works in 23 volumes, each with a print run of 500-1 000 copies.

**Question 0**

What is one university that was formed in the early 1700s in the kingdom?

**Question 1**

What kind of school was established in the kingdom in 1734?

**Question 2**

In 1754, what man persuaded the Grand Vizier to agree to use a printing press?

**Question 3**

Who was the Grand Vizier of Ottoama in 1726?

**Question 4**

In what year did the Ottoman press produce its first book?

**Text number 20**

In 1768, Russian-backed Ukrainian Haidamaks, pursuing Polish allies, invaded Balta, an Ottoman-ruled town on the Bessarabian border in Ukraine, slaughtered its inhabitants and burned it to the ground. This act prompted the Ottoman Empire to start the Russo-Turkish War of 1768-1774. In 1774, the Treaty of Küçük Kaynarca ended the war and gave religious freedom to the Christian citizens of the Ottoman-controlled provinces of Wallachia and Moldavia. In the late 1700s, defeats in several wars with Russia led some in the Ottoman Empire to conclude that Peter the Great's reforms had given the Russians an advantage and that the Ottomans should keep up with Western technology to avoid further losses.

**Question 0**

Which Russian-backed group invaded Balta in 1768?

**Question 1**

What area was Balta near?

**Question 2**

In which years was the war between Russia and Turkey fought?

**Question 3**

What agreement did the war between Russia and Turkey lead to?

**Question 4**

What did the climax of the Russo-Turkish war grant to the citizens of the Ottoman-ruled provinces of Moldavia?

**Text number 21**

The Serbian Revolution (1804-1815) marked the beginning of an era of national awakening in the Balkans during the Eastern Question. Serbian sovereignty as a hereditary monarchy under its own dynasty was recognised de jure in 1830. In 1821, the Greeks declared war on the sultanate. The rebellion in Moldavia, which began as a diversion, was followed by a major revolution in the Peloponnese, which, together with the northern part of the Gulf of Corinth, became the first parts of the Ottoman Empire to gain independence (in 1829). By the mid-19th century, Europeans were calling the Ottoman Empire a 'sick man'. The Suzerain states - the Principality of Serbia, the Principality of Wallachia, Moldavia and Montenegro - moved towards legal independence in the 1860s and 1870s.

**Question 0**

In what years did the Serbian revolution take place?

**Question 1**

Which Serbian monarchy was recognised in 1830?

**Question 2**

In 1821, war was declared against the Ottoman Sultanate, who declared it?

**Question 3**

In what year did some of the Ottoman Empire gain independence?

**Question 4**

What did Europeans call the Ottoman Empire in the 19th century?

**Text number 22**

The Christian population of the kingdom, thanks to its higher level of education, began to overtake the Muslim majority, leading to great disaffection among the latter. In 1861, there were 571 primary and 94 secondary schools for Ottoman Christians, with a total of 140 000 pupils. This number far exceeded the number of Muslim children attending school at the same time, and they were also hampered by the time taken to learn Arabic and Islamic theology. The higher level of education of Christians, on the other hand, allowed them to play a major role in the economy. In 1911, 528 of Istanbul's 654 wholesalers were owned by ethnic Greeks. It would of course be a mistake to ignore the geopolitical dimensions of this dynamic. The predominance of Christian merchants was not due to their innate business skills, although many European observers tend to point this out. In fact, in many cases, Christians, as well as Jews, were able to obtain protection from European consuls and citizenship, which meant that they were protected from Ottoman law and were not subject to the same economic regulations as their Muslim counterparts.

**Question 0**

How many primary schools for Christians were there in the Ottoman Empire in 1861?

**Question 1**

How many Christian pupils were there in Ottoman schools in 1861?

**Question 2**

How many wholesalers were owned by Greeks in Istanbul in 1911?

**Question 3**

What kind of aid did Europe offer to Jews and Christians in the form of protection?

**Question 4**

How many wholesale shops were there in Istanbul in 1911?

**Text number 23**

The Crimean War (1853-1856) was part of a long-running rivalry between the great European powers for influence over the territories of the declining Ottoman Empire. The financial burden of the war prompted the Ottoman state to take out foreign loans worth £5 million on 4 August 1854. The war triggered an exodus of Crimean Tatars, of whom some 200,000 migrated to the Ottoman Empire in continuous waves of emigration. Towards the end of the Caucasian wars, 90% of the Circassians were ethnically cleansed and expelled from their homelands in the Caucasus and fled to the Ottoman Empire, resulting in 500 000-700 000 Circassians settling in Turkey. Some Circassian organisations report much higher figures of 1-1.5 million deported or killed in total.

**Question 0**

In which years was the Crimean War fought?

**Question 1**

On what day did the Ottoman Empire grant foreign loans to cover the cost of the war?

**Question 2**

What group of people left Crimea during the war, around 200 000?

**Question 3**

Of which group were about 90% driven from their homes or ethnically cleansed during the Caucasian wars?

**Question 4**

Where did the Circassians settle when they left their homes in the Caucasus?

**Text number 24**

As the Ottoman state sought to modernise its infrastructure and army in response to external threats, it also opened itself up to another threat: that of creditors. As historian Eugene Rogan has written, "the single greatest threat to Middle Eastern independence" in the 19th century "was not Europe's armies but its banks". The Ottoman state, which had begun to take on debt with the Crimean War, was forced to declare bankruptcy in 1875. By 1881, the Ottoman Empire agreed to have its debts supervised by the Ottoman Debt Office, a council of European men chaired alternately by France and Britain. This body controlled parts of the Ottoman economy and used its position to ensure that European capital continued to penetrate the empire, often at the expense of local Ottoman interests.

**Question 0**

Which historian wrote that banks were the single biggest threat to Middle Eastern independence?

**Question 1**

In what year did the Ottoman Empire go bankrupt?

**Question 2**

What was the name of the administration that the empire used to manage its debts?

**Question 3**

Who was part of the Ottoman Empire's debt-control administration?

**Question 4**

European capital in the Ottoman Empire led to what?

**Text number 25**

The Ottoman bashi-bazouks brutally suppressed the 1876 Bulgarian uprising, slaughtering up to 100 000 people. The Russo-Turkish War (1877-78) ended in a decisive Russian victory. As a result, Ottoman holdings in Europe were drastically reduced; Bulgaria was formed as an independent principality within the Ottoman Empire, and Romania achieved full independence. Serbia and Montenegro eventually became fully independent, but with smaller territories. In 1878, Austria-Hungary unilaterally occupied the Ottoman provinces of Bosnia-Herzegovina and Novi Pazar.

**Question 0**

Who prevented the Bulgarian uprising in 1876?

**Question 1**

Which war was fought between 1877 and 1878?

**Question 2**

Bulgaria became independent within the Empire as a result of which war?

**Question 3**

Which nation achieved full independence as a result of the Russo-Turkish war?

**Text number 26**

As the Ottoman Empire gradually declined, some 7-9 million Turkish Muslims from its former territories in the Caucasus, Crimea, the Balkans and the Mediterranean islands migrated to Anatolia and eastern Turkey. After the defeat of the Balkan Wars (1912-13), the empire lost all its Balkan territories except Eastern Turkey (European Turkey). This resulted in some 400,000 Muslims fleeing with the retreating Ottoman armies (many dying of cholera brought by the soldiers) and some 400,000 non-Muslims fleeing from territory still under Ottoman control. Justin McCarthy estimates that between 1821 and 1922 several million Muslims died in the Balkans, and an equal number were expelled.

**Question 0**

Millions of Muslims left the empire and moved to which places?

**Question 1**

When were the Balkan wars fought?

**Question 2**

What was the only territory retained by the empire in the Balkans after 1913?

**Question 3**

How many Muslims fled the Balkans with the Ottoman army?

**Question 4**

Who estimates that millions of Muslims died in the Balkans in the late 19th and early 20th centuries?

**Text number 27**

The defeat and disintegration of the Ottoman Empire (1908-1922) began with the Second Constitution, a moment of hope and promise sparked by the Young Turk revolution. It restored the Ottoman Constitution of 1876 and brought the Ottoman Parliament under the Ottoman rule with a two-party electoral system (electoral law). The constitution offered hope by freeing the citizens of the Empire to modernise the institutions of the state, rejuvenate its strength and enable it to stand up to outside forces. The freedoms it guaranteed promised to defuse tensions between communities and make the empire a more harmonious place. Instead, this period became the story of the Empire's turmoil. The young Turks of the movement, once underground (a designated committee, group, etc.) founded (declared) their party. Among them, the "Committee of Union and Progress" and the "Party of Freedom and Reconciliation" were the largest parties. At the other extreme were the ethnic parties, including Poale Zion, Al-Fatat and the Armenian National Movement, organised under the umbrella of the Armenian Revolutionary Federation. Benefiting from the civil war, Austria-Hungary formally annexed Bosnia and Herzegovina in 1908. The last Ottoman census was carried out in the 1914 census. Ottoman military reforms led to the modern Ottoman army, which took part in the Italian-Turkish War (1911), the Balkan Wars (1912-1913) and continued unrest (a counter-coup followed by a restoration, and a rescue, followed by an attack on the gates) in the empire until World War I.

**Question 0**

Which era triggered the end of the Ottoman Empire?

**Question 1**

What was the revolution that brought about the end of the Ottoman Empire?

**Question 2**

Its restoration, what happened in 1876?

**Question 3**

What were the two major parties founded by the Young Turks?

**Question 4**

Which territories were annexed by Austria-Hungary in 1908?

**Text number 28**

The history of the Ottoman Empire during the First World War began with Ottoman involvement in the theatre of the Middle East. The early years of the war saw several important Ottoman victories, such as the Battle of Gallipoli and the siege of Kut. The Arab revolt that began in 1916 turned the tide against the Ottomans on the Middle Eastern front, where they initially appeared to have the upper hand during the first two years of the war. The Mudros Armistice, signed on 30 October 1918, provided for the partition of the Ottoman Empire according to the terms of the Treaty of Sèvres. This agreement, drawn up at the London Conference, allowed the Sultan to retain his position and title. The occupation of Constantinople and İzmir led to the establishment of the Turkish National Movement, which won the Turkish War of Independence (1919-22) under the leadership of Mustafa Kemal (later surnamed 'Atatürk'). The Sultanate was abolished on 1 November 1922, and the last Sultan Mehmed VI (ruled 1918-22) left the country on 17 November 1922. The Caliphate was abolished on 3 March 1924.

**Question 0**

Where did the Ottoman Empire start its involvement in the First World War?

**Question 1**

What were the results of the Battle of Gallipoli and the siege of Kut?

**Question 2**

In what year did the Arab uprising start?

**Question 3**

When was the Mudros Armistice signed?

**Question 4**

When was the Turkish War of Independence fought?

**Text number 29**

In 1915, as the Russian Caucasus Army continued its advance into eastern Anatolia, the Ottoman government began deportations of the ethnic Armenian population, resulting in the deaths of some 1.5 million Armenians in an event known as the Armenian Genocide. The genocide was carried out during and after the First World War in two stages: the killing of the able-bodied male population by mass murder and the subjection of army conscripts to forced labour, followed by the deportation of women, children, the elderly and the sick to the death marches leading to the Syrian desert. Transported by military convoys, the deportees were deprived of food and water and systematically robbed, raped and slaughtered. The Greek and Assyrian minorities in the empire were also subjected to large-scale massacres as part of the same campaign of ethnic cleansing.

**Question 0**

When did the Russian Caucasus Army advance into eastern Anatolia?

**Question 1**

Which ethnic group was expelled from eastern Anatolia by the Ottoman government?

**Question 2**

How many Armenians are believed to have died in the Armenian Genocide?

**Question 3**

Armenian women and children were deported on a death march through which desert?

**Question 4**

Two other ethnic minorities were murdered during the Ottoman ethnic cleansing, what were they?

**Text number 30**

Before the reforms of the 19th and 20th centuries, the Ottoman Empire's state organisation was a simple system with two main dimensions: military and civil administration. The Sultan was the highest position in the system. The civil system was based on local administrative units based on the characteristics of the region. The Ottomans practised a system in which the state (as in the Byzantine Empire) controlled the clergy. Certain pre-Islamic Turkic traditions, which had survived the administrative and legal practices adopted from Islamic Iran, remained important in Ottoman administrations. In the Ottoman conception, the primary role of the state was to defend and expand Muslim lands and to ensure security and harmony within its borders in the overall context of orthodox Islamic practice and dynastic sovereignty.

**Question 0**

Who was the highest ranking person in the Ottoman Empire until the 19th century?

**Question 1**

What was the system of civil administration in the empire?

**Question 2**

Who controlled the clergy in the Ottoman Empire?

**Question 3**

What was the main responsibility of the Ottoman state in matters concerning countries?

**Question 4**

What was the practice that guided the Ottoman state in its tasks?

**Text number 31**

The Ottoman Empire or House of Ottomans as a dynastic institution was unprecedented in size and duration and unparalleled in the Islamic world. In Europe, only the Habsburg family had a similarly unbroken line of rulers (kings/emperors) from the same family, ruling for the same length of time and in the same period, from the end of the 13th century to the beginning of the 20th century. The Ottoman dynasty was of Turkish origin. Eleven times a sultan was deposed (replaced by another sultan of the Ottoman dynasty, who was either a brother, son or nephew of the former sultan) because his enemies considered him a threat to the state. There have only been two attempts in Ottoman history to overthrow the ruling Ottoman dynasty, both of which failed, suggesting a political system that was able to manage its revolution over a long period of time without undue instability. The last Ottoman sultan, Mehmed VI (reigned 1918-1922), was a direct patrilineal (male) descendant of the first Ottoman sultan, Osman I (reigned 1299-1326), which was unparalleled both in Europe (for example, the male line of the Habsburg family became extinct in 1740) and in the Islamic world. The primary purpose of the imperial harem was to ensure the birth of male heirs to the Ottoman throne and to ensure the continuation of direct patrilineal (male) descent from the Ottoman sultans.

**Question 0**

What was the second name of the Ottoman Empire?

**Question 1**

What was the name of the second longest reigning house in Europe?

**Question 2**

Where did the Ottoman Empire begin?

**Question 3**

How many times was the sitting Sultan removed from the House of Osman?

**Question 4**

When was the reign of Sultan Mehmed VI?

**Text number 32**

Islam's highest position, the caliphate, was claimed by sultans from Murad I onwards, established as the Ottoman caliphate. The Ottoman sultan, the pâdişâh, or 'lord of kings', was the sole regent of the kingdom and was seen as the embodiment of its administration, although he did not always exercise complete authority. The imperial harem was one of the most important kingdoms of the Ottoman court. It was ruled by the Sultan Valide. Sometimes the Sultan of Valide interfered in the politics of the state. For a time, the women of the harem effectively ruled the state in what was known as the 'women's sultanate'. New sultans were always chosen from the sons of the previous sultan. The palace school's strong education system aimed to weed out unworthy potential heirs and to build support among the ruling elite for a successor. The palace schools, which also trained future state administrators, were not monolithic. Firstly, the madrasa (Ottoman Turkish: medrese) was for Muslims and trained scholars and state officials in accordance with Islamic tradition. The economic burden of the medrese was supported by standard fiefs, which enabled the children of poor families to reach higher social and income levels. The second track was a free boarding school for Christians, Enderûn, which recruited 3,000 pupils a year from Christian boys in their eighties and twenties, who came from one in every forty families in the communities settled in Rumelia or the Balkans, a process known as Devshirme (Devşirme).

**Question 0**

What did the Ottoman Caliphate called for by Murad Ir represent in Islam?

**Question 1**

Which person with what title was believed to be the embodiment of the Ottoman government?

**Question 2**

What was the significance of the imperial harem?

**Question 3**

What was the purpose of the palace education system?

**Question 4**

What was the name of the Christian boarding school during the Ottoman Caliphate?

**Text number 33**

Although the sultan was the supreme monarch, the sultan's political and executive power was delegated. State policy was governed by a group of advisers and ministers gathered around a council called the divan (renamed the port after the 17th century). In the years when the Ottoman state was still Beylik, the divan consisted of the elders of the tribe. Later, its composition was changed to include military officers and local elites (such as religious and political advisors). Still later, from 1320 onwards, a grand vizier was appointed to take over certain of the sultan's functions. The Grand Vizier enjoyed considerable independence from the Sultan, with almost unlimited powers of appointment, dismissal and control. From the end of the 16th century onwards, the Sultans withdrew from politics and the Grand Vizier became the de facto head of state.

**Question 0**

What was the title of the Sultan of the Ottoman Empire?

**Question 1**

What was the name of the council that was responsible for state policy?

**Question 2**

What kind of people were on the sofa originally?

**Question 3**

Later, other groups were added to the diva, what groups?

**Question 4**

In what year was the Grand Vizier appointed?

**Text number 34**

The Ottoman legal system adopted religious law for its subjects. At the same time, Qanun (or Kanun), the secular legal system, coexisted with religious law, or sharia. The Ottoman Empire was always organised around a local legal system. The Ottoman Empire's legal system was part of a wider system in which central and local government were balanced. Ottoman power revolved crucially around the administration of land rights, which gave local authorities the space to develop the needs of the local milling population. The Ottoman Empire's complex jurisdiction was designed to enable the integration of culturally and religiously diverse groups. The Ottoman system had three court systems: one for Muslims, one for non-Muslims, which included appointed Jews and Christians who governed their own religious communities, and a 'commercial court'. The whole system was governed from above by administrative Qanun, or laws, based on the Turkish Yassa and Töre systems developed in the pre-Islamic era[citation needed].

**Question 0**

What was the name of the secular legal system under the Ottoman Caliphate?

**Question 1**

What was the religious law known as?

**Question 2**

What did the Ottoman Empire seek to balance in its legal policy?

**Question 3**

How many court systems did the Ottoman Empire have?

**Question 4**

What were the laws of the court system based on?

**Text number 35**

However, these categories of courts were not entirely mutually exclusive: for example, Islamic courts - which were the primary courts of the empire - could also be used to resolve commercial disputes or disputes between religiously different parties, and Jews and Christians often turned to the courts for a stronger ruling on a matter. The Ottoman state generally did not interfere in non-Muslim religious legal systems, although local governors had the legal power to do so. The Islamic Sharia legal system was developed from a combination of the Qur'an, Hadīth, the words of the Prophet Muhammad, ijmā, the consensus of the members of the Muslim community, qiyas, the analogical deduction of previous precedents, and local customs. Both systems were taught in the law schools of the empire, which existed in Istanbul and Bursa.

**Question 0**

What were the primary courts in the kingdom?

**Question 1**

From which works was Sharia developed?

**Question 2**

Whose words have influenced the emergence of Islamic Sharia law?

**Question 3**

Where were the law schools of the empire?

**Question 4**

Which other religious groups went to Islamic courts?

**Text number 36**

The Ottoman Islamic legal system was different from the traditional European courts. Islamic courts were presided over by a qadi, or judge. As the ijtihad or gate of interpretation was closed, qadis throughout the Ottoman Empire focused less on precedents and more on local customs and traditions in the areas they governed. However, the Ottoman legal system lacked an appellate structure, leading to court-specific case strategies whereby plaintiffs could take their disputes from one legal system to another until they received a favorable decision.

**Question 0**

Who was the one who ran the Islamic courts of the kingdom?

**Question 1**

At what point did qadi focus less on precedents?

**Question 2**

What was one thing that was missing from the Ottoman legal system?

**Question 3**

What did Qadis focus on in some areas?

**Question 4**

What is another word for Qadi?

**Text number 37**

The reforms were largely based on French models, as the introduction of the three-tier court system shows. The system, known as the Nizamiye, was extended to the local magistrate level with the final publication of the Mecelle, a civil code that governed marriage, divorce, alimony, wills and other personal status matters. In an attempt to clarify the division of judicial powers, the Governing Council specified that religious matters were to be dealt with by religious courts and legal matters by nizamiye courts.

**Question 0**

What was the model on which the Ottoman court reforms were based?

**Question 1**

How many levels did the Ottoman court system have?

**Question 2**

What was the new Ottoman court system known as?

**Question 3**

Which law governed marriage?

**Text number 38**

The first military unit of the Ottoman state was an army organised by Osman I from tribesmen living in the hills of western Anatolia in the late 13th century. The military system became a complex organisation as the empire progressed. The Ottoman army was a complex system of recruitment and fiefdoms. The main forces of the Ottoman army included the janissaries, sipahs, akıncı and mehterân. The Ottoman army was once one of the most advanced fighting forces in the world, being one of the first to use muskets and cannons. The Ottoman Turks began using falconettes, which were short but wide guns, during the siege of Constantinople. Relying on great speed and mobility rather than heavy armour, the Ottoman cavalry used bows and short swords on fast Turkish and Arabian horses (the ancestors of the thoroughbred racehorse), and often employed tactics similar to those of the Mongol Empire, such as feigning retreat and encircling enemy forces in a crescent-shaped formation, then attacking for real. The decline in army performance became clear from the mid-16th century and after the Great Turkish War. Some limited success was achieved against Venice in the 1700s, but in the north, European-style Russian armies forced the Ottomans to surrender ground.

**Question 0**

In which century was the first military unit organised by Ottoman I formed?

**Question 1**

Where did the tribesmen who formed the unit organised by Osman I come from?

**Question 2**

There were four divisions in the Ottoman army, what were they?

**Question 3**

The Ottoman army was among the first to use what two pieces of weapons technology?

**Question 4**

In which conflict did the Ottoman Turks use falcons?

**Text number 39**

The Ottoman navy contributed significantly to the expansion of the Empire's territories on the European continent. It began the conquest of North Africa with the annexation of Algeria and Egypt to the Ottoman Empire in 1517. With the loss of Greece in 1821 and Algeria in 1830, Ottoman naval power and control of the Empire's distant overseas territories began to decline. Sultan Abdülaziz (reigned 1861-1876) attempted to restore a strong Ottoman navy and built the largest after the British and French navies. Barrow Dockyard in England built the first submarine in 1886 for the Ottoman Empire.

**Question 0**

On which continent did the Ottoman navy contribute most?

**Question 1**

Which region was conquered by the Ottoman fleet in the early 1500s?

**Question 2**

In what year was Egypt annexed to the Ottoman Empire?

**Question 3**

In what year did the Ottoman Empire lose Greece?

**Question 4**

Which territory was lost to the Ottoman Empire in 1830?

**Text number 40**

However, the Ottoman economy was collapsing and the navy could not sustain its strength for too long. Sultan Abdülhamid II distrusted the reformist admirals of Midhat Pasha, arguing that a large and expensive navy was of no use against the Russians in the Russo-Turkish war. He locked most of the fleet inside the Golden Horn, where the ships languished for the next 30 years. After the Young Turk Revolution in 1908, the Union and Progress Committee sought to develop a strong Ottoman naval force. In 1910, the Ottoman Naval Foundation was established to purchase new ships with public donations.

**Question 0**

Which sultan did not trust his admirals during the Russo-Turkish war?

**Question 1**

Who was the reformer who had the support of the Ottoman admirals during the Russo-Turkish war?

**Question 2**

Where was the Ottoman fleet left to disintegrate?

**Question 3**

When was the Young Turk revolution?

**Question 4**

Which Ottoman group wanted to build a stronger navy in the early 20th century?

**Text number 41**

The Ottoman military aviation was established between June 1909 and July 1911. The Ottoman Empire began to prepare its first pilots and aircraft, and with the establishment of the Aviation School (Tayyare Mektebi) in Yeşilköy on 3 July 1912, the Empire began to train its own pilot officers. The establishment of the Aviation School accelerated the progress of the military aviation programme, increased the number of recruits involved and gave new pilots an active role in the Ottoman army and navy. In May 1913, the Aviation School launched the world's first specialized intelligence training program, and the first separate intelligence department was established. In June 1914, a new military academy, the Naval Aviation School (Bahriye Tayyare Mektebi), was established. With the outbreak of the First World War, the modernisation process came to an abrupt halt. Ottoman aviation squadrons fought on many fronts during the First World War, from Galicia in the west to the Caucasus in the east and Yemen in the south.

**Question 0**

When did the Ottoman Empire first have an airborne military unit?

**Question 1**

Where was the first Ottoman flying school?

**Question 2**

On what day was the aviation school founded?

**Question 3**

What happened at the flying school in May 1913?

**Question 4**

Which new military academy was founded in June 1914?

**Text number 42**

The Ottoman government deliberately pursued a policy of developing Bursa, Edirne and Istanbul, successive Ottoman capitals, into major commercial and industrial centres, as merchants and craftsmen were essential to the creation of a new metropolis. To this end, Mehmed and his successor Bayezid also encouraged and welcomed the migration of Jews from all over Europe who settled in Istanbul and other port cities such as Salonika. In many places in Europe, Jews suffered persecution by Christians, as in Spain after the end of the Reconquista. The tolerance shown by the Turks was welcomed by the immigrants.

**Question 0**

The aim of developing Bursa and Istanbul was a deliberate act to create what?

**Question 1**

Who was Mehmed's successor?

**Question 2**

Who did Mehmed and Bayezid encourage to come to Istanbul?

**Question 3**

Which group persecuted Jews in Europe?

**Question 4**

The persecution of Jews in Spain took place after the end of which event?

**Text number 43**

Ottoman economic thinking was closely linked to the basic concepts of state and society in the Middle East, where the ultimate goal of the state was to consolidate and extend the power of the ruler, and the means of achieving this was to acquire rich sources of income by making the productive classes prosperous. The ultimate aim was to increase the income of the state without harming the welfare of the subjects, in order to prevent social disorder and to keep the traditional organisation of society intact.

**Question 0**

The economic objective of the state was to serve which ruler?

**Question 1**

Which areas were the concepts based on in the Ottoman economic system?

**Question 2**

What was the way to achieve the economic goals of the Ottoman economic system?

**Question 3**

What was the ultimate goal of the state economic system?

**Question 4**

What did the state economic system hope to avoid?

**Text number 44**

The organisation of the Ministry of Finance and the Chancellery was developed more in the Ottoman Empire than in any other Islamic government, and until the 17th century it was the leading organisation of its contemporaries. It was within this organisation that the scribal bureaucracy (known as the 'men of the pen') developed as a distinct group, partly as highly educated ulama, which evolved into a professional body. The efficiency of this professional economic body is behind the success of many of the great Ottoman statesmen.

**Question 0**

What were the two most advanced economic organisations during the Ottoman Empire?

**Question 1**

What was the name by which the cantor's scribes were known?

**Question 2**

Part of the clerk bureaucracy was trained in what?

**Question 3**

What became of the scribe bureaucracy?

**Question 4**

Until what century was the Ottoman Empire the most advanced economic organisation of Islamic governments?

**Text number 45**

The economic structure of the empire was determined by its geopolitical structure. The Ottoman Empire stood between west and east, blocking the land route to the east and forcing Spanish and Portuguese seafarers to seek a new route to the east. The empire controlled the land route, which Marco Polo once used. When Vasco da Gama bypassed the Ottoman-controlled routes and established direct trade links with India in 1498 and Christopher Columbus made his first voyage to the Bahamas in 1492, the Ottoman Empire was at its height.

**Question 0**

What was the basis of the Ottoman Empire's economic structure?

**Question 1**

The Ottoman Empire prompted sailors from which two nations to seek another route to the east?

**Question 2**

Who once used the spice route ruled by the Ottoman Empire?

**Question 3**

When were direct trade links with India established?

**Question 4**

When did Christopher Columbus sail to the Bahamas?

**Text number 46**

According to modern Ottoman studies, the change in relations between the Ottomans and Central Europe was due to the opening of new sea routes. It is possible to see the decline in the importance of the land routes to the east, as Western Europe opened up the sea routes bypassing the Middle East and the Mediterranean, as paralleling the decline of the Ottoman Empire itself. The Anglo-Ottoman Treaty, also known as the Treaty of Balta Liman, which opened the Ottoman market directly to English and French competitors, can be seen as one of the milestones in this development.

**Question 0**

What is believed to have caused the opening of new sea routes during the Ottoman Empire?

**Question 1**

The formation of the Middle East's circular sea routes may have led to the decline of which region?

**Question 2**

What is the second name of Balta Liman's contract?

**Question 3**

What impact did the Balta Liman agreement have on the Ottoman market?

**Question 4**

In which direction did the land routes lose their importance?

**Text number 47**

By developing trading centres and routes, encouraging people to expand the land they farmed and engaging in international trade through its administrative regions, the state carried out the basic economic functions of the kingdom. In all this, however, the economic and political interests of the state were dominant. Ottoman administrators, in the social and political system in which they lived, could not understand or see the desirability of the dynamics and principles of the capitalist and mercantilist economy developing in Western Europe.

**Question 0**

What developments led people to expand their farming areas in the Ottoman Empire?

**Question 1**

What controlled all the economic and political interests?

**Question 2**

What kind of economies were developed in Western Europe?

**Question 3**

The expansion of international trade through empire was the result of what?

**Text number 48**

The concentration of populations caused by the development of steamships and railways led to the rise of port cities. Urbanisation increased from 1700 to 1922, and cities grew. Improvements in health and sanitation made them more attractive places to live and work. The population of port cities such as Salonica in Greece grew from 55 000 in 1800 to 160 000 in 1912, and İzmir, with a population of 150 000 in 1800, grew to 300 000 by 1914. Some regions, however, saw their population decline: Belgrade's fell from 25 000 to 8 000, mainly due to political disputes.

**Question 0**

What did the rise of ports do to the population?

**Question 1**

Steamships and railways took off what else?

**Question 2**

In what year did urbanisation in the Ottoman Empire begin to increase?

**Question 3**

Which two improvements made cities more desirable to live in?

**Question 4**

What was the population of Salonica in 1800?

**Text number 49**

Economic and political migrations affected the whole country. For example, the annexation of Crimea and the Balkans to Russia and the annexation of Austria and the Habsburgs led to large influxes of Muslim refugees - 200,000 Crimean Tatars fled to Dobruja. Between 1783 and 1913, some 5-7 million refugees flowed into the Ottoman Empire, of whom at least 3.8 million came from Russia. Some migrations left indelible traces, such as political tensions between parts of the empire (e.g. Turkey and Bulgaria), while in other regions centrifugal effects were observed, simpler population structures created by diverse populations. The economy was also affected by the loss of craftsmen, merchants, manufacturers and farmers. A large part of the Muslim population in the Balkans migrated from the 19th century onwards to what is now Turkey. These people are called Muhacir. At the end of the Ottoman Empire in 1922, half of Turkey's urban population was made up of Muslim refugees from Russia.

**Question 0**

The annexation of which two regions led to large numbers of Muslim refugees entering the empire?

**Question 1**

Which group of 200 000 Muslims fled to Dobruja?

**Question 2**

How many refugees fled from Russia to the Ottoman Empire between 1783 and 1913?

**Question 3**

What is the name given to people who migrated from the Balkans to Turkey?

**Question 4**

In what year did the Ottoman Empire end?

**Text number 50**

Ottoman Turkish was the official language of the empire. It was the Turkish language of Oghuz, heavily influenced by Persian and Arabic. Ottomans had several influential languages: Turkish, spoken by most of the population of Anatolia and most Muslims in the Balkans except Albania and Bosnia; Persian, spoken only by the educated; Arabic, spoken mainly in Arabia, North Africa, Iraq, Kuwait, the Levant and parts of the Horn of Africa; and Somali, spoken throughout the Horn of Africa. Over the last two centuries, however, the use of these languages has become more limited and more specific: Persian was used mainly as a literary language for civilisation, while Arabic was used for religious rituals.

**Question 0**

What was the official language of the Ottoman Empire?

**Question 1**

What were the main influences on the official language of the empire?

**Question 2**

What language was spoken by the majority of Anatolians?

**Question 3**

What languages were spoken in Iraq that were influenced by the Empire?

**Question 4**

What language was used for religious purposes in the Empire?

**Text number 51**

Because of the low literacy rate (around 2-3% until the early 19th century and only around 15% at the end of the 19th century), ordinary people had to hire scribes as "special request writers" (arzuhâlcis) to communicate with the government. Ethnic groups still spoke their own language within their families and neighbourhoods (mahalles) (e.g. Jews, Greeks, Armenians, etc.). In villages where two or more ethnic groups lived together, the inhabitants often spoke each other's language. In towns, people often spoke the language of their family language; many of those who were not ethnic Turks spoke Turkish as a second language.

**Question 0**

What was the literacy rate of the public in the early 19th century in the Empire?

**Question 1**

What was the literacy rate of the national population at the end of the 19th century?

**Question 2**

What did people turn to when they needed to contact the government?

**Question 3**

What were the names of the accountants who were hired?

**Question 4**

What was the second language of those who were not ethnically Turkish?

**Text number 52**

Until the second half of the 15th century, the kingdom had a Christian majority, dominated by a Muslim minority. By the end of the 19th century, the kingdom's non-Muslim population began to decline significantly, not only because of secessions but also because of migrations. The proportion of Muslims was 60% in the 1820s, rising gradually to 69% in the 1870s and then to 76% in the 1890s. By 1914, only 19.1% of the national population was non-Muslim, consisting mainly of Christian Greeks, Assyrians, Armenians and Jews.

**Question 0**

Until when was there a Christian majority in the kingdom?

**Question 1**

Which group ruled the kingdom until the 15th century?

**Question 2**

Which group began to decline in the empire in the late 19th century?

**Question 3**

What proportion of the population of the empire was Muslim in the 1820s?

**Question 4**

In 1914, what part of the country was not Muslim?

**Text number 53**

Muslim sects considered heretical, such as the Druze, Ismailis, Alevis and Alawites, were placed below the Jews and Christians. In 1514, Sultan Selim I, whose nickname for his cruelty was 'dark', ordered the massacre of 40 000 Anatolian Alevis (qizilbash), whom he considered heretics, and reportedly declared that 'killing one Alevi was as great an afterlife reward as killing 70 Christians'." Selim was also responsible for the unprecedented rapid expansion of the Ottoman Empire into the Middle East, notably by conquering the entire Mamluk Sultanate of Egypt, which included much of the region. With these conquests, Selim further consolidated the Ottoman claim to the Islamic caliphate, although the Ottoman Sultans had claimed the title of caliph since the 13th century, starting with Murad I (reigned 1362-1389). The caliphate remained under Ottoman sultanate control for the rest of its existence, ending with its abolition by the Turkish Grand National Assembly on 3 March 1924 and the exile of the last caliph, Abdülmecid II, to France.

**Question 0**

What is considered to be a Muslim village of Druze?

**Question 1**

What was the nickname of Sultan Selim I?

**Question 2**

In what year did Sultan Selim I order the massacre of 40 000 people he considered heretics?

**Question 3**

Which group was considered heretical by Sultan Selim I and subsequently slaughtered?

**Question 4**

Under Sultan Selim I, the empire swallowed up which Egyptian sultanate?

**Text number 54**

Under the Millet system, non-Muslims were considered subjects of the kingdom, but were not subject to Muslim religion or law. The Orthodox millet, for example, was still officially and legally subject to the Justinian Code, which had been in force in the Byzantine Empire for 900 years. As the largest non-Muslim subject group (zimmi) in the Islamic Ottoman Empire, the Orthodox millet was also granted a number of special privileges in the political and commercial spheres and was subject to higher taxes than Muslim subjects.

**Question 0**

Under which system were non-Muslims considered subjects of the empire, but not bound by Muslim law?

**Question 1**

Which code had been in force for 900 years in the Byzantine Empire?

**Question 2**

What was the name given to non-Muslims in the Islamic Ottoman Empire?

**Question 3**

What taxes did being a non-Muslim in the empire lead to?

**Question 4**

Which millet was covered by Justinian's law?

**Text number 55**

The Ottomans adopted some of the cultural traditions, arts and institutions of the conquered regions and added new dimensions to them. The Ottoman Turks took many of the traditions and cultural features of the previous empires (in areas such as architecture, cuisine, music, leisure and administration) and developed them into new forms, resulting in a new and distinctive Ottoman cultural identity. Despite these new assimilations, the Ottoman dynasty, like its predecessors in the Sultanate of Rum and the Seljuk Empire, was thoroughly Persianised in its culture, language, customs and habits, and has therefore been described as a Persian empire. Intercultural marriages also played a part in creating a distinctive Ottoman elite culture. When these new cultures are compared with Turkish popular culture, their influence in the creation of Ottoman elite culture was clear.

**Question 0**

Which sultanate preceded the Ottoman dynasty?

**Question 1**

What is one way in which the empire was described in relation to culture?

**Question 2**

When the Ottoman Empire conquered a region, what also became part of the empire?

**Question 3**

The Seljuk Empire was influenced by other cultures, which is why it is called what?

**Text number 56**

Ottoman divan poetry was a highly ritualised and symbolic art form. It inherited from the Persian poetry that inspired it a wealth of symbols whose meanings and interrelationships - both similarity (مراعات نظير mura'ât-i nazîr / تناسب tenâsüb) and contrast (تضاد tezâd) - were more or less fixed. Divan ritual consisted of the continuous juxtaposition of many such images within a strict metrical framework, which allowed for the emergence of a multitude of possible meanings. The vast majority of Divan poetry was lyrical in nature: either gazelles (which form the bulk of the tradition's repertoire) or kasîds. There were, however, other general genres, notably mesnevî, which is a kind of verse romance and thus a kind of narrative poetry; the two most notable examples of this form are Fuzûlî's Leyli and Majnun and Şeyh Gâlib's Hüsn ü Aşk.

**Question 0**

What kind of Ottoman poetry is ritualised?

**Question 1**

What kind of poetry inspired Ottoman Divan poetry?

**Question 2**

What was the framework of the diva's dream?

**Question 3**

What was the name of the romantic sport of diva romance?

**Question 4**

What makes up the bulk of the diva economy?

**Text number 57**

Before the 19th century, Ottoman prose did not develop to the same extent as modern Divan poetry. This was largely due to the fact that prose was expected to largely follow the rules of sec (سجع, also transliterated as seci), or rhymed prose. It is a form of writing derived from the Arabic saj, which stipulated that there must be a rhyme between every adjective and noun in a word-string, such as a sentence. There was, however, a tradition of prose in the literature of the period, even if it was exclusively non-fictional in nature. One obvious exception was Giritli Ali Aziz Efendi's Muhayyelât ('Fantasies'), a collection of fantastic tales written in 1796, but not published until 1867. The first novel published in the Ottoman Empire was written by the Armenian Vartan Pasha. Published in 1851, it was called The Tale of Akabi (Turkish: Akabi Hikyayesi) and was written in Turkish but in Armenian characters.

**Question 0**

Prose did not develop to a higher level in the Ottoman Empire until what century?

**Question 1**

What rules did Ottoman prose have to follow?

**Question 2**

What did the sec rules require?

**Question 3**

Who wrote Muhayyelât?

**Question 4**

When was Muhayyelât written?

**Text number 58**

Because of historically close ties, French literature became the main Western influence on Ottoman literature in the second half of the 19th century. As a result, many of the same trends that prevailed in France during this period also had their Ottoman counterparts: for example, in the emerging Ottoman prose tradition, one can see the influence of Romanticism in the Tanzimat period and Realism and Naturalism in later periods; in the poetry tradition, the influence of the Symbolist and Parnassian movements was paramount.

**Question 0**

What was the greatest Western influence on Ottoman literature?

**Question 1**

During which period did the West have the greatest impact on Ottoman literacy?

**Question 2**

What Western influence was visible during Tanzimat?

**Question 3**

Which Ottoman literary movements were most influenced by the poetic tradition?

**Question 4**

Romanticism and realism were two Western movements that influenced Ottoman literature, what was the third?

**Text number 59**

Many Tanzimat-era writers wrote simultaneously in several different genres: for example, the poet Namik Kemal also wrote the important novel İntibâh ('The Awakening') in 1876, and the journalist İbrahim Şinasi is known for writing the first modern Turkish play, the one-act comedy Şair Evlenmesi ('The Poet's Marriage') in 1860. An earlier play, the farce "Vakâyi'-i 'Acibe ve Havâdis-i Garibe-yi Kefşger Ahmed" ("The Strange Incidents and Strange Cases of Cobbler Ahmed") dates from the early 19th century, but there are still doubts about its authenticity. Similarly, the author Ahmed Midhat Efendi wrote important novels in each of the major movements: romanticism (Hasan Mellâh yâhud Sırr İçinde Esrâr, 1873; "Hasan the Sailor or Mystery within a Mystery"), realism (Henüz On Yedi Yaşında, 1881; "Only seventeen years old") and naturalism (Müşâhedât, 1891; "Observations"). This diversity was partly due to the desire of the dance mat writers to disseminate as much new literature as possible in the hope that it would contribute to the revival of Ottoman social structures.

**Question 0**

Which novel was written by Namik Kemal in 1876?

**Question 1**

What did İbrahim Şinasi write in 1860?

**Question 2**

Who wrote Hasan Mellâh yâhud Sırr İçinde Esrâr?

**Question 3**

Which realistic novel was written by Ahmed Midhat Efendi in 1881?

**Question 4**

What did Tanzimat-era writers hope to achieve with their publications?

**Text number 60**

In addition to Istanbul and Edirne, examples of Ottoman architecture from the classical period can also be seen in Egypt, Eritrea, Tunisia, Algeria, the Balkans and Romania, where mosques, bridges, fountains and schools have been built. Ottoman decorative art developed from a wide range of influences because of the Ottoman Empire's wide ethnic diversity. The greatest court artists enriched the Ottoman Empire with a variety of plural artistic influences: for example, by mixing traditional Byzantine art with elements of Chinese art.

**Question 0**

Ottoman artists mixed Chinese art with what other art?

**Question 1**

The Ottoman Empire built mosques and bridges in Romania, among other things, what else was built?

**Question 2**

Why did the art of the Ottoman Empire develop as it did?

**Question 3**

Apart from Edirne, Istanbul and Egypt, where else can the influence of the Ottoman classical period be seen?

**Text number 61**

Ottoman illumination includes non-figural painted or drawn decorative art on sheets in books or muraqqa or albums, as opposed to figurative images of Ottoman miniatures. It was part of Ottoman book art along with Ottoman miniatures (taswir), calligraphy (hat), Islamic calligraphy, bookbinding (cilt) and paper marbling (ebru). In the Ottoman Empire, illuminated and illustrated manuscripts were commissioned by the sultan or the court administration. In Topkapi Palace, these manuscripts were created by artists working in Nakkashane, a studio of miniature and illuminated artists. Both religious and non-religious books could be illuminated. The levha sheets of the albums also consisted of calligraphy (hats) illuminated by tughras, religious texts, verses of poetry or proverbs and purely decorative drawings.

**Question 0**

Where can you find the sheets on which the Ottomans created illuminated decorations?

**Question 1**

What is another name for the Ottoman miniature?

**Question 2**

Ottoman calligraphy can also be called what?

**Question 3**

Who commissioned illustrated manuscripts in the Ottoman Empire?

**Question 4**

In which palace were the illustrated manuscripts created?

**Text number 62**

The art of weaving carpets was particularly important in the Ottoman Empire, as carpets were of enormous importance both as decorative furnishings, rich in religious and other symbolism, and as practical items, as it was customary to remove shoes in living quarters. The weaving of such rugs originated in nomadic cultures of Central Asia (rugs were an easily transportable form of furnishing) and eventually spread to the established societies of Anatolia. The Turks used carpets, rugs and kilims not only on the floor of the room but also hung on the walls and doorways, where they provided additional insulation. They were also commonly donated to mosques, where they often accumulated large collections.

**Question 0**

What art was important for religious symbolism and decoration in the Ottoman Empire?

**Question 1**

What was the custom of wearing shoes indoors in the Ottoman Empire?

**Question 2**

Where did carpet weaving in the kingdom start?

**Question 3**

Where did carpet weaving originally spread within the kingdom?

**Question 4**

Where did the Turks use shields for insulation?

**Text number 63**

Ottoman classical music was an important part of the education of the Ottoman elite, and many Ottoman sultans were themselves accomplished musicians and composers, such as Selim III, whose compositions are still often performed today. Ottoman classical music was largely a combination of Byzantine, Armenian, Arabic and Persian music. Compositionally, it is made up of rhythmic units called usuli, which have some resemblance to the rhythm of Western music, and melodic units called makam, which have some resemblance to Western musical modes.

**Question 0**

What kind of music was important to the elite of the Ottoman Empire?

**Question 1**

What did many sultans of the Ottoman Empire do?

**Question 2**

What is the name of the famous sultan whose compositions are still performed today?

**Question 3**

What rhythmic units are used in Ottoman classical music?

**Question 4**

What melodic units are used in Ottoman classical music?

**Text number 64**

The instruments used are a mixture of Anatolian and medieval instruments (saz, bağlama, kemence), other Middle Eastern instruments (ud, tanbur, kanun, ney) and - later in the tradition - Western instruments (violin and piano). The geographical and cultural gap between the capital and other regions gave rise to two very different styles of music in the Ottoman Empire: Ottoman classical music and folk music. In the provinces, several different types of folk music emerged. The most dominant regions and their own musical styles are the Balkan-Thracian Türküs, the North-Eastern Türküs (Laz), the Aegean Türküs, the Central Anatolian Türküs, the Eastern Anatolian Türküs and the Caucasian Türküs. Some of the characteristic styles included: Jaanissari music, Roma music, belly dancing, Turkish folk music.

**Question 0**

What are the three most commonly used Anatolian and medieval instruments in Ottoman classical music?

**Question 1**

What instruments from the Middle East can be heard in Ottoman classical music?

**Question 2**

In late Ottoman classical music you can find Western instruments, what were they?

**Question 3**

There were two main styles of music in the Ottoman Empire, what were they?

**Question 4**

What were the most distinctive musical styles of the Ottoman provinces?

**Text number 65**

Ottoman cuisine refers to the cuisine of the capital Istanbul and regional capitals, where a melting pot of cultures created a common cuisine shared by most of the population, regardless of ethnicity. This diverse cuisine was honed in the kitchens of the imperial palace by chefs brought in from specific parts of the empire to create and experiment with different ingredients. The creations of the Ottoman palace kitchens filtered down to the population, for example through the dishes prepared at Ramadan and the Yalıs of the pashas, and from there they spread to the rest of the population.

**Question 0**

Known as Ottoman cuisine, the kitchen refers to the food eaten where?

**Question 1**

In which kitchen was the Ottoman kitchen finished?

**Question 2**

What kind of religious event can the public experience through the creations of the Imperial Palace?

**Question 3**

Cooking in the Yalıs of the Pashas was one way in which Ottoman cuisine could spread to whom?

**Question 4**

What were the ingredients of the cooks in the kitchens of the imperial palace?

**Text number 66**

Much of the current cuisine of the former Ottoman regions is derived from common Ottoman cuisine, particularly Turkish cuisine, but also Greek cuisine, Balkan cuisine, Armenian cuisine and Middle Eastern cuisine. Many common dishes of the region, which are descendants of the once widespread Ottoman cuisine, are yoghurt, döner kebab/gyro/shawarma, cacık/tzatziki, ayran, pita bread, feta cheese, baklava and lahmacun, moussaka, yuvarlak, köfte/keftés/kofta, börek/boureki, rakı/rakia/tsipouro/tsikoudia, meze, dolma, sarma, rice pilaf, Turkish coffee, sujuk, kashk, keşkek, manti, lavash, kanafeh etc.

**Question 0**

Where does Turkish cuisine come from?

**Question 1**

Which regions have Ottoman cuisine origins?

**Question 2**

Turkish and Greek cuisine originated from Ottoman cuisine, as did the food of which other regions?

**Question 3**

Where does Turkish coffee come from?

**Question 4**

What kind of cuisine does pita bread come from?

**Text number 67**

During Ottoman history, the Ottomans managed to build up a large library collection, which included translations of books from other cultures as well as original manuscripts. Much of this desire for local and foreign manuscripts arose in the 15th century. Sultan Mehmet II ordered Georgios Amiroutzes, a Greek scholar from Trabzon, to translate Ptolemy's book on geography and make it available to Ottoman schools. Another example is Ali Qushji, an astronomer, mathematician and physicist from Samarkand, who became a professor at two madrasas and made an impact in Ottoman circles through his writings and the activities of his students, although he spent only two or three years in Istanbul before his death.

**Question 0**

In which century did the Ottomans start to want foreign scripts?

**Question 1**

Which sultan ordered a Greek scholar to translate the works of Ptolemy?

**Question 2**

Who did the Ottoman sultan order to translate Ptolemy's work?

**Question 3**

How many years did Ali Qushji spend in Istanbul?

**Question 4**

Where was Ali Qushji from?

**Text number 68**

The main sports practised by the Ottomans were Turkish wrestling, hunting, Turkish archery, horse riding, javelin throwing, hand wrestling and swimming. European-style sports clubs were formed with the rise of football in Constantinople in the 19th century. The leading clubs in Istanbul were the Beşiktaş Gymnastics Club (1903), the Galatasaray Sports Club (1905) and the Fenerbahçe Sports Club (1907). Football clubs were also established in other provinces, such as Karşıyaka Sports Club (1912), Altay Sports Club (1914) and İzmir Turkish Fatherland Football Club (later Ülküspor) (1914).

**Question 0**

When did European sports clubs start to form in the Ottoman Empire?

**Question 1**

Where did football matches become popular in the Ottoman Empire?

**Question 2**

What was the leading sports club in 1905?

**Question 3**

In what year was Altay Sports Club founded?

**Question 4**

What was the former name of the football club Ülküspor?

**Document number 330**

**Text number 0**

The philosophy of space and time is a branch of philosophy that deals with questions concerning the ontology, epistemology and nature of space and time. Although these ideas have been central to philosophy since its inception, the philosophy of space and time was both an inspiration for and a central part of early analytic philosophy. It focuses on a number of fundamental questions, such as whether time and space exist independently of mind, whether they exist independently of each other, what explains the apparently unidirectional flow of time, whether there are other times than the present, and questions about the nature of identity (especially the nature of identity over time).

**Question 0**

Which branch of philosophy deals with ontological issues?

**Question 1**

What kind of philosophy inspired the philosophy of space and time?

**Question 2**

The philosophy of space and time focuses on whether time and space exist independently of what?

**Question 3**

The philosophy of space and time focuses on what kind of flow in time?

**Question 4**

What philosophy is ontology about?

**Question 5**

What inspired the study of space and time?

**Question 6**

What does not change over time?

**Question 7**

Within which is the flow multidirectional?

**Text number 1**

The earliest recorded Western philosophy of time was put forward by the ancient Egyptian thinker Ptahhotep (c. 2650-2600 BC), who said: "Do not reduce time in following your desires, for wasting time is an abomination to the spirit." The Vedas, the earliest texts of Indian and Hindu philosophy, dating from the late 2nd millennium BC, describe an ancient Hindu cosmology in which the universe goes through repeated cycles of creation, destruction and rebirth, each cycle lasting 4 320 000 years. Ancient Greek philosophers such as Parmenides and Heraclitus wrote essays on the nature of time.

**Question 0**

Who proposed the earliest recorded Western philosophy of time?

**Question 1**

When did the Vedas originate?

**Question 2**

What philosophies are the Vedas oriented towards?

**Question 3**

What do the Vedas describe?

**Question 4**

How long a rebirth cycle are the Vedas talking about?

**Question 5**

What was first recorded in the 26th century BC.

**Question 6**

Who warned people not to prolong the passage of time they wanted?

**Question 7**

What is the name of the earliest Egyptian texts?

**Question 8**

Which texts date back to 2000 BC.

**Question 9**

How long did the Greeks think it was?

**Text number 2**

In St Augustine's Book of Confessions 11, he reflects on the nature of time and asks, "What then is time?". If no one asks me, I know; if I want to explain it to the questioner, I do not know." He goes on to comment on the difficulty of thinking about time and points out the imprecision of common language: 'For there are few things we speak of correctly; most things we speak of incorrectly, but still we understand what is meant.' But Augustine made the first philosophical argument for the reality of creation (contrary to Aristotle) in his discussion of time, saying that knowledge of time depends on knowledge of the movement of things, and therefore time cannot exist where there are no beings to measure its passage (Confessions Book XI ¶30; City of God Book XI ch. 6).

**Question 0**

Which Christian philosopher thought about time?

**Question 1**

What does St Augustine comment in Book 11 about thinking about time?

**Question 2**

Who made the first philosophical argument for the creation of reality?

**Question 3**

On what did Augustine say that the knowledge of time depends?

**Question 4**

Where did Augustine say that time cannot appear?

**Question 5**

Who deals with the nature of time in his first book?

**Question 6**

What did St Augustine think common speech describes adiquetly?

**Question 7**

What was Aristotle's first philosophical argument?

**Question 8**

Who said time is everywhere?

**Text number 3**

In the early 1100s, the Muslim physicist Ibn al-Haytham (Alhacen or Alhazen) discussed the perception of space and its epistemological implications in his book on optics (1021). He also rejected Aristotle's definition of topos (Physics IV) by means of geometric demonstrations and defined place as a mathematical spatial extension. His experimental proof of the intromission model of vision led to changes in the conception of visual spatial perception, contrary to the earlier theory of the emission of vision supported by Euclid and Ptolemy. By tying visual perception of space to prior bodily experience, Alhacen explicitly rejected the intuitive nature of perception and thus the autonomy of vision. Without concrete concepts of distance and size to correlate, vision can tell us little about such things. "

**Question 0**

Which 11th century Muslim physicist discussed the perception of space and its epistemological implications?

**Question 1**

Which book from the 11th century dealt with the concept of space and its epistemological implications?

**Question 2**

Whose definition of topos did Alhazen reject?

**Question 3**

Alhazen's experimental proof of the intromission model of vision led to a change in understanding of what?

**Question 4**

Alhazen noted that without concrete concepts of distance and size to correlate, vision can tell us what about spatial perception?

**Question 5**

Who discussed the concept of space in the 1100s?

**Question 6**

Which book was written in the 1100s about the time?

**Question 7**

Who disputed al-Haytham's definition of topos?

**Question 8**

What did Euclid and Ptolemy have to do with the visual perception of space?

**Question 9**

Who said the vision is independent?

**Text number 4**

In 1781, Immanuel Kant published his Critique of Pure Reason, one of the most influential works in the history of the philosophy of space and time. He describes time as an a priori concept which, together with other a priori concepts such as space, allows us to understand sensory experience. Kant denies that space or time are substances, entities in themselves or learned through experience; rather, he argues that both are parts of a systematic framework that we use to structure our experience. Space measurements are used to determine how far apart objects are from each other, and time measurements are used to quantitatively compare the time (or duration) between events. Although space and time are considered transcendently ideal in this sense, they are also empirically real - that is, they are not mere illusions.

**Question 0**

When Kant published one of the most influential works in the history of the philosophy of space and time.

**Question 1**

What was Kant's most influential work in the history of the philosophy of space and time called?

**Question 2**

What does Kant describe for your time?

**Question 3**

What was a concept like time according to Kant?

**Question 4**

What did Kant say that time and space make possible?

**Question 5**

Who published a critique of Pure Reason in the 17th century?

**Question 6**

Who said that priori concepts allow us to understand time?

**Question 7**

What does Kant say time and space are?

**Question 8**

What does Kant say that we use as a framework for structuring time?

**Question 9**

According to mto can not what is the illusion?

**Text number 5**

In arguing against the absolutist position, Leibniz presents several thought experiments aimed at showing that the assumption of facts such as absolute position and velocity is contradictory. These arguments draw heavily on two principles central to his philosophy: the principle of sufficient reason and the identity of indivisible beings. According to the principle of sufficient reason, for every fact there is a reason sufficient to explain what and why it is as it is and not otherwise. According to the principle of unidentifiable identity, if two entities cannot be separated in any way, they are one and the same thing.

**Question 0**

What was Leibniz against?

**Question 1**

What principles underpinned Leibniz's arguments?

**Question 2**

Leibnitz believed that there is a reason that is sufficient to explain what and why is the way it is, and not otherwise for every what?

**Question 3**

What says that if two entities cannot be separated in any way, they are one and the same thing?

**Question 4**

Whose position does Leibniz support?

**Question 5**

Which two principles did Leibniz oppose?

**Question 6**

According to which two things are not necessarily the same just because no difference can be detected?

**Text number 6**

The example Leibniz uses concerns two proposed universes in absolute space. The only noticeable difference between them is that the latter is located five feet to the left of the former. This example is only possible if something like absolute space exists. According to Leibniz, however, such a situation is not possible, for if it were, there would be no sufficient reason for the universe to be in absolute space, since it could well be anywhere else. Therefore, it contradicts the principle of sufficient cause, and there could be two separate universes, inseparable in every way, which would contradict the identity of the inseparable.

**Question 0**

How many universes are there in Leibniz's example?

**Question 1**

Where are Leibniz's universes located?

**Question 2**

How far apart are Leibniz's universes?

**Question 3**

What is the only way in which Leibniz's example could be possible?

**Question 4**

Whose example is about one universe in two places?

**Question 5**

What does Leibniz place at two points in deep space?

**Question 6**

What proves the existence of absolute space?

**Text number 7**

In Clarke's (and Newton's) response to Leibniz's arguments, the bucket argument stands out: water in a bucket, suspended from a rope and set spinning, starts from a flat surface. When the water begins to spin in the bucket, its surface becomes concave. If the bucket is stopped, the water continues to spin, and as it continues to spin, the surface remains concave. The concave surface is obviously not due to the interaction between the bucket and the water, as the surface is flat when the bucket starts spinning, becomes concave when the water starts spinning, and remains concave when the bucket stops.

**Question 0**

What stood out in Clark's response to Leibniz?

**Question 1**

Clark claims that water in a bucket, suspended from a rope and spun, will initially form some sort of surface?

**Question 2**

What happens to the water when the bull spins?

**Question 3**

If Santa stops, the water does what?

**Question 4**

What does the water surface not seem to be due to?

**Question 5**

Who makes the bucket argument in response to Clarke and Newton?

**Question 6**

What becomes flat when the bucket spins?

**Question 7**

What does the bucket interact with to form the surface of the water?

**Question 8**

What becomes flat when the bucket stops spinning?

**Text number 8**

Leibniz describes a space that exists only as a relation between objects and has no existence beyond the existence of these objects. Motion exists only as a relation between these objects. Newtonian space provided an absolute frame of reference within which objects can have motion. In Newton's system, the frame of reference exists independently of the objects within it. These objects can be described as moving in relation to space itself. For many centuries, evidence of a concave water surface was authoritative.

**Question 0**

Leibniz describes space as existing only as a relation between what?

**Question 1**

According to Leibniz, what has no existence without the existence of counter-arguments?

**Question 2**

What is the absolute frame of reference within which objects can move?

**Question 3**

How does a reference frame exist in Newton's system between the objects within it?

**Question 4**

How long was the evidence of a concave water surface the authority on space?

**Question 5**

What does space exist independently of?

**Question 6**

What is the relationship between space and objects?

**Question 7**

What is the absolute frame of reference for space?

**Question 8**

What is dependent on Newton's framework of space?

**Question 9**

Which evidence is still authoritative?

**Text number 9**

Mach suggested that thought experiments such as the bucket argument are problematic. If we were to imagine a universe with only a bucket, Newton suggested that this bucket could be made to rotate relative to absolute space, and the water inside it would form its characteristic concave surface. But since there is nothing else in the universe, it would be difficult to confirm that the bucket is actually spinning. It seems equally possible that the surface of the water in the bucket would remain flat.

**Question 0**

How did Mach describe thought experiments like the bucket argument?

**Question 1**

What's hard to fix about a bucket when there is nothing else in the universe?

**Question 2**

What was equally possible on the surface of the water in the bucket?

**Question 3**

Who expanded the thought experiments?

**Question 4**

What can be confirmed about the bucket, independently of other objects in the universe?

**Question 5**

What could not stay flat in absolute space?

**Text number 10**

Mach argued that in an otherwise empty universe, the water experiment would remain flat. But if another object, perhaps a distant star, were added to this universe, there would now be something against which the bucket could be seen to rotate. The water inside the bucket could possibly be slightly curved. To explain the curve we observe, the increase in the number of objects in the universe also increases the curvature of the water. Mach argued that the momentum of a body, whether angular or linear, exists as the sum of the effects of other bodies in the universe (Mach's principle).

**Question 0**

What did Mach claim about the water experiment in an otherwise empty universe?

**Question 1**

What did Mach claim would happen if another object was introduced into the universe of the bucket?

**Question 2**

What effect does an increase in the number of objects in the universe have on the curvature of water?

**Question 3**

What is the name of Mach's argument?

**Question 4**

Mach argued that the momentum of a body exists as the sum of the effects of.

**Question 5**

Who said that a water experiment in an empty universe would never be flat?

**Question 6**

What would have to be removed from the universe to prove that the bucket is moving?

**Question 7**

What is reduced when objects are added to the universe?

**Question 8**

According to which principle is the momentum of a body independent of other bodies in the universe?

**Text number 11**

Albert Einstein proposed that the laws of physics should be based on the principle of relativity. According to this principle, the rules of physics must be the same for all observers, regardless of the frame of reference used, and the speed of light travel is the same in all frames of reference. The theory is based on Maxwell's equations, which show that electromagnetic waves travel in a vacuum at the speed of light. However, Maxwell's equations give no indication of what this speed is related to. Before Einstein, it was thought that this speed was relative to a solid medium called the light-producing ether. In contrast, special relativity claims that light travels at the speed of light in all inertial frames, and considers the implications of this claim.

**Question 0**

Albert Einstein proposed that the laws of physics should be based on what principle?

**Question 1**

According to the principle of proportionality, the rules of physics must be the same for whom?

**Question 2**

What is the speed of light in all frames of reference?

**Question 3**

Who motivated Einstein's theory?

**Question 4**

Before Einstein, speed was thought to be proportional to what?

**Question 5**

Who suggested that the laws of physics do not depend on relativity?

**Question 6**

What did Einstein claim depended on the observer's frame of reference?

**Question 7**

What is the principle by which light travels at different speeds depending on the point of reflection?

**Question 8**

What was the equation behind Einstein's theory?

**Text number 12**

In classical physics, an inertial reference frame is one in which a body that is not subjected to forces does not accelerate. In general relativity, an inertial reference frame is one that follows the geodesic path of space-time. A body moving against the geodesic orbit experiences a force. A free-falling object does not experience a force because it follows a geodesic arc. However, an object standing on the Earth experiences a force because the surface of the planet holds it against the geodesic arc. On this basis, a bucket of water spinning in empty space experiences a force because it rotates with respect to the geodesic orbit. Water becomes concave, not because it rotates relative to distant stars, but because it rotates relative to the geodesic orbit.

**Question 0**

In classical physics, an inertial reference frame is one in which an object without force does what?

**Question 1**

What follows from the geodesic arc of space-time?

**Question 2**

What does a free-falling object not experience?

**Question 3**

What holds an object standing on the ground against its geodesic form?

**Question 4**

Why does relativity theory say that water becomes concave?

**Question 5**

What kind of frame contains objects that do not accelerate when force is applied to them?

**Question 6**

What does the external framework entail?

**Question 7**

What do objects moving against the geodesic not experience?

**Question 8**

What is the object in free fall moving against?

**Question 9**

What do free-falling objects experience?

**Text number 13**

Einstein partly supports Mach's principle, since distant stars explain inertia because they form a gravitational field against which acceleration and inertia occur. But contrary to Leibniz, this distorted space-time is as essential to an object as its other properties, such as volume and mass. If, contrary to idealism, people think that objects exist independently of mind, it seems that relativism obliges them also to think that space and time have exactly the same kind of independent existence.

**Question 0**

How does Einstein defend Mach's principle?

**Question 1**

How does Einstein's theory compare with Leibniz's?

**Question 2**

What is considered to be contrary to idealistic beliefs about space?

**Question 3**

Who supports Einstein's theory?

**Question 4**

Whose theory praises Leibniz?

**Question 5**

What do idealists think cannot exist independently of the mind?

**Question 6**

Space and what is dependent on its existence?

**Text number 14**

The coordinating definition has two main features. The first relates to the matching of units of length with certain physical objects. This is because we can never conceptualise length directly. Instead, we have to choose a physical object, such as the Bureau International des Poids et Mesures standard metre or the wavelength of cadmium, as the unit of length. The second property concerns discrete objects. Although we can presumably directly test the similarity of the length of two adjacent measuring rods, we cannot learn as much from two rods that are far apart. Even if we assume that two rods are seen to be equal in length whenever they are brought close together, we are not justified in claiming that they are always equal in length. This impossibility undermines our ability to decide that two distant objects are equal in length. On the contrary, the similarity of length must be established by definition.

**Question 0**

How many main features does a coordinating definition have?

**Question 1**

What is the first feature of the coordinate definition?

**Question 2**

What is the motivation behind the first feature?

**Question 3**

What is the second feature of coordinate definition?

**Question 4**

The similarity in length must be set how?

**Question 5**

By which definition cannot units of length be associated with physical objects?

**Question 6**

What measurements can be made independently?

**Question 7**

What can be determined about two objects regardless of their distance from each other?

**Question 8**

What is always the same regardless of location?

**Question 9**

How should the l;ength difference be set?

**Text number 15**

In the classical case, the invariance or symmetry group and the covariance group are congruent, but interestingly, they differ in relativistic physics. The symmetry group in general relativity includes all differentiable transformations, i.e. all properties of an object are dynamical, i.e. there are no absolute objects. The formulations of general relativity, unlike those of classical mechanics, do not have a common standard, i.e. there is no single formulation that is combined with the transformations. As such, the covariance group of general relativity is just the covariance group of each theory.

**Question 0**

What belongs to the symmetry group in general relativity?

**Question 1**

What is the difference between invariance, symmetry and the group in relativistic physics?

**Question 2**

What theory does relativity differ from?

**Question 3**

Which are not pairs of transformations of relativity?

**Question 4**

The covariance group of general relativity is the covariance group of how many theories?

**Question 5**

Which groups do not coincide in the classical case?

**Question 6**

Which groups coincide in relative physics?

**Question 7**

What is absolute according to the theory of relativity?

**Question 8**

With which theory is the theory of relativity consistent?

**Text number 16**

The problem of the direction of time stems directly from two contradictory factors. First, the fundamental laws of physics are time-invariant; if a film of any process described by the above laws were taken and played backwards, it would still describe a physically possible process. Second, at the macroscopic level, our experience of time is not time-invariant. Glass can fall and break, but shards of glass cannot reassemble and fly onto tables. We have memories of the past, but nothing of the future. We feel we cannot change the past, but we can influence the future.

**Question 0**

How many contradictions are there in the direction of time problem?

**Question 1**

Which physical laws are time-invariant?

**Question 2**

If a film was shot according to the laws of physics and played backwards, what would it still depict?

**Question 3**

What is our experience of time at macro level?

**Question 4**

What do we have no memories of?

**Question 5**

Which laws are time reversal conversions?

**Question 6**

What do we experience as a time reversal variant?

**Question 7**

What can we influence beyond the future?

**Text number 17**

But in statistical mechanics, things are more complicated. On the other hand, statistical mechanics is much better than classical thermodynamics, because thermodynamic behaviour, such as glass breaking, can be explained by the fundamental laws of physics and statistical postulates. However, unlike classical thermodynamics, statistical mechanics is time-symmetric. The second law of thermodynamics, as it appears in statistical mechanics, only states that there is an overwhelming probability that net chaining will increase, but it is not an absolute law.

**Question 0**

How are things in statistical mechanics?

**Question 1**

Which are better than classical thermodynamics?

**Question 2**

To explain glass breakage, the basic laws of physics can be combined with what?

**Question 3**

Is statistical mechanics asymmetric or symmetric with respect to time reversal?

**Question 4**

What is the second law of thermodynamics as it appears in statistical mechanics?

**Question 5**

What kind of mechanics help simplify things?

**Question 6**

What is better than statistical mechanics?

**Question 7**

What thermodynamic behaviour cannot be explained by the fundamental laws of physics?

**Question 8**

What is the law of abso;ute in statistical mechanics?

**Text number 18**

A third, though much less represented, solution is that the laws are not symmetric in time. For example, certain processes in quantum mechanics related to the weak nuclear force are not time-reversible, bearing in mind that in the context of quantum mechanics, time reversibility involves a more complex definition. However, this type of solution is inadequate because (1) there are too few time asymmetric phenomena in quantum mechanics to explain the uniformity of macroscopic time asymmetry and (2) it is based on the assumption that quantum mechanics is the final or correct description of physical processes [citation needed].

**Question 0**

What does the third type of solution to the problem of the direction of time claim?

**Question 1**

What is a nuclear power that is not reversible in time?

**Question 2**

There are too few time asymmetric phenomena in quantum mechanics because of what kind of time asymmetry?

**Question 3**

What does the thirs solution claim to be time-reversal symmetric?

**Question 4**

Which quantum mechanical processes are reversible?

**Question 5**

Which asymmetric phenomena are common in quantum mechanics?

**Text number 19**

One recent proponent of the law of time solution is Tim Maudlin, who argues that the fundamental laws of physics are the laws of temporal evolution (see Maudlin ). Elsewhere, however, Maudlin argues that '[the passage of time] is an inherent asymmetry in the temporal structure of the world...'. It is this asymmetry that justifies the difference between sequences from past to future and sequences from future to past' [ibid, 2010 edition, p. 108]. It is thus arguably difficult to judge whether Maudlin is suggesting that the direction of time is a consequence of laws or is itself primitive.

**Question 0**

Who says that the fundamental laws of physics are the laws of time?

**Question 1**

Maudlin argues that the passage of time is an asymmetry of what kind?

**Question 2**

On what basis are the sections separated?

**Question 3**

Whose proposal is difficult to assess in terms of the direction of time?

**Question 4**

Who owns the solution to the laws?

**Question 5**

Who says that the laws of physics are not the laws of temporal evolution?

**Question 6**

What does Maudlin claim, that time is not in the structure of the world?

**Question 7**

What is the basis of symbolism in the thematic structure of the world?

**Text number 20**

The problem of the flow of time, as it has been treated in analytic philosophy, originated in an article by J. M. E. McTaggart. In this paper, McTaggart proposes two "time series". The first series, designed to explain our intuition of a temporal coming, or moving Now, is called the A series. In the A-series, events are ordered according to whether they are in the past, present or future, in simple and relative terms. In the B-series, all references to the present and the associated temporal modalities of past and future are removed and all events are ordered according to the temporal relations "earlier than" and "later than".

**Question 0**

Who started the debate in analytic philosophy on the problem of the passage of time?

**Question 1**

How many "time series" did McTaggart propose?

**Question 2**

What was the name of McTaggart's first series?

**Question 3**

Series A arranges events according to whether they are in the past, present or future, and in relation to what else?

**Question 4**

What is the name of the second series of McTaggart?

**Question 5**

Who created the problem of the passage of time?

**Question 6**

What orders events according to whether they exist in the past, present or future?

**Question 7**

What references to the past will be made?

**Text number 21**

According to presentism, time is an order of different realities. At a given point in time, some things exist and others do not. This is the only reality we can deal with, and we cannot say, for example, that Homer exists, because at this moment he does not exist. An eternalist, on the other hand, considers time to be a dimension of reality corresponding to the three spatial dimensions, and therefore all things - past, present and future - can be said to be as real as things in the present. According to this theory, therefore, Homer does exist, although we still have to use special language when talking about something that exists far away in time - just as we would use special language when talking about something far away (the very words near, far, above, below and so on are directly comparable to expressions such as in the past, a minute ago and so on).

**Question 0**

According to which theory is time the order of different realities?

**Question 1**

According to presentism, at a given moment some things are doing what?

**Question 2**

who believes that time is a dimension of reality on a par with the three spatial dimensions.

**Question 3**

What can be said to be as real as the things of the present, according to the believer in eternity?

**Question 4**

According to the theory of immortalisation, what should we use to describe Homer?

**Question 5**

What is the time of existence of the different relations?

**Question 6**

Which states that all things have either always existed or not.

**Question 7**

What do etherialists say time is independent of?

**Question 8**

What is more real, according to the eternalists?

**Text number 22**

The positions on the permanence of objects are more or less the same. The endurantist holds that the persistence of an object in time means that it exists at completely different times (each instance of existence can be regarded as somehow distinct from, though numerically identical to, previous and future instances). Perdurantism, on the other hand, holds that the existence of a thing in time means that it exists as a continuous reality, and that when we consider a thing as a whole, we must consider the totality of all its "temporal parts" or instances of existence. Endurantism is considered a conventional view, and it stems from our prephilosophical ideas (when I talk to someone, I think of talking to that person as a whole object, not just as part of an entity that transcends time), but perdurantists have attacked this position. (An example of a perdurantist is David Lewis.) One argument used by perdurantists to justify the superiority of their view is that perdurantism is able to account for the change of objects.

**Question 0**

How similar are the positions on the permanence of objects?

**Question 1**

Who considers that the survival in time of an object means that it exists at completely different times?

**Question 2**

Who says that the existence of something in time means that it exists as a continuous reality?

**Question 3**

Which view is considered traditional?

**Question 4**

Who is an example of a perdurantist?

**Question 5**

Who says that objects exist imperfectly in the past, present and future?

**Question 6**

Who says that an object has to exist in different realities?

**Question 7**

Where does endurantism take account of change?

**Question 8**

What says that when we speak to a human being, we are speaking to part of a multi-temporal being?

**Text number 23**

However, causal asymmetry can be observed in a non-intrinsic, non-metaphysical way, when a human hand drops a cup of water, which breaks into pieces on a hard floor, causing the liquid to spill. In this order, the causes of the pattern of cup fragments and water leakage can be easily explained by the trajectory of the cup, irregularities in its structure, the angle of impact with the floor, etc. However, if the same event is applied in reverse, it is difficult to explain why the different pieces of the cup fly into the human hand and reposition themselves exactly in the shape of the cup, or why the water settles completely inside the cup. The reasons for the structure and shape of the cup and the encapsulation of water by the hand inside the cup are not easy to pinpoint, since neither the hand nor the floor can produce such cup or water formations. This asymmetry is observable because of two features: i) the relationship between the agent capacity of the human hand (i.e. what it can and cannot do and what it is for) and the agent capacity of the non-animal hand (i.e. what the floor can and cannot do and what it is for) and ii) the fact that the pieces of the cup came to possess exactly the nature and number of the cup before assembly. In short, such asymmetry is due to the relationship between the temporal direction on the one hand and the implications of form and function on the other.

**Question 0**

How can causal asymmetry be detected?

**Question 1**

How many features of asymmetry can be seen in the cup example?

**Question 2**

The asymmetry is due to which direction of the relationship?

**Question 3**

What causes the asymmetry other than the direction?

**Question 4**

What can be observed arbitrarily?

**Question 5**

How many examples of symbolism can be observed in the example of the cup?

**Question 6**

The symmetry is due to the ralation in which direction?

**Question 7**

What is the symmetry based on other than direction?

**Document number 331**

**Text number 0**

Traditionally regarded as the last phase of the Stone Age, the Neolithic period followed the late Holocene Epipalaeolithic period and began with the onset of agriculture, leading to the 'Neolithic Revolution'. It ended with the widespread use of metal tools (in the Copper or Bronze Age or, in some geographical areas, the Iron Age). The Neolithic period is the progression of behavioural and cultural characteristics and changes, such as the use of wild and domesticated crops and livestock.

**Question 0**

Which period is commonly known as the last phase of the Stone Age?

**Question 1**

Which era preceded the Neolithic period?

**Question 2**

Which event is related to the start of farming?

**Question 3**

In which era did the use of metal tools increase?

**Question 4**

What period is commonly referred to as the end of the Copper Age?

**Question 5**

Which era preceded the Stone Age?

**Question 6**

Which event is linked to the beginning of the animals?

**Question 7**

In which era did the use of metal animals increase?

**Question 8**

What is the progress of agriculture?

**Text number 1**

The beginning of the Neolithic culture is considered to be in the Levant (Jericho, today's West Bank) around 10 200-8 800 BC. It developed directly from the region's Epipalaeolithic Natufian culture, whose inhabitants were pioneers in the use of wild cereals, which then developed into true agriculture. The Natufian period was between 12 000 and 10 200 BC, while the so-called 'Protoneolithic period' is now included in the Prepotterial Neolithic Period (PPNA), which dates from 10 200 to 8 800 BC. As the Natufians had become dependent on wild cereals for their diet and a sedentary system had begun to develop among them, the climatic changes associated with the recent drought are thought to have forced people to develop agriculture.

**Question 0**

Which period marks the beginning of Neolithic culture?

**Question 1**

Where did Neolithic culture begin?

**Question 2**

Which food was the key to the development of agriculture?

**Question 3**

Which era lasted between 12 000 and 10 200 BC?

**Question 4**

Which period marks the beginning of the farming culture?

**Question 5**

Where did the Dryas culture start?

**Question 6**

Which food was the key to the development of the culture?

**Question 7**

Which era lasted from 13 000 to 8 800 BC?

**Question 8**

What is believed to have forced people to develop culture?

**Text number 2**

Not all these cultural elements typical of the Neolithic period were present everywhere in the same order: the earliest agricultural societies in the Middle East did not use pottery. Elsewhere in the world, such as in Africa, South Asia and South-East Asia, independent domestication events led to their own regionally distinctive Neolithic cultures, which emerged completely independently of European and South-West Asian cultures. Early Japanese societies and other East Asian cultures used pottery before the development of agriculture.

**Question 0**

What objects were not used by early farming societies in the Middle East ?

**Question 1**

How did the use of ceramics help early Japanese societies to develop?

**Question 2**

Which trend led to the development of local Neolithic cultures in different parts of the world?

**Question 3**

What objects were not used by early farming societies in Africa?

**Question 4**

How did the use of ceramics help early African societies to develop?

**Question 5**

What trend led to the development of distinct African cultures around the world?

**Question 6**

Who used ceramics before the developments?

**Question 7**

Where did independent domestication events lead to their own cultures?

**Text number 3**

The Neolithic Period 1 (PPNA) began about 10 000 years ago in the Levant. In southeastern Turkey, the temple site of Göbekli Tepee, dated to around 9 500 BC, can be considered the beginning of the period. The site was developed by pastoralist and hunter-gatherer tribes, as evidenced by the absence of permanent settlement nearby, and may be the oldest known man-made place of worship. At least seven stone circles covering 25 hectares (10 ha) contain limestone pillars carved with animals, insects and birds. Perhaps as many as hundreds of people used stone tools to create the pillars that could support the roofs. Other early PPNA sites dating from around 9 500-9 000 BC have been found in Jericho, Israel (notably Ain Mallaha, Nahal Oren and Kfar HaHoresh), Gilgal in the Jordan Valley and Byblos in Lebanon. The beginning of Neolithic period 1 coincides to some extent with the Tahun and the Heavy Neolithic period[citation needed].

**Question 0**

When did the Neolithic Period 1 (PPNA) begin?

**Question 1**

Where is the Göbekli Tepe temple located?

**Question 2**

Who built the Göbekli Tepe temple?

**Question 3**

What is the name of the earliest man-made place of worship?

**Question 4**

When did the Neolithic 1 (PPNA) period end?

**Question 5**

Where is Gilgal located?

**Question 6**

Who built Gilgal?

**Question 7**

What is the name of the earliest man-made pillar?

**Question 8**

When was the earliest man-made pole built?

**Text number 4**

According to the ASPRO chronology, the Neolithic Period 2 (PPNB) began in the Levant (Jericho, Israel) around 8 800 BC. As with the PPNA dates, there are two versions, both from the same laboratories mentioned above. However, this terminology system is not suitable for the settlement of south-eastern Anatolia and the Central Anatolian Basin. This period predates the Mesolithic period. A settlement of 3000 inhabitants was found on the outskirts of Amman in Jordan. It is considered one of the largest prehistoric settlements in the Middle East, known as 'Ain Ghazal, and was continuously inhabited from about 7 250 to 5 000 BC.

**Question 0**

When did the Neolithic Period 2 (PPNB) begin?

**Question 1**

Which era followed the Neolithic 2 (PPNB) era?

**Question 2**

How many settlers were found in Jordan?

**Question 3**

What is the name of one of the largest prehistoric settlements in the Middle East?

**Question 4**

When did the Neolithic 2 (PPNB) era end?

**Question 5**

Which era preceded the Neolithic 2 (PPNB) era?

**Question 6**

How many new settlers were established in the PPNA?

**Question 7**

What is the name of one of the largest prehistoric settlements in the PPNA?

**Question 8**

When was Amman continuously inhabited?

**Text number 5**

Around 10 200 BC, the first fully developed Neolithic cultures appeared, belonging to the Pre-Pottery Neolithic A (PPNA) phase, the area of the Fertile Crescent. Around 10 700-9 400 BC, a settlement was established at Tell Qaramel, 10 km north of Aleppo. The settlement included two temples dating back to 9 650 AD. Around 9000 BC. During the PPNA, one of the world's first cities, Jericho, appeared in the Levant. It was surrounded by a stone and marble wall and was home to 2,000-3,000 people and a massive stone tower. Around 6 400 BC. In Lebanon, Israel and Palestine, Syria, Anatolia and northern Mesopotamia, the Halaf culture appeared, based on dry farming.

**Question 0**

When did the Pre-Pottery Neolithic A (PPNA) phase begin?

**Question 1**

When was Tell Qaramel settled?

**Question 2**

How many temples were built in Tell Qaramel?

**Question 3**

What was the name of the city that first appeared during the PPNA?

**Question 4**

What materials were used to build the wall around Jericho?

**Question 5**

When did the Pre-Pottery Neolithic A (PPNA) phase end?

**Question 6**

When did the PPNA develop settlement?

**Question 7**

What was the name of the city that first appeared during Tell Qaramel?

**Question 8**

How many temples were built in the PPNA?

**Question 9**

What materials were used to build the wall around the PPNA?

**Text number 6**

In 1981, a team of researchers from the Maison de l'Orient et de la Méditerranée, including Jacques Cauvin and Oliver Aurenche, divided the Middle Eastern Neolithic chronology into ten periods (0-9) based on social, economic and cultural characteristics. In 2002, Danielle Stordeur and Frédéric Abbès developed this system by dividing it into five periods. Natufian (1) between 12 000-10 200 BC, Khiamian (2) between 10 200-8 800 BC, PPNA: Sultanian (Jericho), Mureybetian, early PPNB (PPNB ancien) (3) 8 800-7 600 BC, middle PPNB (PPNB moyen) 7 600-6 900 BC, late PPNB (PPNB récent) (4) 7 500-7 000 BC and the PPNB (sometimes PPNC) transition phase (PPNB final) (5), where Halaf and dark polished wares begin to appear between 6 900-6 400 BC. They also put forward the idea of a PPNA to PPNB transition between 8 800-8 600 BC at sites such as Jerf el Ahmar and Tell Aswad.

**Question 0**

What are the names of the two scientists who divided the Neolithic period into ten periods?

**Question 1**

What characteristics did the researchers use to divide the ten periods?

**Question 2**

When was the original division of 10 changed to a division of 5?

**Question 3**

What are the names of the two scholars who divided the Neolithic period into five periods?

**Question 4**

What are the names of the two scholars who divided the Neolithic period into nine periods?

**Question 5**

What characteristics did the researchers use to divide the nine periods?

**Question 6**

When was the original division of 9 changed to a division of 5?

**Question 7**

What are the names of the two scholars who divided the Neolithic period into four periods?

**Question 8**

Who came up with the idea of an end-stage between PPNA and PPNB?

**Text number 7**

The domestication of sheep and goats arrived in Egypt from the Middle East possibly as early as 6 000 BC. Graeme Barker notes that "the first conclusive evidence of domesticated plants and animals in the Nile Valley dates back to the early fifth millennium BC. In northern Egypt and a thousand years later further south, in both cases as part of strategies that still relied heavily on fishing, hunting and wild plant gathering", and he suggests that these changes in subsistence were not the result of farmers migrating from the Middle East, but were an indigenous development in which crops were either indigenous or obtained through exchange. Other scholars argue that the primary stimulus for agriculture and livestock (as well as for pottery architecture and other features of Neolithic culture) in Egypt came from the Near East.

**Question 0**

When did sheep start to be domesticated in Egypt?

**Question 1**

How did the Egyptians gather food before livestock farming?

**Question 2**

Which region do some scholars consider to be the origin of Egyptian agriculture?

**Question 3**

When did sheep start to be domesticated in the Middle East?

**Question 4**

How did the Egyptians gather food before crops were grown?

**Question 5**

Which region do some researchers consider to be the source of agriculture in the Middle East?

**Question 6**

Who claims that these changes in livelihoods were caused by the migration of farmers?

**Question 7**

Where do other researchers say that the primary incentive came from?

**Text number 8**

In south-eastern Europe, agricultural societies first emerged in the 7th millennium BC. This is evidenced by one of Europe's earliest agricultural sites, found in Vashtëm in south-eastern Albania, dating back to 6500 BC. Anthropomorphic figurines have been found in the Balkans since 6000 BC and in Central Europe since around 5800 BC (La Hoguette). The earliest cultural complexes in the region include the Sesklo culture of Thessaly, which later expanded into the Balkans and gave rise to the Starčevo Circle (Cris), Linearbandkeramik and Vinča. As the culture spread and peoples migrated, Neolithic traditions spread west and north, reaching north-western Europe by around 4500 BC. The Vinča culture may have created the earliest writing system, the Vinča characters, although archaeologist Shan Winn believes that they represented pictographs and ideograms rather than a truly developed form of writing. The Cucuteni-Trypillian culture built huge settlements in Romania, Moldova and Ukraine between 5300 and 2300 BC. The megalithic temple complexes of Ġgantija on the Mediterranean island of Gozo (in the Maltese archipelago) and Mnajdra in Malta are notable for their gigantic Neolithic structures, the oldest of which date from around 3600 BC. The hypogeum of Ħal-Saflien in Paola, Malta, is an underground structure excavated around 2500 BC; originally a sanctuary, it became a necropolis, the only prehistoric underground temple in the world, and displays stone sculpture unique in the prehistory of the Maltese islands. After 2500 BC, the Maltese islands were deserted for several decades until the arrival of new Bronze Age migrants, a culture that cremated their dead and brought to Malta smaller megalithic structures called dolmens. In most cases, there are small chambers with a lid made of a large slab set on top of vertical stones. They are said to belong to a population that is certainly different from the one that built the earlier megalithic temples. The population is thought to have come from Sicily, as the Maltese dolmens resemble some of the small structures found on the largest island in the Mediterranean.

**Question 0**

When did agrarian societies begin to emerge in South-East Europe?

**Question 1**

Where was one of Europe's earliest agricultural sites found?

**Question 2**

What types of sculptures were found in the Balkans from 6000 BC onwards?

**Question 3**

What trend led to the spread of Neolithic traditions to north-western Europe by around 4500 BC?

**Question 4**

Who, if anyone, created the earliest writing system?

**Question 5**

When did agricultural societies start to arrive in Malta?

**Question 6**

Where was one of the earliest agricultural sites in Malta?

**Question 7**

What types of sculptures were found in the Balkans in 6500 BC?

**Question 8**

What trend led to the spread of Neolithic traditions to north-western Europe by around 6 500 BC?

**Question 9**

Who possibly created the earliest dolmen system?

**Text number 9**

In 2012, a new cultivation site was reported from Munam-ri, Goseong, Gangwon Province, South Korea, which may be the earliest known cultivation site in East Asia. "No remains of an agricultural field of the Neolithic period have previously been found in any East Asian country," the institute said, adding that the discovery reveals that the history of agriculture began at least on the Korean peninsula during this period. Farming was dated between 3600 and 3000 BC. Pottery, stone projectile points and possible houses were also found. "In 2002, researchers found prehistoric pottery and jade earrings, among other things, at the site." The research team will carry out an accelerator mass spectrometry (AMS) survey to get a more precise date for the site.

**Question 0**

When was the earliest known Asian farm discovered in South Korea?

**Question 1**

In which period was the Korean farm site dated?

**Question 2**

What objects were found on the Korean farm?

**Question 3**

What kind of techniques do researchers use to measure a more precise time period from a farm site?

**Question 4**

When was the earliest known Asian farmstead discovered in the AMS area?

**Question 5**

To which period is the AMS farm site dated?

**Question 6**

What objects were found on the AMS farm?

**Question 7**

What kind of technology do researchers use to measure a more accurate discovery from a farm site?

**Question 8**

When did scientists discover prehistoric plants?

**Text number 10**

In Mesoamerica, similar events (i.e. crop domestication and planting) took place around 4500 BC, but possibly as early as 11 000-10 000 BC. These cultures are not usually referred to as belonging to the Neolithic period; in the Americas, different terms are used, such as Formative stage instead of Middle and Late Neolithic, Archaic Era instead of Early Neolithic, and Paleo-Indian instead of Paleo-Indian. The Formative Era corresponds to the period of the Neolithic Revolution in Europe, Asia and Africa. In the south-western United States, it dates from 500 to 1200 BC. , which saw a dramatic increase in population and the development of large villages supported by dryland agriculture based on maize and later on beans, pumpkins and domesticated turkeys. This period also saw the introduction of the bow and arrow and ceramic pottery.

**Question 0**

What major trends emerged in Mesoamerica in 4500 BC?

**Question 1**

What term is used to describe the neolithic middle and late period of American education?

**Question 2**

What term is used to describe the early Neolithic era of American education?

**Question 3**

What hunting weapon was found in the south-western United States between 500 and 1200 BC?

**Question 4**

What major trends emerged in Mesoamerica during 11 000 BC?

**Question 5**

What term is used to describe the Middle and Late Neolithic period in Asian education?

**Question 6**

What term is used to describe the early Neolithic period in Asian education?

**Question 7**

What hunting weapon was found in the south-western United States between 1200 and 500 BC?

**Question 8**

When did turkey numbers increase dramatically?

**Text number 11**

For most of the Neolithic period in Eurasia, people lived in small tribes made up of several groups or family lines. In most Neolithic societies, there is little scientific evidence of developed social stratification; social stratification is more associated with the later Bronze Age. Although some Eurasian Late Neolithic societies formed complex stratified chiefdoms or even states, states did not develop in Eurasia until the generalisation of metallurgy, and most Neolithic societies were overall relatively simple and egalitarian. Outside Eurasia, however, states were formed during the local Neolithic period in three regions, namely the Andean Norte Chico civilisation of the pre-Pottery period, Formative Mesoamerica and ancient Hawaii. However, most Neolithic societies were much more hierarchical than the Palaeolithic cultures and hunter-gatherer cultures that preceded them.

**Question 0**

What social groups were formed during the Neolithic period in Eurasia?

**Question 1**

Which cultural trend did not appear on a large scale until the Bronze Age?

**Question 2**

What kind of cultures preceded the Neolithic societies?

**Question 3**

What social groups were formed in the Neolithic period in the North?

**Question 4**

Which cultural trend only emerged on a large scale in the Eurasian period?

**Question 5**

What kind of cultures preceded the Norte societies?

**Question 6**

Which cultures were more hierarchical than the Norte cultures?

**Question 7**

When did the Nordic countries develop?

**Text number 12**

The domestication of large animals (around 8000 BC) led to a dramatic increase in social inequality in most areas where it occurred; New Guinea is a notable exception. Livestock ownership enabled competition between households and led to hereditary wealth inequality. Neolithic pastoralists who owned large herds of cattle gradually acquired more livestock, increasing economic inequality. Evidence of social inequality remains controversial, however, as in settlements such as Catal Huyuk there is surprisingly little difference in the size of homes and burial sites, suggesting a more egalitarian society with no evidence of the concept of capital, although some homes appear to be slightly larger or more elaborately decorated than others.

**Question 0**

What caused the huge increase in social inequalities?

**Question 1**

Where did the competition for wealth between families begin?

**Question 2**

Who owned large herds of cattle that would produce more cattle?

**Question 3**

Which settlement had homes of similar size with little sign of capital?

**Question 4**

What caused the high growth in housing?

**Question 5**

What started the competition between Catal Huyuk for riches?

**Question 6**

Who had the large herds that would produce more wealth?

**Question 7**

Which settlement had homes of similar size with little sign of animals?

**Question 8**

What led to inequality in homes?

**Text number 13**

Families and households were still largely economically independent, and the household was probably the centre of life. However, excavations in central Europe have revealed that the Early Neolithic Linearbandkeramik ('Linear Pottery') built large circular ditch complexes between 4800 BC and 4600 BC. The construction of these structures (and their later counterparts such as streets, burial mounds and henges) required considerable time and effort, suggesting that some powerful individuals were able to organise and direct human labour - although non-hierarchical and voluntary work is still possible.

**Question 0**

What was the cultural aspect was the main centre of life?

**Question 1**

When were the huge circular ditches discovered?

**Question 2**

What did the ditches later become?

**Question 3**

What features of the ditch suggest that it was built by people under the command of a leader?

**Question 4**

From what period were the huge specimens found?

**Question 5**

What did people later join?

**Question 6**

What characteristics of individuals suggest that it was built by people under the command of a leader?

**Question 7**

Which excavations revealed that families built circular ditches?

**Question 8**

What do families propose?

**Text number 14**

The Linearbandkeramik sites along the Rhine are rich in evidence of fortified settlements, as at least some villages were fortified for a time by a palace and an outer ditch. The presence of settlements with palisades and the discovery of weapon-traumatised bones, such as the Talheim death pit, indicates that "...systematic inter-group violence" and warfare was probably much more common in the Neolithic period than in the preceding Palaeolithic period. This displaced the earlier view that the Linear Pottery culture would have lived a 'peaceful, unfortified lifestyle'.

**Question 0**

Where was evidence of fortified settlements found?

**Question 1**

What did some villages use to fortify their settlements?

**Question 2**

What tools were considered as evidence of violence among settlers?

**Question 3**

Which Talheim area refers to violent warfare in the Neolithic period?

**Question 4**

Where was the evidence of a fortified way of life found?

**Question 5**

How did some villages strengthen their way of life?

**Question 6**

What tools were considered as evidence of ditches between settlements?

**Question 7**

Which Talheim site refers to violent warfare in the Palaeolithic period?

**Question 8**

What did the Neolithic people have?

**Text number 15**

Labour management and inter-group conflicts are characteristic of corporate or "tribal" groups, headed by a charismatic individual, either a "big man" or a proto-head who acts as the leader of a family group. It is debatable whether there was a non-hierarchical organisational system, and there is no evidence to suggest explicitly that Neolithic societies operated under a ruling class or individual, as in the chiefdoms of the early Bronze Age in Europe. Theories have emerged to explain the apparent egalitarianism of Neolithic (and Palaeolithic) societies, including the Marxist concept of early communism.

**Question 0**

What was the production characteristic of tribal groups ruled by charismatic leaders?

**Question 1**

What theory describes the implicit egalitarianism of neolithic societies?

**Question 2**

What kind of divisions existed in tribal groups ruled by charismatic leaders?

**Question 3**

What production characteristic existed in the tribal groups ruled by the Neolithic leaders?

**Question 4**

Which theory describes the implicit egalitarianism of working societies?

**Question 5**

What were the divisions within the tribal groups dominated by the Neolithic groups?

**Question 6**

What is the theory that has explained the egalitarianism of working societies?

**Question 7**

Where is the evidence?

**Text number 16**

Early human shelters changed dramatically from the Palaeolithic to the Neolithic period. In the Palaeolithic period, people did not generally live in permanent structures. In the Neolithic period, mud-brick houses began to appear, which were covered with plaster. The growth of agriculture made it possible to build permanent houses. Doorways were made in the roof, and ladders were placed both inside and outside the houses. The roof was supported on the inside by beams. The coarse earth was covered with platforms, mats and skins on which the inhabitants slept. Vertical dwellings were common in the Alpine region and in the Pianura Padana (Terramare). Remains have been found, for example, in the Ljubljana marsh in Slovenia and in the Mondsee and Attersee lakes in Upper Austria.

**Question 0**

Which element of lifestyle changed significantly from the Palaeolithic to the Neolithic period?

**Question 1**

In what era did people live in temporary homes?

**Question 2**

What kind of homes were built in the Neolithic period?

**Question 3**

What social trend was the reason for the emergence of permanent housing?

**Question 4**

Where were the entrances located in early homes?

**Question 5**

In what era did people live on rooftops?

**Question 6**

What kind of homes were built in the Palaeolithic period?

**Question 7**

What was the social trend behind the worms?

**Question 8**

Where were the entrances to the early ladders located?

**Question 9**

What made the ladder possible?

**Text number 17**

A major and far-reaching change in people's livelihoods and lifestyles took place in the areas where cereal cultivation and agriculture first developed: the earlier dependence on nomadic subsistence techniques based mainly on hunter-gatherer subsistence or pastoral migration was initially supplemented and then increasingly replaced by a dependence on food produced on cultivated land. This development is also believed to have greatly contributed to the growth of settlement, as it can be assumed that the increased need to spend more time and labour on cultivating grain fields required more local settlements. This trend continued into the Bronze Age, with the eventual emergence of permanently populated farming towns and later cities and states whose larger populations were able to sustain the increased productivity of the cultivated land.

**Question 0**

Which trend led to a major change in the livelihoods of early cultures?

**Question 1**

What behaviours did humans use to survive before agriculture?

**Question 2**

In which era did the number of permanently inhabited rural towns increase?

**Question 3**

Which trend led to a major change in the livelihoods of the early cities?

**Question 4**

What behaviour did people rely on to survive before the Bronze Age?

**Question 5**

During which period did the number of permanent fields increase?

**Question 6**

What did crop rotation achieve?

**Question 7**

Which had a larger population supported by labour?

**Text number 18**

However, early farmers also suffered from famine, such as drought or starvation caused by pests. If farming had become the dominant way of life, deprivation may have been particularly acute and affected the farming population to an extent that earlier hunter-gatherer communities might not otherwise have experienced it routinely. However, farming communities generally proved successful and continued to grow and expand their farming areas.

**Question 0**

What were the causes of famine in early rural towns?

**Question 1**

Which societies were not affected by the famine?

**Question 2**

What kind of societies generally thrived even after a famine?

**Question 3**

What were the reasons for farming in early rural towns?

**Question 4**

Which societies were not affected by farming?

**Question 5**

What kind of societies generally prospered even after cultivation?

**Question 6**

What went on without a shortage?

**Question 7**

What might sensitivity to cultivation be?

**Text number 19**

Another major change that many of these new farming communities experienced was diet. The pre-agricultural diet varied according to the region, the seasons, the local plant and animal resources available, and the degree of pastoralism and hunting. The post-agricultural diet was limited to a limited package of successfully cultivated crops, plants and, to varying degrees, livestock and animal products. Supplementing the diet with hunting and gathering was, to varying degrees, impossible because population growth exceeded the carrying capacity of the land and the local population was very sedentary. In some cultures, there would have been a significant shift towards starch and vegetable protein supplementation. The relative nutritional benefits and drawbacks of these dietary changes and their overall impact on the development of early society are still being debated.

**Question 0**

Which food-related trend was prominent in the new agrarian societies?

**Question 1**

What forms of availability dictated the pre-agricultural diet?

**Question 2**

What was part of the post-agricultural diet?

**Question 3**

What forced you to supplement your food intake with hunting and gathering?

**Question 4**

Which food-related trend was prominent in the restricted societies?

**Question 5**

What kind of availability dictated local diets?

**Question 6**

What was in the local diet?

**Question 7**

What forced you to supplement your food supply with food?

**Question 8**

How did local diets vary?

**Text number 20**

Neolithic people were skilled farmers who made a variety of tools needed for tending crops, harvesting and processing (such as sickle blades and grinding stones) and food production (such as pottery and bone tools). They were also skilled craftsmen, making a wide range of other stone tools and decorative objects such as projectile points, beads and miniature statues. But what made it possible to clear forests on a large scale was, above all, the polished stone axe. Combined with the stick, which was used to shape wood into shelters, structures and canoes, for example, it allowed them to make the most of the newly reclaimed farmland.

**Question 0**

In what occupation were Neolithic people considered to be skilled?

**Question 1**

For what purposes were agricultural tools produced?

**Question 2**

What tools did early farmers use to farm?

**Question 3**

What tools did early farmers use to produce food?

**Question 4**

What tool did early farmers use to turn forest into farmland?

**Question 5**

In which type of occupation were manufacturers considered to be skilled?

**Question 6**

For what purposes were the statues made?

**Question 7**

What tools did early farmers use in their shelters?

**Question 8**

What tool did the early manufacturers use to turn forest into farmland?

**Text number 21**

The Neolithic peoples of the Levant, Anatolia, Syria, northern Mesopotamia and Central Asia were also skilled builders, using adobe to construct houses and villages. In Çatal Höyük, houses were plastered and painted with elaborate images of people and animals. In Europe, tall houses were built of logs. Ornate tombs were built for the dead. These tombs are particularly numerous in Ireland, where several thousand still remain. The Neolithic people of the British Isles built long mounds and chamber tombs for their dead, as well as camps, corsairs, flint mines and cursus monuments. It was also important to find ways to preserve food for the months ahead, such as making relatively airtight containers and using substances like salt as preservatives.

**Question 0**

What did Neolithic people build with adobe?

**Question 1**

What scenes were depicted in the paintings of the homes?

**Question 2**

What were European homes built from?

**Question 3**

What kind of places were built for the dead?

**Question 4**

Where are the thousands of early graves?

**Question 5**

What did Europeans build with clay bricks?

**Question 6**

What scenes were filmed by the people in the homes?

**Question 7**

What were Syrian homes built from?

**Question 8**

What kind of places were built for animals?

**Question 9**

Where are the thousands of early humans?

**Text number 22**

Most of the clothes are obviously made of animal skins, as evidenced by the numerous finds of bone and horn pins, which are ideal for attaching leather. Woolen cloth and linen may have been available in the later Neolithic period, as indicated by the discovery of perforated stones which (depending on their size) may have served as spinners or loom weights. The clothes worn in the Neolithic period may have been similar to those worn by the Ötzi ice man, even though he was not Neolithic (he belonged to the later Copper Age).

**Question 0**

What did early humans use to make clothes?

**Question 1**

What evidence suggests that people used animal products for clothing?

**Question 2**

What were the perforated stones used for?

**Question 3**

Which famous Copper Age figure wore clothes similar to those of the Neolithic period?

**Question 4**

What did early humans use to make bones?

**Question 5**

What evidence suggests that people used copper products for clothing?

**Question 6**

What were the perforated horns used for?

**Question 7**

Which famous Copper Age character wore clothes similar to those of the Copper Age?

**Question 8**

What might have become available in the copper age?

**Document number 332**

**Text number 0**

Friedrich Hayek CH (German: [ˈfʁiːdʁɪç ˈaʊ̯ɡʊst ˈhaɪ̯ɛk]; 8 May 1899 - 23 March 1992), born in Austria-Hungary as Friedrich August von Hayek and often F. A. Hayek, was an Austrian-British economist and philosopher best known for his defence of classical liberalism. Hayek shared the 1974 Nobel Memorial Prize in Economics with Gunnar Myrdal for his "pioneering work in the theory of money and economic fluctuations and ... his profound analysis of the interdependence of economic, social and institutional phenomena".

**Question 0**

In which country was Friedrich Hayek born?

**Question 1**

Friedrich Hayek's name was commonly shortened to what?

**Question 2**

What prize did Hayek receive in 1974?

**Question 3**

With whom did Hayek share his 1974 prize?

**Question 4**

What else was Hayek known for besides being an economist?

**Text number 1**

In 1984, Queen Elizabeth II appointed him an honorary fellow for "research in economics" at the urging of Prime Minister Margaret Thatcher. He was the first recipient of the Hanns Martin Schleyer Prize in 1984. He was also awarded the Presidential Medal of Freedom by President George H.W. Bush in 1991. In 2011, his article "The Use of Knowledge in Society" was selected as one of the top 20 articles published in the American Economic Review in its first 100 years.

**Question 0**

Which group did Hayek join in 1984?

**Question 1**

Why was Hayek admitted?

**Question 2**

Which prize was Hayek awarded first?

**Question 3**

Who awarded Hayek the Medal of Freedom?

**Question 4**

Which of Hayek's articles was recognised in 2011?

**Text number 2**

Friedrich August von Hayek was born in Vienna to August von Hayek and Felicitas Hayek (née von Juraschek). Friedrich's father, from whom he took his middle name, was also born in Vienna in 1871. He was a doctor working for the municipal health department and had a passion for botany, on which he wrote several monographs. August von Hayek was also a part-time lecturer in botany at the University of Vienna. Friedrich's mother was born in 1875 into a wealthy, conservative, landowning family. As her mother died several years before Friedrich was born, Felicitas received a substantial inheritance, accounting for up to half of her and August's income in the early years of their marriage. Hayek was the eldest of three brothers, Heinrich (1900-69) and Erich (1904-86), who were one and a half and five years younger than him.

**Question 0**

Who was Hayek's father?

**Question 1**

What was August von Hayek's profession?

**Question 2**

What was August von Hayek particularly passionate about?

**Question 3**

Who did Felicitas inherit her fortune from?

**Question 4**

How many children did August von Hayek and his wife have?

**Text number 3**

His father's career as a university professor influenced Friedrich's later ambitions. Both his grandfathers, who lived long enough for Friedrich to know them, were scholars. Franz von Juraschek was a leading economist in Austria-Hungary and a close friend of Eugen Böhm von Bawerk, one of the founders of the Austrian school of economics. Von Juraschek was a statistician and later worked for the Austrian government. Friedrich's paternal grandfather Gustav Edler von Hayek taught science at the Imperial Realobergymnasium (high school) in Vienna. He wrote systematic works on biology, some of which are relatively well known.

**Question 0**

Whose profession inspired Hayek when he was older?

**Question 1**

Which Hayek grandfather was Eugen Bohm friends with?

**Question 2**

What was the occupation of Hayek's grandfather?

**Question 3**

Who was August von Hayek's father?

**Question 4**

What did August von Hayek's father write?

**Text number 4**

On his mother's side, Hayek was a second cousin of the philosopher Ludwig Wittgenstein. His mother often played with Wittgenstein's sisters and had known Ludwig well. Thanks to their family relationship, Hayek was among the first to read Wittgenstein's Tractatus Logico-Philosophicus when it was published in the original German edition in 1921. Although Hayek met Wittgenstein only a few times, Hayek said that Wittgenstein's philosophy and methods of analysis had a profound influence on his own life and thinking. In his later years, Hayek recalled discussing philosophy with Wittgenstein when both were officers during the First World War. After Wittgenstein's death, Hayek had intended to write a biography of Wittgenstein and worked on collecting the genealogical material; he later assisted with Wittgenstein's biographies.

**Question 0**

Who were the first readers of Ludwig Wittgenstein's book?

**Question 1**

How often did Hayek and Wittgenstein meet?

**Question 2**

Whose philosophy strongly influenced Hayek?

**Question 3**

What did Wittgenstein and Hayek do during the First World War?

**Question 4**

What was the title of a book published by Wittgenstein in 1921?

**Text number 5**

Hayek had intellectual and academic inclinations from a very young age. He read fluently and often before school. At his father's suggestion, Hayek read Hugo de Vries' works on genetics and evolution and Ludwig Feuerbach's philosophical works as a teenager. At school, Hayek was very impressed by a teacher's lectures on Aristotle's ethics. In his unpublished autobiographical notes, Hayek recalled a disagreement between himself and his brothers, who were only a few years younger than him, but he believed they were somehow of a different generation. He preferred to socialise with adults.

**Question 0**

What did Hayek conclude about his brothers?

**Question 1**

Who did Hayek talk to more often?

**Question 2**

What was Hayek's reading level like before he went to school?

**Question 3**

Who told Hayek to start reading the works of Hugo de Vries?

**Question 4**

Which philosopher did Hayek learn from in a school lecture?

**Text number 6**

At the University of Vienna, Hayek received his doctorate in law in 1921 and in political science in 1923, and also studied philosophy, psychology and economics. For a short time, after the University of Vienna closed, Hayek studied at Constantin von Monakow's Institute of Brain Anatomy, where Hayek spent much of his time staining brain cells. Hayek's time in Monakow's laboratory and his deep interest in the work of Ernst Mach inspired Hayek's first intellectual project, eventually published as The Sensory Order (1952). It placed integrative learning at the physical and neurological levels and rejected the 'sense knowledge' associationism of the empiricists and logical positivists. Hayek presented his work with Herbert Furth at a private seminar he founded called the Geistkreis.

**Question 0**

Where did Hayek get his doctorate?

**Question 1**

Where did Hayek get his information about the brain?

**Question 2**

What was the title of Hayek's first work?

**Question 3**

Where did he first show his work?

**Question 4**

With whom did Hayek set up Geistkreis?

**Text number 7**

During Hayek's studies at the University of Vienna, Carl Menger's work on the strategy of explanation in the social sciences and Friedrich von Wieser's dominant presence in the classroom left a lasting impression on Hayek. After graduation, Ludwig von Mises, on Wieser's recommendation, hired Hayek as an expert for the Austrian government, working on the legal and economic details of the Treaty of Saint Germain. From 1923 to 1924, Hayek worked as a research assistant to Professor Jeremiah Jenks of New York University, compiling macroeconomic data on the US economy and the activities of the Federal Reserve.

**Question 0**

Which work did Hayek start in 1923?

**Question 1**

Where did Carl Menger and Friedrich von Wieser influence Hayek?

**Question 2**

Who did Hayek work for when he was employed by Ludwig von Mises?

**Question 3**

What did Hayek collect during his time as a research assistant?

**Question 4**

What was the name of the professor for whom Hayek worked as a research assistant?

**Text number 8**

Hayek was initially sympathetic to Wieser's democratic socialism, but Hayek's economic thinking moved away from socialism towards Carl Menger's classical liberalism after reading von Mises' Socialism. Sometime after reading Socialism, Hayek began to attend von Mises' private seminars and joined several of his university friends, such as Fritz Machlup, Alfred Schutz, Felix Kaufmann and Gottfried Haberler, who also attended Hayek's own, more general private seminar. During this period Hayek also became acquainted with the well-known political philosopher Eric Voegelin, with whom he maintained a long-term relationship.

**Question 0**

What ideology did Hayek originally advocate?

**Question 1**

What made Hayek turn away from Wiser's ideology?

**Question 2**

Who did Hayek befriend when he attended von Mises seminars?

**Question 3**

What view did Hayek move towards in his book Socialism?

**Question 4**

Who is the father of the ideology supported by Hayek?

**Text number 9**

Hayek founded the Austrian Institute for Business Cycle Research in the late 1920s with the help of Mises and served as its director before joining the faculty of the London School of Economics (LSE) in 1931 at the urging of Lionel Robbins. On his arrival in London, Hayek was quickly recognised as one of the world's leading economic theorists, and his development of the economics of time processes and the price coordination function inspired the pioneering work of John Hicks, Abba Lerner and many others in developing modern microeconomics.

**Question 0**

What was Hayek's position at the Austrian Institute?

**Question 1**

Who asked for Hayek to be hired by LSE?

**Question 2**

What kind of recognition had Hayek received when he came to London?

**Question 3**

What are the themes that influenced and inspired Hayek's works?

**Question 4**

What year did Hayek come to London?

**Text number 10**

Hayek was concerned about the general view in British academic circles that fascism was a capitalist reaction to socialism, and The Road to Serfdom was inspired by these concerns. It was written between 1940 and 1943. The title of the book was inspired by the writings of the French classical liberal thinker Alexis de Tocqueville on 'the road to serfdom'. It was first published in Britain by Routledge in March 1944 and was quite popular, prompting Hayek to call it 'that hard-to-get book', partly due to wartime rationing of paper editions. When the University of Chicago published it in the US in September that year, it achieved greater popularity than in Britain. Arranged by editor Max Eastman, the American Reader's Digest also published an abridged version in April 1945, which allowed The Road to Serfdom to reach a much wider audience than academics. The book is widely popular with individualists and classical liberalists.

**Question 0**

What did Hayek write about fascism and socialism?

**Question 1**

Whose works inspired the title of The Road to Serfdom?

**Question 2**

When was The Road to Serfdom published?

**Question 3**

Where was Road to Serfdom more popular than in the UK?

**Question 4**

Who is responsible for shortening The Road to Serfdom for Reader's Digest in 1945?

**Text number 11**

In 1950, Hayek left the London School of Economics for the University of Chicago, where he became a professor on the Committee for Social Thought. Hayek's salary was not funded by the university but by an external foundation. University of Chicago President Robert Hutchins was in the middle of a war with the Chicago faculty over institutional autonomy and control, and Hayek was caught in the middle of this struggle. Hutchins had been trying to force all the institutions to adopt Mortimer Adler's neo-Thomist Great Books programme, and the economists at the University of Chicago were fed up with Hutchins' meddling. As a result, the economics department rejected Hutchins' pressure to hire Hayek, and Hayek became part of the new Committee on Social Thought.

**Question 0**

Which university did he end up working at after leaving London?

**Question 1**

Who paid Hayek's salary?

**Question 2**

What was the cause of the feud between Robert Hutchins and the faculty?

**Question 3**

Why did the Department of Economics reject Hayek's application?

**Question 4**

Where did Hayek serve after the initial rejection?

**Text number 12**

Hayek had been in contact with many at the University of Chicago in the 1940s, and Hayek's The Road to Serfdom was a key influence on how Milton Friedman and others understood how society worked. Hayek organized several influential faculty seminars at the University of Chicago, and several academics worked on research projects sympathetic to Hayek, such as Aaron Director, who was active in the Chicago School in helping to fund and establish what became the "Law and Society" program at the University of Chicago Law School. Hayek, Frank Knight, Friedman and George Stigler worked together to found the Mont Pèlerin Society, an international forum of libertarian economists. Hayek and Friedman worked together to support the Intercollegiate Society of Individualists, later renamed the Intercollegiate Studies Institute, an American student organisation dedicated to libertarian ideas.

**Question 0**

Which of Hayek's works had a profound effect on the researchers at the University of Chicago?

**Question 1**

Who played a decisive role in setting up the Law and Society programme?

**Question 2**

Which group did Hayek set up with three other people?

**Question 3**

What was the group supported by Friedman and Hayek that was later renamed?

**Text number 13**

After editing a book on the letters of John Stuart Mill, he planned to publish two books on the liberal order, The Constitution of Liberty and The Creative Powers of a Free Civilization (the title of the second chapter of The Constitution of Liberty). He completed The Constitution of Liberty in May 1959 and it was published in February 1960. Hayek was concerned "with the human condition in which the coercion of others by others is as limited as is possible in society". Hayek was disappointed that the book was not as enthusiastically received by the public as The Road to Serfdom had been sixteen years earlier.

**Question 0**

What was the subject of Hayek's next two books?

**Question 1**

Which of Hayek's books was not as well received as The Road to Slavery?

**Question 2**

How long had it been since the publication of his 1960 book The Road to Slavery?

**Question 3**

What was the title of the second chapter of his book published in 1960?

**Question 4**

How did Hayek feel about the success of his 1960 book?

**Text number 14**

From 1962 until his retirement in 1968, he was a professor at the University of Freiburg in West Germany, where he began writing his next book, Law, Legislation and Liberty. Hayek considered his years in Freiburg to have been "very fruitful". After his retirement, Hayek spent a year as a visiting professor of philosophy at the University of California, Los Angeles, where he continued to work on Law, Legislation and Liberty and taught a graduate seminar of the same name as well as a seminar on the philosophy of social science. The first drafts of the book were completed by 1970, but Hayek decided to rework his drafts and eventually brought the book out in three volumes in 1973, 1976 and 1979.

**Question 0**

Which country did Hayek move to in 1962?

**Question 1**

What is the title of the book Hayek started when he arrived in West Germany?

**Question 2**

Where did Hayek spend a whole year after his retirement?

**Question 3**

When was the last volume of "Law, Legislation and Liberty" published?

**Question 4**

What was the subject of Hayek's seminars in Los Angeles that were not related to his new book?

**Text number 15**

In February 1975, Margaret Thatcher was elected leader of the British Conservative Party. Shortly afterwards, the Institute of Economic Affairs organised a meeting between Hayek and Thatcher in London. During Thatcher's only visit to the Conservative Research Department in the summer of 1975, a speaker had prepared a presentation on why the 'middle way' was the pragmatic path that the Conservative Party should take, avoiding the extremes of left and right. Before she had finished, Thatcher "reached into her briefcase and took out a book. It was Hayek's Constitution of Liberty. She interrupted our pragmatist and held the book up for us all to see. 'This,' she said sternly, 'is what we believe in', and slammed Hayek on the table."

**Question 0**

Which political party was Margaret Thatcher the leader of in 1975?

**Question 1**

Who did Thatcher meet soon after she was elected leader of her party?

**Question 2**

What path did one speaker suggest Margaret Thatcher's party should take?

**Question 3**

Which of Hayek's works did Thatcher produce for the Conservative Research Department?

**Text number 16**

In 1977, Hayek was critical of the Lib-Lab agreement, in which the British Liberal Party agreed to keep the British Labour Party in power. Writing in The Times, Hayek said: "Could anyone who has devoted much of his life to the study of the history and principles of liberalism point out that a party which keeps a socialist government in power has forfeited all right to the name 'liberal'. Certainly no liberal can vote 'liberal' in the future." Liberal politicians Gladwyn Jebb and Andrew Phillips criticised Hayek, both claiming that the deal was designed to prevent socialist legislation being passed.

**Question 0**

What was the name of the agreement criticised by Hayek in 1977?

**Question 1**

What did some liberal politicians claim the agreement was supposed to do?

**Question 2**

The agreement criticised by Hayek was between the British Labour government and which political party?

**Question 3**

What did Hayek believe he was losing by the continued empowerment of socialist government?

**Text number 17**

In 1978, Hayek clashed with Liberal Party leader David Steel, who argued that freedom was only possible through "social justice and a fair distribution of wealth and power, which in turn require some degree of active state intervention", and that the Conservative Party was more concerned with the link between freedom and private enterprise than freedom and democracy. Hayek argued that limited democracy might be better than other forms of limited government in protecting liberty, but that unrestricted democracy is worse than other forms of unrestricted government because 'its government loses its power even to do what it thinks right if some group on which its majority depends thinks otherwise'.

**Question 0**

Which party was criticised for being less concerned about freedom and democracy?

**Question 1**

Which political group did David Steel belong to?

**Question 2**

Who disagreed with the statements made by David Steel in 1978?

**Question 3**

Which form of government did Hayek consider more favourable than others?

**Question 4**

Hayek believed that which type of democracy was the worst of its alternatives?

**Text number 18**

In 1984, on the recommendation of British Prime Minister Margaret Thatcher, Queen Elizabeth II of the United Kingdom appointed him a Member of the Order of Merit of the United Kingdom for "services to economic research". Hayek had hoped to be made a freeman, and after receiving the CH he wrote to his friends asking to be henceforth called Friedrich (Frederick) in English. After a 20-minute audience with the Queen, Hayek was, according to his daughter-in-law Esca Hayek, "absolutely smitten" with the Queen. Hayek said a year later that he was "astonished by her. The ease and skill, as if she had known me all my life". The Queen's audience was followed by a dinner with family and friends at the Institute of Economic Affairs. When Hayek was taken to the Reform Club later that evening, he commented: "I have just had the happiest day of my life."

**Question 0**

Which group did the Queen of England admit Hayek to?

**Question 1**

Who will propose Hayek for the honour of joining the Order of the Knighthood?

**Question 2**

What was Margaret Thatcher's position in the UK government in 1984?

**Question 3**

How did Hayek want to be referred to after his 1984 award?

**Question 4**

At the end of the same day, Hayek met the Queen of England, and what did he say?

**Text number 19**

In 1991, US President George H. W. Bush awarded Hayek the Presidential Medal of Freedom, one of the two highest civilian awards in the United States, for "a lifetime of looking beyond the horizon". Hayek died on 23 March 1992 in Freiburg, Germany, and was buried on 4 April in the Neustift am Wald cemetery on the northern outskirts of Vienna in accordance with the Catholic rite. In 2011, his article The Use of Knowledge in Society was selected by the American Economic Review as one of the top 20 articles published in its first 100 years.

**Question 0**

What was the reason for Hayek's 1991 Presidential Award?

**Question 1**

Which President presented the award to Hayek?

**Question 2**

Where was Hayek when he died?

**Question 3**

Where was Hayek buried in relation to his home town of Vienna?

**Question 4**

Where was The Use of Knowledge in Society published?

**Text number 20**

Hayek's main economic studies concerned capital, money and business cycles. Mises had already applied the concept of marginal utility to the value of money in his Theory of Money and Credit (1912), in which he also proposed an explanation of 'industrial fluctuations' based on the ideas of the old British school of monetary economics and the Swedish economist Knut Wicksell. Hayek used this body of work as a starting point for his own interpretation of business cycles and developed what later became known as 'Austrian business cycle theory'. Hayek presented the Austrian approach in more detail in his 1929 book, the English translation of which appeared in 1933 under the title Monetary Theory and the Trade Cycle. In it he advocated a monetary approach to the emergence of business cycles. In Prices and Production (1931), Hayek argued that the business cycle was the result of an inflationary expansion of central bank credit and its transmission over time, leading to a misallocation of capital caused by artificially low interest rates. Hayek argued that "the past instability of the market economy is the result of the exclusion of money, the main regulator of the market mechanism, from the fact that the market process itself is not regulated by it".

**Question 0**

What is the title of a book by Mises published in 1912?

**Question 1**

Hayek focused most of his economic work on the business cycle, money and what else?

**Question 2**

Which work did Hayek produce as a result of studying Mises' book?

**Question 3**

What is the English title of Hayek's book published in 1929?

**Question 4**

According to Hayek, what was the reason for the banks' misallocation of funds?

**Text number 21**

In 1929, Lionel Robbins took over the reins of the London School of Economics (LSE). Wanting to promote alternatives to the narrow approach of the school of economics that he saw as dominating the English-speaking academic world at the time (centred on Cambridge University and largely based on the work of Alfred Marshall), Robbins invited Hayek to join the LSE faculty, and he joined in 1931. According to Nicholas Kaldor, Hayek's theory of the time structure of capital and business cycles 'initially fascinated the academic world' and seemed to offer a less 'frivolous and superficial' view of macroeconomics than the Cambridge School theory.

**Question 0**

Which school did Lionel Robbins become headmaster of in 1929?

**Question 1**

In economics, Lionel Robbins believes that English-speaking academics had what?

**Question 2**

Which man's actions were largely responsible for the 'narrow approach'?

**Question 3**

Who was responsible for hiring Hayek at LSE?

**Question 4**

What did Nicholas Kaldor say Hayek brought to macroeconomics?

**Text number 22**

In 1931 Hayek also criticised Keynes' Treatise on Money (1930) in his book "Reflections on the pure theory of Mr. J. M. Keynes" and published his lectures at the LSE as a book entitled Prices and Production. Unemployment and idle resources are, according to Keynes, the result of a lack of efficient demand; according to Hayek, they are the result of a previous, unsustainable period of easy money and artificially low interest rates. Keynes asked his friend Piero Sraffa to respond. Sraffa elaborated on the impact of inflation-induced 'forced saving' on the capital sector and the definition of a 'natural' rate of interest in a growing economy. Hayek's work on the business cycle received negative responses from John Hicks, Frank Knight and Gunnar Myrdal, among others. Kaldor later wrote that Hayek's Prices and Production had produced "a considerable number of critics" and that the total number of pages devoted to the debate in British and American journals was "rarely comparable to the economic controversies of the past".

**Question 0**

Hayek's critical analysis of Keyne's work was published under what name?

**Question 1**

What did Hayek think caused unemployment apart from easy money?

**Question 2**

To whom did Keynes turn for help in arguing his case to Hayek?

**Question 3**

According to Nicholas Kaldor, what had Hayek's book created?

**Text number 23**

Hayek continued to explore the theory of money and capital and revised the theories of the relationship between credit cycles and capital structure in Profits, Interest and Investment (1939) and The Pure Theory of Capital (1941), but his reputation as an economic theorist had by then declined so much that these works were largely ignored, except for a severe critique by Nicholas Kaldor. Lionel Robbins himself, who had adopted Austrian business cycle theory in The Great Depression (1934), later regretted writing the book and accepted many of the Keynesian counter-arguments.

**Question 0**

What was the result of Hayek's Prices and Production?

**Question 1**

What is the title of Hayek's first book in which he revised his views on Prices and Production?

**Question 2**

Who was particularly critical of Hayek's work after Prices and Production?

**Question 3**

Lionel Robbins' The Great Depression was the result of his support for what?

**Question 4**

Who was ultimately influenced by Keynes' arguments against the Austrian business cycle theory?

**Text number 24**

Hayek never produced the book on the "dynamics of capital" that he had promised in Pure Theory of Capital. After 1941, he continued to publish works on the economics of knowledge, political philosophy, legal theory and psychology, but rarely on macroeconomics. At the University of Chicago, Hayek was not a member of the economics department and did not contribute to the revival of neoclassical theory there (see Chicago School of Economics). When he shared the 1974 Nobel Memorial Prize in Economics with Gunnar Myrdal, Myrdal complained that he was paired with an 'ideologue'. Milton Friedman declared himself "a great admirer of Hayek, but not of his economics. I think Prices and Production is a very flawed book. I think his [Pure Theory of Capital] is unreadable. On the other hand, The Road to Serfdom is one of the great books of our time."

**Question 0**

On what subject did Hayek never write a book, as he said he would?

**Question 1**

What subject did Hayek avoid after the theory of Pure Capital?

**Question 2**

Why did Gunnar Myrdal invite Hayek?

**Question 3**

Which of Hayeks' books did Milton Friedman praise most?

**Question 4**

With whom did Hayek share the Nobel Prize?

**Text number 25**

Building on the earlier work of Ludwig von Mises and others, Hayek also argued that while in centrally planned economies it is up to an individual or a select group to determine the allocation of resources, these planners never have enough information to carry out this allocation reliably. This argument, first put forward by Max Weber, suggests that the efficient exchange and use of resources can only be maintained by a price mechanism in a free market (see the Economic Calculation Problem).

**Question 0**

What did Hayek argue that those who have to share resources lack most?

**Question 1**

Whose work had the greatest influence on Hayek's argument about resource allocation?

**Question 2**

What is one way in which Hayek argued that resource sharing could work?

**Question 3**

Who other than Max Weber had a major influence on Hayek's statements on resource allocation?

**Text number 26**

Some socialists, such as H. D. Dickinson and Oskar Lange, responded by appealing to the theory of general equilibrium, which they claimed refuted Mises' thesis. They argued that the difference between a planned and a free market system was in who was responsible for solving the equations. They argued that if some of the prices chosen by socialist leaders were wrong, there would be oversupply or shortages, which would mean that prices would have to be adjusted upwards or downwards just as in a free market. Such trial and error would allow the socialist economy to emulate the efficiency of the free market economy, while avoiding its many problems.

**Question 0**

What did some socialists put forward to refute Hayek's resource allocation argument?

**Question 1**

What did socialists believe the equilibrium theory disproved?

**Question 2**

According to those who argue against Hayek, the difference between a planned market and a free market is what?

**Question 3**

What kind of economic system did the socialists want to avoid?

**Text number 27**

Hayek argued in The Use of Knowledge in Society (1945) that the price mechanism distributes and synchronises local and personal knowledge, allowing members of society to achieve diverse and complex goals through the principle of spontaneous self-organisation. He compared the use of the price mechanism to central planning and argued that the price mechanism allows for faster adaptation to changes in specific conditions of time and place. He thus laid the groundwork for Oliver Williamson's later opposition between markets and hierarchies as an alternative coordination mechanism for economic transactions. He used the term catallaxy to describe 'a self-organising system of voluntary cooperation'. The Nobel Committee specifically referred to Hayek's research on this argument in the press release awarding Hayek the Nobel Prize.

**Question 0**

Where in Hayek's book was there opposition to the socialist price mechanism?

**Question 1**

In which type of economy did Hayek think the price mechanism was not as efficient?

**Question 2**

The arguments put forward in The use of knowledge in society provided a starting point for Who?

**Question 3**

The arguments put forward in Hayek's 1945 book were a major reason why he was awarded the What Prize?

**Text number 28**

Hayek was one of the leading academic critics of collectivism in the 20th century. Hayek argued that all forms of collectivism (even those theoretically based on voluntary cooperation) can only be sustained by some form of central authority. For Hayek, the central task of the state should be to maintain the rule of law with as little arbitrary interference as possible. In his popular book The Road to Serfdom (1944) and in later academic works, Hayek argued that socialism required centralised economic planning and that such planning in turn led to totalitarianism.

**Question 0**

What was the name of the ideology Hayek criticised?

**Question 1**

How did Hayek believe that collectivism could be sustained?

**Question 2**

What, according to Hayek, is necessary for a socialist economy?

**Question 3**

Hayek believed that the demands of a socialist economy would lead to what?

**Question 4**

What did Hayek see as the core function of the state?

**Text number 29**

Hayek also wrote that the state can play a role in the economy and in particular in creating a "safety net". He wrote: "There is no reason why a society which has reached the level of general prosperity which our society has attained should not guarantee to all general freedom without compromising the first kind of security, that is, some minimum of food, shelter, and clothing sufficient to maintain health. Nor is there any reason why the state should not help to provide a comprehensive social insurance system for the common dangers of life for which few can adequately provide. "

**Question 0**

Hayek believed that the state could support the economy by doing what?

**Question 1**

Who does Hayek think should be guaranteed economic security?

**Question 2**

According to Hayek, clothing, food and shelter should be provided in what quantities?

**Question 3**

What kind of system did Hayek propose to the government?

**Text number 30**

Hayek's work on the microeconomic selection theory of investment, non-permanent goods, potential permanent resources and economically adjusted permanent resources is a key dividing line between his work on macroeconomics and that of almost all other economists. Hayek's work, particularly on the macroeconomic topics of central planning, business cycle theory, knowledge sharing and entrepreneurial adjustment, differs greatly from the macroeconomic 'Marshallese' economists of the John Maynard Keynes tradition and the microeconomic 'Walrasian' economists of the Abba Lerner tradition.

**Question 0**

In what area of economics do Hayek's views differ from those of macroeconomics?

**Question 1**

What term is used to describe the economists who followed the Keynesian school?

**Question 2**

Whose works have inspired the term "Walrasian" in economics?

**Text number 31**

During the Second World War, Hayek initiated the "abuse of reason" project. His aim was to show how many of the doctrines and beliefs popular at the time were rooted in some fundamental misunderstandings about the social sciences. In his philosophy of science, which has much in common with the philosophy of science of his good friend Karl Popper, Hayek was highly critical of what he called Scientism: a false conception of the scientific method, wrongly imposed on the social sciences, but contrary to the practice of genuine science. In general, scientism combines the philosophers' age-old demand for observational reasoning with the associationists' false view that all scientific explanations are simple linear relationships between two variables.

**Question 0**

When did Hayek start working on Abuse of Reason?

**Question 1**

What was Hayek specifically trying to reveal in Abuse of Reason?

**Question 2**

Whose philosophical views on science were similar to Hayek's?

**Question 3**

What did Hayek mean by the spread of ignorance and misunderstanding in the social sciences?

**Question 4**

Scientific scientism typically believes that the explanations of science are what?

**Text number 32**

In The Sensory Order: An Inquiry into the Foundations of Theoretical Psychology (1952), Hayek independently developed the "Hebbian learning" model of learning and memory - an idea he first conceived in 1920, before studying economics. The extension of Hayek's 'Hebbian synapse' structure into a global theory of the brain has received sustained attention in neuroscience, cognitive science, computer science, behavioural science and evolutionary psychology, and has attracted the attention of researchers such as Gerald Edelman and Joaquin Fuster.

**Question 0**

What year was the book published in which Hayek developed Hebb's learning?

**Question 1**

Before he started studying economics, what concept did Hayek invent that was later featured in his book in 1952?

**Question 2**

What did Hayek suggest in his 1952 book that influenced many disciplines?

**Question 3**

What is the name of the book in which Hayek introduced Hebb's synapse?

**Text number 33**

In the second half of his career, Hayek produced several works of social and political philosophy based on his views on the limits of human knowledge and the idea of the spontaneous order of social institutions. He advocates a society organised around the market order, in which the state apparatus is used almost (though not entirely) exclusively to enforce the legal order (consisting of abstract rules rather than specific commands) necessary for the market of free individuals to function. Underlying these ideas was a moral philosophy based on epistemological concerns about the inherent limits of human knowledge. According to Hayek, his ideal individualistic, free-market society would be self-regulating to the extent that it would be 'a society whose functioning does not depend on finding good men to run it'.

**Question 0**

When did Hayek begin to express his ideas about the limits of human knowledge?

**Question 1**

What did Hayek want society to do?

**Question 2**

What is the responsibility of the state in Hayek's market organisation?

**Question 3**

What would be the reason for the success of Hayek's ideal free market?

**Question 4**

What would Hayek's free market not require to work properly?

**Text number 34**

Hayek disapproved of the concept of "social justice". He likened the market to a game in which "it makes no sense to call the outcome fair or unfair" and argued that "social justice is an empty expression with no definable content"; similarly, "the results of individual effort are inevitably unpredictable and the question of whether the distribution of income is fair is irrelevant". In general, he considered the redistribution of income or capital by the state to be an unacceptable interference with individual freedom: 'Once the principle of distribution has been introduced, it will only be implemented once the whole of society has been organised accordingly. This would create a society which would be in all essential respects the opposite of a free society. "

**Question 0**

Which concept did Hayek not like?

**Question 1**

How did Hayek deal with income distribution?

**Question 2**

What is Hayek's reason for saying that income inequality is neither fair nor unfair?

**Question 3**

According to Hayek, a redistributive society is what?

**Text number 35**

Hayek's notion of markets as spontaneous orders has recently been applied to ecosystems in order to defend a broadly non-interventionist policy. Like markets, ecosystems contain complex networks of information, involve a continuous dynamic process, contain orders within orders, and the whole system operates without the guidance of a conscious mind. In this analysis, species replaces price as a visible part of a system composed of a complex set of largely unknown elements. Human ignorance of the myriad interactions between organisms in an ecosystem limits our ability to manipulate nature. Since humans depend on the ecosystem for their livelihoods, we have a prima facie obligation not to disturb such systems. This analysis of ecosystems as spontaneous orders is not based on the assumption that markets can be considered spontaneous orders. Thus, one need not accept Hayek's analysis of markets in order to consider ecosystems as spontaneous orders.

**Question 0**

What have Hayek's views on markets been used to defend?

**Question 1**

What term is used to describe the human duty to avoid disturbing the ecosystem?

**Question 2**

What are the views of ecosystems?

**Question 3**

Spontaneous subscriptions can still be worthwhile without agreeing with Hayek's estimates.

**Question 4**

What is limited by humanity's ignorance?

**Text number 36**

On the safety net, Hayek advocated "some form of provision for those threatened by the extremes of poverty or famine, even if only for the benefit of those who need protection from the desperate actions of those in need". As referred to in the section "The Problem of Economic Accounting", Hayek wrote that "there is no reason why... the state should not help to provide a comprehensive social insurance system". Summarising this point, Wapshott writes: "[Hayek] advocated compulsory universal health care and unemployment insurance, which the state would control, if not directly provide." Bernard Harcourt says that "Hayek was uncompromising on this issue". In Law, Legislation, and Liberty, published in 1973, Hayek wrote:

**Question 0**

According to Wapshott, who contributed to the implementation of universal health care?

**Question 1**

Who, according to Hayek, should provide the safety net for society?

**Question 2**

In which of Hayek's works did he make his statements on social insurance?

**Question 3**

Who claimed that Hayek was particularly resolute in his views on social insurance and the safety net?

**Text number 37**

Arthur M. Diamond argues that Hayek's problems arise when he goes beyond the arguments that can be evaluated within the framework of economics. Diamond argued that "Hayek argued that the human mind is not only limited in its capacity to synthesize a vast number of concrete facts, but is also limited in its capacity to provide a deductively justified basis for ethics. This is where the tension arises, for Hayek also wants to provide a reasoned moral defence of the free market. He is an intellectual sceptic who wants to provide a secure intellectual basis for political philosophy. It is therefore not very surprising that what emerges is confused and contradictory. "

**Question 0**

Who is criticising Hayek's ability to present concrete facts?

**Question 1**

For Diamond, Hayek's weaknesses come to the fore when he crosses the boundaries of what subject?

**Question 2**

What term does Diamond use to refer to Hayek?

**Question 3**

Diamond concludes that the upshot of Hayek's statements is what?

**Text number 38**

When asked by a Chilean interviewer about liberal, non-democratic governance, Hayek said, from German to Spanish to English: 'As a long-term institution, I am totally opposed to dictatorships. But a dictatorship can be a necessary system in a transitional period [...] Personally, I prefer a liberal dictatorship to a democratic regime lacking liberalism. My personal impression - and this applies to South America - is that in Chile, for example, we will witness a transition from dictatorial to liberal government." In a letter to the London Times, he defended the Pinochet regime, saying that he had "not found a single person, even in much maligned Chile, who did not agree that personal freedom was much greater under Pinochet than under Allende". Hayek admitted that "it is not very likely that this will succeed, although at a given moment it may be the only hope that exists." However, he explained, "It is not a sure hope because it always depends on the good will of the individual, and there are very few individuals who can be trusted." Hayek said, "It is not a sure hope because it always depends on the good will of the individual, and there are very few individuals you can trust. But if it is the only possibility that exists at a given moment, it may nevertheless be the best solution. And only if and when the dictatorial government is visibly moving towards limited democracy".

**Question 0**

At what point did Hayek argue that dictatorships may be necessary?

**Question 1**

What did Hayek claim to favour democratic government in the absence of liberal ideals?

**Question 2**

What did Hayek believe the Chilean government would be like in the future?

**Question 3**

According to Hayek, Chileans had more freedom under which ruler?

**Text number 39**

For Hayek, the alleged sharp distinction between authoritarianism and totalitarianism is very important, and Hayek strongly emphasises this distinction in his defence of transitional dictatorship. For example, when Hayek visited Venezuela in May 1981, he was asked to comment on the prevalence of totalitarian regimes in Latin America. In response, Hayek warned against confusing 'totalitarianism and authoritarianism' and said that he was not aware of 'any totalitarian government in Latin America'. The only one was Chile under Allende". For Hayek, however, the word 'totalitarian' implies something very specific: a desire to 'organise society as a whole' to achieve a 'specific social goal' - in sharp contrast to 'liberalism and individualism'.

**Question 0**

Hayek believed that authoritarianism was very different from what?

**Question 1**

Which country did Hayek arrive in, where he made the distinction between totalitarianism and authoritarianism?

**Question 2**

What did Hayek think was missing in Latin America?

**Question 3**

What is Hayek's definition of totalitarianism?

**Text number 40**

In 1932, Hayek suggested that private investment in the public market was a better route to prosperity and economic coordination in Britain than government spending programmes, as he argued in a letter he signed, along with Lionel Robbins and others, in correspondence with John Maynard Keynes in The Times. The almost decade-long deflationary depression in Britain, which began with Churchill's decision in 1925 to return Britain to the gold standard at the old, pre-war, pre-inflationary level, was the public policy background to the only public dispute between Hayek and Keynes over British monetary and fiscal policy. Otherwise, Hayek and Keynes agreed on many theoretical issues, and their economic disagreements were fundamentally theoretical and concerned almost exclusively the relationship between the economics of lengthening the length of output and the economics of labour inputs.

**Question 0**

What did Hayek argue was better than investing in government spending programmes?

**Question 1**

Which other important person signed the letter in which Hayek made his statement on private investment?

**Question 2**

Who was responsible for England's return to using gold as the standard currency?

**Question 3**

With whom did Hayek publicly disagree?

**Text number 41**

Hayek's influence on the development of economics is widely acknowledged. After Kenneth Arrow, Hayek is the second most frequently cited economist in Nobel Prize lectures, which is particularly noteworthy because in his own lecture Hayek was critical of orthodox economics and neoclassical modelling. Several Nobel Prize winners in economics, such as Vernon Smith and Herbert A. Simon, recognise Hayek as the greatest modern economist. Another Nobel laureate, Paul Samuelson, believed that Hayek was worthy of his prize, but argued that "there were good historical reasons why Hayek's memory has faded among economists of the last half of the 20th century. In 1931, Hayek's Prices and Production had enjoyed a very brief period of Byronic success. In retrospect, the nonsense about its production date grossly misdiagnosed the historical macroeconomic scene of 1927-1931 (and 1931-2007)." In retrospect, Hayek was not very good. Despite this remark, Samuelson spent the last 50 years of his life obsessed with the problems of capital theory identified by Hayek and Böhm-Bawerk, and Samuelson judged Hayek to have been right and his own teacher Joseph Schumpeter to have been wrong on the central economic issue of the 20th century, the feasibility of socialist economic planning in an economy dominated by capital goods.

**Question 0**

Which economist is the most quoted Nobel Prize winner in the field?

**Question 1**

Which Nobel laureate has spent most of his life working on Hayek's capital research, despite being critical of Hayek?

**Question 2**

As for the practicality of a socialist economy, who did Samuelson think was wrong?

**Question 3**

Whose Nobel lecture was particularly critical of mainstream economics?

**Question 4**

Which of Hayek's works does Samuelson cite as being incorrect on macroeconomics?

**Text number 42**

Hayek is widely acknowledged for his introduction of the time dimension in the construction of equilibrium and for his central role in inspiring growth theory, information economics and spontaneous order theory. The 'informal' economics presented in Milton Friedman's hugely influential Free to Choose (1980) is explicitly Hayekian, describing the price system as a system of transmission and coordination of information. This can be explained by the fact that Friedman taught Hayek's famous article 'The Use of Knowledge in Society' (1945) in his postgraduate seminars.

**Question 0**

Whose 1980 book mentions "informal" economics?

**Question 1**

What is the title of a book published by Friedman in 1980?

**Question 2**

How does Friedman's book describe the price system?

**Question 3**

What did Friedman once teach about Hayek's work?

**Text number 43**

Hayek had a long and close friendship with the philosopher of science Karl Popper, also from Vienna. In a letter to Hayek in 1944, Popper said, "I think I have learned more from you than from any other living thinker, except perhaps Alfred Tarski. "According to Popper's letter, Hayek had learned more than anyone else. (See Hacohen, 2000). Popper dedicated his Conjectures and Refutations to Hayek. Hayek, in turn, dedicated his collection of articles Studies in Philosophy, Politics, and Economics to Popper, stating in 1982 that "ever since his Logik der Forschung first appeared in 1934, I have been a full supporter of his general methodological theory". Popper also attended the founding meeting of the Mont Pelerin Society. However, their friendship and mutual admiration do not alter the fact that there are significant differences between their ideas.

**Question 0**

Which Viennese guy was Hayek friends with?

**Question 1**

Who is the one exception from whom Hayek claims to have learned more than from Popper?

**Question 2**

Hayek attributed many of his writings to Popper on the basis that Popper attributed them to him in which work?

**Question 3**

Which of Popper's works first caught Hayek's attention?

**Question 4**

Which major Mont Pelerin Society event was Popper present at?

**Text number 44**

Hayek's greatest intellectual debt was to Carl Menger, who pioneered an approach to social explanation similar to that developed by Bernard Mandeville and Scottish moral philosophers during the Scottish Enlightenment in Britain. He had a wide influence on modern economics, politics, philosophy, sociology, psychology and anthropology. For example, Hayek's discussion of truth, lies and language in The Road to Serfdom (1944) influenced some later opponents of postmodernism.

**Question 0**

Which of Hayek's books influenced those who opposed postmodernism?

**Question 1**

To whom did Hayek owe his intellectual success?

**Question 2**

Carl Menger's work in social explanation was not too dissimilar to that of which Scottish period?

**Text number 45**

Hayek gained new attention in the 1980s and 1990s with the rise of conservative governments in the United States, the United Kingdom and Canada. After winning the UK general election in 1979, Margaret Thatcher appointed Keith Joseph, director of the Hayek Centre for Policy Studies, as her industry minister in an attempt to reorient the economic strategies of parliament. Similarly, David Stockman, Ronald Reagan's most influential economic administration official in 1981, was an acknowledged Hayek supporter.

**Question 0**

What year was Margaret Thatcher elected Prime Minister?

**Question 1**

Who did the British Prime Minister choose as Foreign Secretary?

**Question 2**

In the 80s and 90s, the three great English-speaking nations experienced a political transition to what?

**Question 3**

What was the former position of Foreign Secretary to the British Prime Minister?

**Question 4**

Which US President was served by one of Hayek's supporters?

**Text number 46**

Hayek wrote an essay, "Why I am not a conservative" (appended to The Constitution of Liberty), in which he criticized conservatism for its inability to adapt to changing human realities or to provide a positive political program, stating, "Conservatism is only as good as what it preserves." While he noted that modern conservatism shares many economic views with classical liberals, particularly a belief in free markets, he believed it is because conservatism wants to "stand still" while liberalism embraces free markets because it "wants to go somewhere." Hayek defined himself as a classical liberal, but noted that in the US it had become almost impossible to use "liberal" in its original definition, and instead the term "libertarian" had come to be used. In this text, Hayek also opposed conservatism because it "is hostile to internationalism and inclined to strident nationalism" and is often associated with imperialism.

**Question 0**

What ideology did Hayek reject in his essay on the Constitution of Liberty?

**Question 1**

What was Hayek's statement on conservatism?

**Question 2**

What does conservatism have in common with classical liberalism?

**Question 3**

What is the word used in the US for Hayek's ideology?

**Question 4**

Which ideology did Hayek believe conservatism would prevent?

**Text number 47**

However, Hayek, for his part, found this term "particularly unpleasant" and proposed instead the term "old Whig" (a term borrowed from Edmund Burke). In later life, he said: "I am becoming a Burkean Whig". As a political doctrine, however, Whiggerism bore little relation to classical political economy, the tabernacle of the Manchester School and William Gladstone. His essay has served as an inspiration to other liberal-minded economists seeking to distinguish themselves from conservative thinkers, for example James M. Buchanan's essay "Why I, Too, Am Not a Conservative: The Normative Vision of Classical Liberalism".

**Question 0**

What did Hayek suggest as an alternative to being called a libertarian?

**Question 1**

Which group has been influenced by Hayek's work as a contrast to the conservatives?

**Question 2**

Who wrote the essay on Hayek's "Why I am not a conservative"?

**Question 3**

Who gave Hayek the term he proposed as an alternative to libertarianism?

**Question 4**

What term did Hayek use in his later years to describe himself?

**Text number 48**

His opponents have attacked Hayek as a leading promoter of "neoliberalism". British scholar Samuel Brittan said in 2010, "Hayek's book [The Constitution of Liberty] is still probably the most comprehensive presentation of the ideas behind the moderate free market philosophy advocated by neoliberals." "Hayek's book [The Constitution of Liberty] is still probably the most comprehensive presentation of the ideas behind the moderate free market philosophy advocated by neoliberals." Brittan adds that although Raymond Plant (2009) ultimately comes down against Hayek's doctrines, Plant gives The Constitution of Liberty "a more thorough and fair analysis than it has received even from its acknowledged proponents."

**Question 0**

What term do those who disagree with Hayek use to describe his ideals?

**Question 1**

Who claimed that Hayek's Constitution of Liberty is a profound example of neoliberal philosophy?

**Question 2**

Whose ideals does Brittan believe will triumph over Hayek's?

**Text number 49**

British political analyst Madsen Pirie, in Why F. A. Hayek is a Conservative, argues that Hayek is mistaken about the nature of the conservative view. He argues that conservatives are not opposed to change - but, like Hayek, they have a strong aversion to change imposed on the social order by those in authority who think they know how to do things better. They want to let the market run smoothly and give it the freedom to change and evolve. Pirie says that Hayek and conservatives share this view.

**Question 0**

Who is to say that Hayek was in fact a conservative?

**Question 1**

According to Pirie, conservatives only hate change when it is forced by whom?

**Question 2**

Why does Pirie think Hayek is a conservative?

**Question 3**

What does Pirie claim conservatives want from the free market?

**Document number 333**

**Text number 0**

Diarrhoea, also spelled diarrhoea, is a condition in which there are at least three loose or liquid bowel movements a day. It often lasts for a few days and can lead to dehydration due to dehydration. Signs of dehydration often begin with loss of normal skin elasticity and an irritable demeanour. This can progress to reduced urination, loss of skin colour, rapid heart rate and reduced responsiveness as it becomes more severe. In breastfed babies, however, loose but not watery stools may be normal.

**Question 0**

What is diarrhoea?

**Question 1**

What is one of the effects of diarrhoea?

**Question 2**

What are the warning signs of dehydration?

**Question 3**

What are other signs of dehydration?

**Question 4**

What condition is characterised by loose and watery stools in babies?

**Question 5**

Which sign starts with a loss of colour and a rapid heart rate?

**Question 6**

What are the warning signs of diarrhoea?

**Question 7**

How long does it take to dry?

**Question 8**

What are the other signs of diarrhoea?

**Text number 1**

The most common cause is an inflammation of the intestines, caused by either a virus, bacteria or parasite; this is called gastroenteritis. These infections are often contracted from food or water contaminated with faeces, or directly from another infected person. It can be divided into three types: short-lived watery diarrhoea, short-lived bloody diarrhoea and persistent diarrhoea lasting more than two weeks. Short-lasting watery diarrhoea can be caused by cholera infection, but is rare in developed countries. If blood is present, it is also called dysentery. Many non-infectious causes can also cause diarrhoea, including hyperthyroidism, lactose intolerance, inflammatory bowel disease, many medications and irritable bowel syndrome. In most cases, stool cultures are not needed to confirm the exact cause.

**Question 0**

What is the most common cause of diarrhoea?

**Question 1**

What can cause inflammatory bowel disease?

**Question 2**

What are the three types of diarrhoea?

**Question 3**

What is it called if there is blood in it?

**Question 4**

What is the most common cause of cholera?

**Question 5**

What causes dysentery and infection?

**Question 6**

Give some examples of hyperthyroidism from non-infectious causes?

**Question 7**

What are the three types of inflammatory bowel disease?

**Question 8**

What do you get from cholera-contaminated food and water?

**Text number 2**

Better sanitation, clean drinking water and washing hands with soap are needed to prevent infectious diarrhoea. Breastfeeding for at least six months and rotavirus vaccination are also recommended. Oral rehydration solution (ORS), which is pure water with small amounts of salts and sugar, is the preferred treatment. Zinc tablets are also recommended. These treatments are estimated to have saved 50 million children over the past 25 years. When people have diarrhoea, it is recommended that they continue to eat healthy food and that babies continue to be breastfed. If commercial ORS preparations are not available, homemade solutions can be used. For those with severe dehydration, intravenous fluids may be needed. However, most cases can be managed well with oral fluids. Antibiotics are rarely used, but may be recommended in a few cases, such as for people with bloody diarrhoea and high fever, those with severe diarrhoea after a trip, and those with certain bacteria or parasites in their stools. Loperamide can help reduce bowel movements but is not recommended for those with severe disease.

**Question 0**

What are some ways to prevent diarrhoea?

**Question 1**

What else can a mother do to prevent her baby from getting diarrhoea?

**Question 2**

What is the preferred treatment for diarrhoea?

**Question 3**

Under what circumstances will your doctor prescribe antibiotics?

**Question 4**

Give two examples where amounts of salt and sugar are recommended, even though they are rarely used?

**Question 5**

What can a woman do to prevent a high fever in her baby?

**Question 6**

What is recommended for people infected with rotavirus?

**Question 7**

What can be used if commercial antibiotics are not available?

**Question 8**

How do you prevent an infectious rotavirus?

**Text number 3**

There are around 1.7-5 billion cases of diarrhoea each year. It is most common in developing countries, where young children get diarrhoea on average three times a year. The total number of deaths from diarrhoea is estimated at 1.26 million in 2013, compared to 2.58 million in 1990. In 2012, it was the second most common cause of death in children under five (0.76 million or 11%). Frequent episodes of diarrhoea are also a common cause of malnutrition and the most common cause of death in children under five. Other long-term problems can include stunted growth and poor intellectual development.

**Question 0**

How many cases of diarrhoea are there in a year?

**Question 1**

How often do children get diarrhoea in developing countries?

**Question 2**

Frequent episodes of diarrhoea are common in which types of cases?

**Question 3**

What long-term problems can be caused by frequent diarrhoea?

**Question 4**

What are the causes of frequent episodes of slow growth?

**Question 5**

How many cases of malnutrition occur each year?

**Question 6**

What long-term problems can be caused by frequent malnutrition?

**Question 7**

How often do children suffer from malnutrition in developing countries?

**Question 8**

What is the estimate of the total number of deaths due to the slowdown in growth in 2013?

**Text number 4**

Excretory diarrhoea means that active secretion is increased or absorption is blocked. There is little structural damage. The most common cause of this type of diarrhoea is cholera toxin, which stimulates the secretion of anions, especially chloride ions. Therefore, in order to maintain the charge balance in the lumen, sodium is transported with the water. In this type of diarrhoea, intestinal fluid secretion is isotonic with plasma even during fasting. It persists even when food is not taken orally.

**Question 0**

What is excretory diarrhoea?

**Question 1**

What are the causes of excretory diarrhoea?

**Question 2**

Is excretory diarrhoea associated with structural damage?

**Question 3**

What does it mean that structural damage or absorption inhibition will increase?

**Question 4**

What causes the inhibition of absorption?

**Question 5**

Is there structural damage associated with oral ingestion?

**Question 6**

What happens to fluid secretion when food is taken orally?

**Question 7**

What stimulates chloride plasma secretion?

**Text number 5**

Osmotic diarrhoea occurs when too much water is absorbed into the intestines. If a person drinks solutions containing too much sugar or salt, they can draw water from the body into the intestines and cause osmotic diarrhoea. Osmotic diarrhoea can also be the result of digestive disorders (e.g. pancreatitis or celiac disease), where nutrients are trapped in the lumen to draw water out. Or it can be caused by osmotic laxatives (which relieve constipation by drawing water into the intestines). In healthy people, too much magnesium or vitamin C or undigested lactose can cause osmotic diarrhoea and bowel bloating. A person with lactose intolerance may have difficulty absorbing lactose after an abnormally high intake of dairy products. In people with fructose malabsorption, excessive fructose intake may also cause diarrhoea. High fructose foods, which are also high in glucose, are better absorbed and less likely to cause diarrhoea. Sugar alcohols such as sorbitol (often found in sugar-free foods) are difficult for the body to absorb and can cause osmotic diarrhoea in large quantities. In most of these cases, osmotic diarrhoea ceases when the harmful substance (e.g. milk, sorbitol) is discontinued.

**Question 0**

What happens in osmotic diarrhoea?

**Question 1**

What causes osmotic diarrhoea?

**Question 2**

How do osmotic laxatives work?

**Question 3**

What can cause osmotic diarrhoea in healthy people?

**Question 4**

What causes osmotic intolerance?

**Question 5**

What can cause too much fructose in healthy people?

**Question 6**

How does fructose malabsorption work?

**Question 7**

What is difficult for a person with celiac disease to absorb after eating dairy products?

**Question 8**

Which dairy-rich foods are less likely to cause diarrhoea?

**Text number 6**

Inflammatory diarrhoea occurs when the mucosal lining or brush border of the mucosa is damaged, leading to the passive loss of protein-rich fluids and a reduced ability to absorb these lost fluids. This type of diarrhoea can have features of all three other types of diarrhoea [clarification needed]. It can be caused by bacterial infections, viral infections, parasitic infections or autoimmune problems such as inflammatory bowel disease. It can also be caused by tuberculosis, colon cancer and inflammatory bowel disease [citation needed].

**Question 0**

When does inflammatory diarrhoea occur?

**Question 1**

What happens in inflammatory diarrhoea?

**Question 2**

What can cause inflammatory diarrhoea?

**Question 3**

What are the other causes of inflammatory diarrhoea?

**Question 4**

What causes inflammatory tuberculosis?

**Question 5**

What does inflammatory bowel disease lead to?

**Question 6**

What are the other causes of parasitic infections?

**Question 7**

Name other causes of viral infections?

**Question 8**

What is damaged when colour cancer occurs?

**Text number 7**

Diphtheria can have a negative impact on both physical fitness and mental development. "Malnutrition in early childhood, for whatever reason, reduces physical fitness and work productivity in adulthood", and diarrhoea is the primary cause of childhood malnutrition. There is also evidence that diarrhoeal disease has a significant impact on mental development and health; it has been shown that, even when helminth infection and early breastfeeding were taken into account, children who experienced severe diarrhoea had significantly lower scores on a battery of intelligence tests.

**Question 0**

What are the effects of diarrhoeal diseases on humans?

**Question 1**

What can cause malnutrition in early childhood?

**Question 2**

What is the cause of childhood malnutrition?

**Question 3**

Children who have experienced severe diarrhoea are more likely to have what effects?

**Question 4**

What causes children to get poor results in physical fitness tests?

**Question 5**

What reduces the mental development and productivity of adults?

**Question 6**

What are the proven effects of helminth diseases?

**Question 7**

Which disease negatively affects intelligence?

**Question 8**

What are children with helmenth infection more likely to have?

**Text number 8**

Another possible cause of diarrhoea is irritable bowel syndrome (IBS), which usually manifests itself as abdominal discomfort that is relieved by defecation and unusual stools (diarrhoea or constipation) for at least three days a week in the previous three months. Symptoms of diarrhoea-predominant IBS can be controlled by a combination of dietary changes, soluble fibre supplements and/or medicines such as loperamide or codeine. Around 30% of patients with diarrhoeal IBS have a bile acid malabsorption disorder, which has been detected by an abnormal SeHCAT test.

**Question 0**

What is IBS?

**Question 1**

What symptoms do you have with IBS?

**Question 2**

How can IBS symptoms be managed?

**Question 3**

What is another possible reason for the unusual stools?

**Question 4**

How can the symptoms of bile acid malabsorption be treated?

**Question 5**

What is SeHCAT syndrome?

**Question 6**

How many SeHCAT patients have a bile acid malabsorption disorder?

**Question 7**

What is the diagnosis for patients with unusual stools?

**Text number 9**

Poverty is a good indicator of the level of infectious diarrhoea in the population. This link is not due to poverty itself, but rather to the conditions in which poor people live. The lack of certain resources reduces the ability of the poor to defend themselves against infectious diarrhoea. "Poverty is associated with poor housing, overcrowding, dirty floors, lack of clean water or disposal of faecal waste (sanitation), coexistence with domestic animals that can carry human pathogens, and lack of cold storage of food, all of which increase the incidence of diarrhoea...". Poverty also limits opportunities to provide an age-appropriate, nutritionally balanced diet or to modify diets when diarrhoea occurs to mitigate and correct nutrient losses. The impact is exacerbated by the lack of adequate, accessible and affordable medical care. "

**Question 0**

What is a good indicator of the amount of infectious diarrhoea?

**Question 1**

Why does living in poverty increase the risk of diarrhoea?

**Question 2**

What is causing this worsening?

**Question 3**

What shows the cost of medical care?

**Question 4**

Why does poverty increase the risk of nutrient losses?

**Question 5**

What prevents poor people from defending themselves against human pathogens?

**Question 6**

What are some examples of the lack of affordable medical care?

**Question 7**

What limits the ability to provide sanitation?

**Text number 10**

Proper nutrition is important for health and functional capacity, including the prevention of infectious diarrhoea. It is particularly important for young children whose immune systems are not yet fully developed. Zinc deficiency, often found in children in developing countries, even in mild cases, can have a significant impact on the development and proper functioning of the human immune system. The relationship between zinc deficiency and impaired immune function corresponds to an increase in the severity of infectious diarrhoea. Children with reduced zinc levels are more likely to have diarrhoea, severe diarrhoea and diarrhoea associated with fever. Similarly, vitamin A deficiency can increase the severity of diarrhoeal episodes, but there is some variation in the effect of vitamin A deficiency on the incidence of disease. Some argue that there is no link between disease incidence and vitamin A status, while others claim that disease incidence increases with deficiency. Given that an estimated 127 million preschool-age children worldwide are vitamin A deficient, this population may be more vulnerable to disease infection.

**Question 0**

Why is proper nutrition important?

**Question 1**

What are the effects of lower zinc levels on children?

**Question 2**

What can cause vitamin A deficiency?

**Question 3**

What is the global vitamin A deficiency in children?

**Question 4**

Why is a fully developed immune system important?

**Question 5**

What are the mild cases of infectious diarrhoea?

**Question 6**

What about children who have less disease reduction?

**Question 7**

How many pre-school children in the world are zinc deficient?

**Question 8**

What do others suggest about increasing the causes of nutrition?

**Text number 11**

According to two researchers, Nesse and Williams, diarrhoea may act as an evolved defence mechanism against expulsion. If it is stopped, recovery may be delayed. They cite a 1973 study to support this claim, which found that treating Shigella with the anti-diarrhoeal drug Co-phenotrope (Lomotil) caused people to remain feverish twice as long as those who were not treated in this way. The researchers themselves concluded that. Diarrhoea may be a defence mechanism".

**Question 0**

What did Nesse and Williams learn?

**Question 1**

If diarrhoea stops, what could happen?

**Question 2**

What happened to people with Shigella who were treated with anti-diarrhoeal drugs?

**Question 3**

What is Shigella's mission?

**Question 4**

If the research is stopped, what can happen?

**Question 5**

What happened to people treated with Lomotil when they were treated with anti-diarrhoeal medicines?

**Question 6**

What is the counter-argument to support this claim?

**Question 7**

What did researchers find out about shigellosis?

**Text number 12**

Basic hygiene techniques can have a major impact on the spread of diarrhoeal diseases. For example, hand washing with soap and water has been shown experimentally to reduce the incidence of the disease by around 42-48%. However, handwashing in developing countries is hampered by poverty, as the CDC acknowledges: "Handwashing is an essential part of disease prevention worldwide, but access to soap and water is limited in many less developed countries. This lack is one of many challenges that hamper proper hygiene in less developed countries." Solutions to this barrier require the implementation of education programmes that encourage hygiene behaviour.

**Question 0**

What has contributed significantly to the spread of diarrhoeal diseases?

**Question 1**

How much does handwashing reduce the chance of disease?

**Question 2**

Why don't developing countries wash their hands as much as other countries?

**Question 3**

What is the solution to solve this problem?

**Question 4**

What has a profound impact in developed countries?

**Question 5**

By what percentage do training programmes reduce the chance of getting sick?

**Question 6**

What is the solution to poverty?

**Question 7**

Where is education an essential part of disease prevention?

**Question 8**

What is the challenge in reducing disease in less developed countries?

**Text number 13**

As water contamination is a major means of spreading diarrhoeal diseases, the provision of clean water and improved sanitation can significantly reduce the incidence of disease. In fact, it has been suggested that improved water supply and sanitation can be expected to reduce child mortality from diarrhoeal diseases by 88%. Similarly, a meta-analysis of numerous studies on improving water supply and sanitation shows a 22-27% reduction in disease incidence and a 21-30% reduction in diarrhoeal disease mortality.

**Question 0**

What is a major tool in the spread of diarrhoeal diseases?

**Question 1**

What has reduced the number of cases of diarrhoea?

**Question 2**

How much would the incidence of disease be reduced if water and sanitation were better?

**Question 3**

What is the main way the disease is spread?

**Question 4**

What is the percentage reduction in diarrhoeal diseases due to improved water and hygiene?

**Question 5**

What has reduced mortality?

**Question 6**

What is the reduction in mortality associated with the disease?

**Question 7**

What is the cause of child mortality?

**Text number 14**

Vaccination against diarrhoeal pathogens is a useful prevention strategy, but it requires targeting certain pathogens for vaccination. Rotavirus, which caused about 6% of diarrhoeal disease cases in children in developing countries and 20% of diarrhoeal disease deaths, slightly reduced the overall incidence of diarrhoeal disease (2-3%) while reducing overall mortality by 6-10% in 1985 trials. Similarly, the cholera vaccine strongly reduced morbidity and mortality, although the overall effect of the vaccine was small, as cholera is not a major cause of diarrhoeal diseases. Since then, more effective vaccines have been developed that can save thousands of lives in developing countries, while reducing the overall cost of treatment and the cost to society.

**Question 0**

What is the harm of using immunisation against pathogens that cause diseases?

**Question 1**

What is responsible for 6% of dearrheal disease?

**Question 2**

What percentage of diarrhoea deaths are caused by rotavirus?

**Question 3**

What was the effect of the rotavirus vaccine?

**Question 4**

What year was the rotavirus vaccine used?

**Question 5**

What is responsible for 6% of cholera cases?

**Question 6**

What requires vaccination to target the disease?

**Question 7**

What were the results of the 1985 cholera vaccine tests?

**Question 8**

What year was the cholera vaccine used?

**Question 9**

What might follow if effective ways are developed to target new pathogens?

**Text number 15**

Nutritional deficiencies in developing countries can be tackled by promoting better dietary practices. Increasing vitamin A and/or zinc. The zinc supplement proved successful in significantly reducing the incidence of diarrhoeal diseases compared to the control group. Most of the literature suggests that vitamin A supplementation reduces disease incidence. When developing a supplementation strategy, it should be borne in mind that vitamin A supplementation is less effective in reducing diarrhoea incidence than vitamin A and zinc supplementation and that the latter strategy was estimated to be significantly more cost-effective.

**Question 0**

What can be done to combat dietary deficiencies?

**Question 1**

What has been used and proven to be successful in reducing the incidence of diarrhoeal diseases?

**Question 2**

Which strategy proved to be more cost-effective?

**Question 3**

How can zinc deficiency be prevented?

**Question 4**

Which strategy showed that the prevalence of nutritional deficiencies decreased?

**Question 5**

Which dietary deficiency was found to be less effective in reducing the incidence of diarrhoea?

**Question 6**

What measures help to fight diarrhoea?

**Question 7**

Which control group was found to be more cost-effective?

**Text number 16**

In many cases of diarrhoea, replacing lost fluid and salts is the only treatment needed. This is usually done orally - oral rehydration therapy - or in severe cases intravenously. Dietary restrictions such as the BRAT diet are no longer recommended. Studies do not support milk restriction in children as it has no effect on the duration of diarrhoea. On the contrary, the WHO recommends that children with diarrhoea continue to eat, as usually sufficient nutrients are still absorbed to support growth and weight gain, and because continuing to eat also speeds up the recovery of normal bowel function. The CDC also recommends that children and adults with cholera continue to eat.

**Question 0**

What basic treatment do many diarrhoea sufferers need?

**Question 1**

How is this treatment given?

**Question 2**

What kind of diet is no longer recommended?

**Question 3**

What does WHO recommend to do?

**Question 4**

What care do people on oral rehydration therapy need?

**Question 5**

What kind of diet does BRAT recommend?

**Question 6**

What type of oral rehydration therapy is not recommended?

**Question 7**

What does not affect the duration of cholera?

**Question 8**

What does continuing to replace lost fluid and salts intravenously speed up?

**Text number 17**

Oral rehydration solution (ORS) (slightly sweetened and salty water) can be used to prevent dehydration. At home, standard home solutions such as salted rice water, salted yoghurt drinks, vegetable and chicken soups with salt can be given. Home solutions such as boiled cereal water, unsalted soup, green coconut water, weak tea (unsweetened) and unsweetened fresh fruit juices can have half a teaspoon to a full teaspoon (1.5-3 grams) of salt added per litre. Pure plain water can also be one of the many liquids given. There are commercial solutions, such as Pedialyte, and aid agencies such as UNICEF widely distribute salt and sugar packets. A WHO publication recommends a homemade ORS preparation for doctors, consisting of one litre of water with one teaspoon of salt (3 grams) and two tablespoons of sugar (18 grams) (roughly "tear-flavoured"). The Rehydration Project recommends adding the same amount of sugar but only half a teaspoon of salt, and finds that this more dilute approach is less risky and has little loss of efficacy. Both agree that drinks with too much sugar or salt can make dehydration worse.

**Question 0**

How can dehydration be prevented?

**Question 1**

What are some good standard home solutions?

**Question 2**

What is a commercial solution that can also be used?

**Question 3**

What is the WHO ORS prescription?

**Question 4**

What can make anxiety worse?

**Question 5**

What can WHO be used for in children?

**Question 6**

Can you name some common aqueous solutions?

**Question 7**

Who distributes Pedialyte widely?

**Question 8**

How much chicken soup does the Rehydration Project recommend adding?

**Text number 18**

Drinks that are particularly high in simple sugars, such as soft drinks and fruit juices, are not recommended for children under 5 years of age as they can increase dehydration. Too much solution in the intestines absorbs water from the rest of the body, just as if a person were drinking seawater. Plain water can be used if more specific and effective ORT preparations are not available or do not taste good. Alternatively, the same person can be given a mixture of both plain water and drinks that may be too high in sugar and salt, with the aim of providing a moderate amount of sodium overall. For young children, liquids can be given by nasogastric tube if necessary.

**Question 0**

What is not recommended for younger children as it may cause more dehydration?

**Question 1**

Why are fizzy drinks and fruit juices high in sugar not recommended?

**Question 2**

What can be used to give fluids when they cannot drink?

**Question 3**

What can be used to give fluids if drinks are too sugary?

**Question 4**

Who is ordinary water not recommended for?

**Question 5**

Why is plain water and ORT not recommended?

**Question 6**

What can be given to administer specific ORT preparations?

**Question 7**

What does water alone do to the gut?

**Text number 19**

The WHO recommends that a child with diarrhoea should continue to be fed. Continuing to feed the baby will speed up the return to normal bowel function. In contrast, children whose feeding is restricted have a longer duration of diarrhoea and a slower recovery of bowel function. The child should also continue to be breastfed. The WHO says: "Food should never be withheld, nor should a child's usual foods be diluted. Breastfeeding must always be continued. "And in the example of cholera, the CDC also makes the same recommendation. For young children in developed countries who have not been breastfed, a lactose-free diet can be useful to speed recovery.

**Question 0**

What does the WHO recommend?

**Question 1**

What will continuing to eat do to your disease?

**Question 2**

What happens when a child's food is restricted?

**Question 3**

What happens if a child's breastfeeding is restricted?

**Question 4**

What does the CDC say about your child's diet when he or she has diarrhoea?

**Question 5**

What speeds up the recovery of food retention?

**Question 6**

Which organisation recommended that a lactose-free diet should always be followed?

**Question 7**

Who made the same recommendation about bowel function?

**Text number 20**

Although antibiotics are useful for certain types of acute diarrhoea, they are not usually used except in specific situations. Antibiotics may increase the risk of haemolytic uremic syndrome in people infected with Escherichia coli O157:H7. In resource-poor countries, antibiotic treatment may be beneficial. However, some bacteria are developing antibiotic resistance, notably Shigella. Antibiotics can also cause diarrhoea, and antibiotic-induced diarrhoea is the most common side effect of treatment with common antibiotics.

**Question 0**

Are antibiotics used in cases of diarrhoea?

**Question 1**

What are the concerns about antibiotics?

**Question 2**

What do bacteria do that doesn't work as well?

**Question 3**

What do antibiotics do that treatment does not work well?

**Question 4**

What are the concerns about Escherichia coli O157:H7?

**Question 5**

Where is antibiotic resistance treatment useful?

**Question 6**

Are antibiotics used for certain types of antibiotic resistance?

**Question 7**

In which resource-poor country is antibiotic resistance developing?

**Document number 334**

**Text number 0**

Madrasa (Arabic مدرسة, madrasah, plural مدارس, madāris, Turkish Medrese) is an Arabic word meaning any kind of educational institution, whether secular or religious (of any religion). The word is variously transliterated as madrasah, madarasaa, medresa, madrassa, madraza, medrese, etc. In the West, the word usually refers to a particular religious school or college where the religion of Islam is studied, although it is not necessarily the only subject studied. Not all students at madaris are Muslim, but there is also a modern curriculum.

**Question 0**

Where does the word madrasa come from?

**Question 1**

What type of educational institution does the term madrasa refer to?

**Question 2**

In Western culture, the term madrasa refers broadly to the practices of which religion?

**Question 3**

How many Madaris students are Muslim?

**Question 4**

What does Madrasa mean in French?

**Question 5**

What type of educational establishment is not covered by the term madrasa?

**Question 6**

To which religion in Eastern culture does the term madrasa refer?

**Question 7**

Which school does the madrasa not refer to?

**Question 8**

What do Islamic religions study?

**Text number 1**

The word madrasah comes from the Semitic triad د-ر-س D-R-S 'to learn, to study', wazn (form/stem) مفعل(ة); mafʻal(ah), meaning 'a place where something is done'. Thus, madrasa literally means 'a place where learning and study take place'. The word also occurs as a loanword with the same innocuous meaning in many Arabic-influenced languages, such as Urdu, Bengali, Hindi, Persian, Turkish, Azeri, Kurdish, Indonesian, Malay and Bosnian/Croatian. In Arabic, the word مدرسة madrasah simply means the same as school in English, whether it is a private, public or parochial school or any primary or secondary school, whether it is a Muslim school, a non-Muslim school or a secular school. Unlike in British English, the word madrasah more closely resembles the American English word school, as it can refer to a university or post-graduate school as well as a primary or secondary school. For example, in the Ottoman Empire in the early modern period, madrasahs had lower schools and special schools where students were known as danişmends. However, the usual Arabic word for university is جامعة (jāmiʻah). The Hebrew colloquial term midrasha also means a place of learning; the related term midrash literally refers to study or learning, but has taken on mystical and religious connotations.

**Question 0**

What is the origin of the word madrasa?

**Question 1**

What is the literal translation of madrasa?

**Question 2**

What does madarasah mean in Arabic?

**Question 3**

What types of schools were typical during the Ottoman Empire?

**Question 4**

What was the name given to the Madaris students?

**Question 5**

What are not the roots of the word madrasa?

**Question 6**

What is the non-literal translation of madrasa?

**Question 7**

What does madarasah mean in French?

**Question 8**

What types of schools were rare during the Ottoman Empire?

**Question 9**

What was the name given to the madaris teachers?

**Text number 2**

In English, however, the term madrasah usually refers specifically to Islamic educational institutions. A typical Islamic school usually offers two courses of study: the ḥifẓ course, which teaches memorisation of the Qur'an (a person who memorises the entire Qur'an is called a ḥāfiẓ), and the ʻālim course, which introduces the candidate to becoming an accepted scholar in the community. The standard curriculum includes courses in Arabic, tafsir (interpretation of the Qur'an), sharīʻah (Islamic law), hadith (the recorded sayings and deeds of Muhammad), mantiq (logic) and Muslim history. In the early modern period of the Ottoman Empire, the study of hadith was introduced by Süleyman I. Depending on educational needs, some madrasas also offer advanced courses in Arabic literature, English and other foreign languages, as well as in natural sciences and world history. In addition to religious instruction, Ottoman madrasas also taught 'writing styles, grammar, syntax, poetry, composition, natural sciences, political science and etiquette'.

**Question 0**

What is the English connotation of the word madrash?

**Question 1**

What is taught in a hifz class or series of classes?

**Question 2**

What is Sharia?

**Question 3**

What subjects are taught in Mantiq courses?

**Question 4**

What kind of courses does someone have to complete to be considered a researcher?

**Question 5**

What is the Spanish connotation of the word madrash?

**Question 6**

What is never taught in hifz classes or classrooms?

**Question 7**

What is the opposite of sharia?

**Question 8**

What subject is not taught in mantiq courses?

**Question 9**

What kind of beliefs does someone have to have in order to be considered a scholar?

**Text number 3**

People of all ages take part, and many often become imams. The ʻālim certificate, for example, requires about twelve years of study. much of the ḥuffāẓ (plural ḥāfiẓ) is the product of madaris. Madaris also resemble colleges, where people attend evening classes and live in dormitories. An important function of madaris is to take in orphans and poor children so that they can be provided with education. Female students can be admitted to madaris, but they study separately from men[citation needed].

**Question 0**

What age groups are usually admitted to the worms?

**Question 1**

How long does someone have to be enrolled in alim courses to get a certificate or to graduate?

**Question 2**

In what ways do worms resemble Western universities?

**Question 3**

Why are the madaris extending enrolment to less fortunate children?

**Question 4**

What is the form of women's co-education in Madaris?

**Question 5**

What age groups are never enrolled in worms?

**Question 6**

How long does someone have to be enrolled in alim courses before they can drop out?

**Question 7**

In what ways do worms resemble eastern colleges?

**Question 8**

Why do worms take rich children to school?

**Question 9**

What is the form of co-education for adults in madaris?

**Text number 4**

The term "Islamic education" refers to education in the light of Islam, based on the teachings of the Muslim holy book, the Koran. Islamic education and Muslim education are not the same thing. Because Islamic education has an epistemological integration based on Tawhid - Oneness or monotheism. For more information read "Quranic Methodology for Integrating Knowledge and Education: Implications for Malaysia's Islamic Education Strategy" by Tareq M Zayed and "Knowledge of Shariah and Knowledge to Manage 'Self' and 'System': Integration of Islamic Epistemology with the Knowledge and Education" by Tareq M Zayed.

**Question 0**

What is the importance of Islamic education?

**Question 1**

Which book is the basis of education in the Islamic tradition?

**Question 2**

What kind of education is very different from Islamic education?

**Question 3**

What is the Islamic religion traditionally considered theology?

**Question 4**

What is non-Islamic education?

**Question 5**

Which book is the basis of non-religious education in the Islamic tradition?

**Question 6**

What kind of education is exactly the same as Islamic education?

**Question 7**

What is the Islamic religion in the modern sense of theology?

**Text number 5**

The first madrasa was in the mansion of Hazrat Zaid bin Arkam near the hill called Safa, where Hazrat Muhammad was a teacher and his students were his followers.After the Hijra (migration), a "Suffa" madrasa was established in Madinah, east of the Al-Masjid an-Nabawi mosque. Hazrat 'Ubada bin Samit was appointed there by Hazrat Muhammad as a teacher and among the students. the curriculum of the madrasa included the teaching of the Qur'an, Hadith, fara'iz, tajweed, genealogy, first aid books, etc. In addition, training was given in horse riding, martial arts, handwriting and calligraphy, athletics and martial arts. The first part of the madrasa-based education is estimated to extend from the first day of the "nabuwwat" to the first part of the "Umaiya caliphate"[citation needed].

**Question 0**

Where was the first madrasa located?

**Question 1**

Who was the teacher of the first madrasa?

**Question 2**

Who was appointed as the teacher of the second madrasa in the mosque?

**Question 3**

What handwriting was taught in the early madars?

**Question 4**

What kind of physical activities were taught in early madars?

**Question 5**

Where was the second madrasa located?

**Question 6**

Who was the teacher of the third madrasa?

**Question 7**

Who was appointed as the teacher of the latest madrasa?

**Question 8**

What martial arts were taught in the early madars?

**Question 9**

What kind of ball sports were taught in early madars?

**Text number 6**

During the Fatimid and Mamluk dynasties and their successor states in the medieval Middle East, many members of the ruling elite established madrassas through a religious endowment called waqf. The madrasa was not only a powerful symbol of status, but also an effective means of passing on wealth and status to descendants. Especially during the Mamlūk period, when only former slaves could take power, the sons of the ruling Mamlūk elite could not inherit. Thus, they were able to maintain their position in the new madaris through guaranteed positions. The madaris built during this period include the mosque-madrasa of Sultan Ḥasan in Cairo.

**Question 0**

Which class of people founded worms in the Middle Ages?

**Question 1**

How were birds financed in the Middle Ages?

**Question 2**

Which class of people inherited the position during the Mamluk period?

**Question 3**

What allowed the ruling elite to remain in power during the Mamluk era?

**Question 4**

In which city was Sultan Hasan's Mosque-Madrasah?

**Question 5**

Which class of people established birds in ancient times?

**Question 6**

How were birds financed in the prehistoric period?

**Question 7**

Which class of people abandoned the station during the Mamluks?

**Question 8**

What allowed the plebeians to maintain their power during the Mamluk period?

**Question 9**

Which city abandoned the mosque-madrasah of Sultan Hasan?

**Text number 7**

In the early days of the Caliphate or Islamic Empire, reliance on the courts initially limited sponsorship and scientific activity to large centres. Over several centuries, the development of Muslim educational institutions such as the madrasah and masjid eventually brought such activities to provincial towns and cities and decentralised them to Islamic law schools and Sufi organisations. In addition to religious subjects, they also taught 'rational sciences' such as mathematics, astronomy, astrology, geography, alchemy, philosophy, magic and occultism, depending on the curriculum of the institution concerned. However, the madars were not centres of advanced scientific research; the advances in Islamic science were usually made by scholars working under the patronage of the royal courts. During this period [when?] the caliphate experienced a growth in literacy, with the highest literacy rate in the Middle Ages, comparable to that of classical Athens in antiquity, but on a much larger scale. The emergence of the Maktab and Madrasa institutions played a fundamental role in the relatively high literacy levels of the medieval Islamic world.

**Question 0**

Who traditionally paid for science education?

**Question 1**

Which group of people had the highest literacy rate in the Middle Ages?

**Question 2**

Which schools contributed most to literacy in the caliphate?

**Question 3**

How long did it take for madaris to spread to smaller towns?

**Question 4**

Who disapproved of the study of science by scholars?

**Question 5**

Which group of people had the lowest literacy rates in the Middle Ages?

**Question 6**

Which schools contributed most to the caliphate's decline in literacy?

**Question 7**

When did madaris spread to larger cities?

**Text number 8**

In the medieval Islamic world, primary schooling was known as maktab, which dates back to at least the 10th century. Like madaris (which referred to higher education), the maktab was often attached to a donated mosque. The famous Persian Islamic philosopher and teacher Ibn Sīnā (known in the West as Avicenna) wrote a chapter on the maktab in a book about the maktab in the 11th century entitled 'The role of the teacher in the education and upbringing of children' as a guide for teachers working in maktab schools. He wrote that children learn better if they are taught in classrooms rather than individually by private tutors, and he gave several reasons why this is so, citing the value of competition and imitation between pupils and the usefulness of group discussions and debates. Ibn Sīnā described the curriculum of the maktab school in some detail, describing the two stages of the maktab school curriculum.

**Question 0**

When were the first Islamic primary schools?

**Question 1**

What term refers to Islamic primary schools?

**Question 2**

Who wrote the training guide for Islamic maktab teachers?

**Question 3**

What did Ibn Sina prefer to private teachers?

**Question 4**

How many aspects of education did Ibn Sina describe in his teachings?

**Question 5**

When was the last time Islamic primary schools were registered?

**Question 6**

Which term refers to non-Muslim primary schools?

**Question 7**

Who wrote the training guide for Islamic maktab students?

**Question 8**

What did Ibn Sina prefer to public schools?

**Question 9**

What is the third part of Ibn Sina's training?

**Text number 9**

Ibn Sīnā refers to the secondary education phase of the maktab school as a period of specialisation, when students should begin to acquire craft skills regardless of their social status. He writes that after the age of 14, children should be allowed to choose and specialise in subjects they are interested in, whether it be reading, handicrafts, literature, preaching, medicine, geometry, commerce, crafts or any other subject or profession they would be interested in pursuing in their future careers. He wrote that this is a transitional phase and that the age at which pupils graduate needs to be flexible, taking into account their emotional development and their choice of subjects.

**Question 0**

What skills does Ibn Sina believe children should learn in secondary education?

**Question 1**

According to Ibn Sina, at what age should children choose the direction of their education?

**Question 2**

What does Ibn Sina say is needed to support transition in secondary education?

**Question 3**

What should secondary education offer secondary students?

**Question 4**

What skills did Ibn Sina say children should learn in primary school?

**Question 5**

According to Ibn Sina, at what age should children stop going to school?

**Question 6**

What does Ibn Sina say is needed to support transition in the early stages of primary education?

**Question 7**

What should secondary education offer teachers in secondary education?

**Question 8**

What else do parents need to consider besides emotional development?

**Text number 10**

The term madrasa initially referred to a university whose curriculum initially included only "religious sciences", while philosophy and secular sciences were often excluded. The curriculum gradually began to diversify, and many later madrasas taught both religious and 'secular sciences', such as logic, mathematics and philosophy. Some madaris extended their curriculum to include history, politics, ethics, music, metaphysics, medicine, astronomy and chemistry. The curriculum of a madrasa was usually determined by its founder, but most madrasas usually taught both religious and natural sciences. Madrasas were established in various parts of the Islamic world, such as the 9th century University of al-Qarawiyyi, the 10th century University of al-Azhar (the most famous), the 11th century Niẓāmīyah, and 75 madrasas in Cairo, 51 in Damascus and even 44 in Aleppo between 1155 and 1260. During the Caliphate of Córdoba, many other madrasas were also founded in the Andalusian cities of Córdoba, Seville, Toledo, Granada (Granada madrasa), Murcia, Almeria, Valencia and Cadiz.

**Question 0**

What subject was studied in the traditional madrasa?

**Question 1**

What has traditionally been left out of the madrasa curriculum?

**Question 2**

Who decided the content to be taught in a particular madrasa?

**Question 3**

What is the most famous madrasa?

**Question 4**

How many birds have been established in Cairo?

**Question 5**

What discipline was abandoned in the traditional madrasa?

**Question 6**

What was recently rejected in the madrasa?

**Question 7**

Who decided on the content that was rejected in a particular madrasa?

**Question 8**

What is the least known madrasa?

**Question 9**

How many birds are established outside Cairo?

**Text number 11**

The Madaris largely focused on studying fiqh (Islamic jurisprudence). The medieval Islamic legal education system ijāzat al-tadrīs wa-al-iftāʼ ('permission to teach and give legal opinions') took root in the ninth century after the establishment of madhāhibs (law schools). George Makdisi considers ijāzah to be the origin of the European doctorate. In an earlier article, however, he argued that the ijāzah 'differs essentially' from the medieval doctorate, since the former was awarded by an individual teacher-scholar who was not obliged to follow any formal criteria, while the latter was awarded to the student by the collective authority of the faculty. To obtain an ijāzah, a student "had to study at a law guild school, usually for four years for the undergraduate degree" and ten or more years for the postgraduate degree. 'The degree of doctor was awarded after an oral examination to determine the originality of the applicant's theses' and to test the student's 'ability to defend them against all objections in the course of a series of controversial hearings held for that purpose'. These were scientific exercises that were practised throughout the student's "career as a postgraduate law student". Once the students had completed their postgraduate studies, they were granted ijazat, which gave them the status of faqīh 'scholar of jurisprudence', muftī 'scholar qualified to give fatwas' and mudarri 'teacher'.

**Question 0**

Which term refers to Islamic law?

**Question 1**

When did Islamic law school start?

**Question 2**

How long did a student have to study law at the early Islamic law schools to graduate?

**Question 3**

Which traditional schooling has been considered as a model for traditional Islamic secondary schools?

**Question 4**

Which term refers to a law other than Islamic law?

**Question 5**

When did the Islamic law school end?

**Question 6**

How long did a student have to study law before they could drop out?

**Question 7**

What modern schooling is considered a model for non-Islamic secondary schools?

**Text number 12**

The Arabic term ijāzat al-tadrīs was given to Islamic scholars who were qualified to teach. According to Makdis, the Latin term licentia docendi 'licence to teach' in a European university may have been a translation from Arabic, but the underlying concept was very different. A significant difference between ijāzat al-tadrīs and licentia docendi was that the former was granted by the individual learned teacher, while the latter was granted by the chief university officer, who represented the collective faculty instead of the individual learned teacher.

**Question 0**

What did winning the ijazat al-tadris award mean for students?

**Question 1**

Who granted the teaching licence in Islamic schools?

**Question 2**

Who granted the teaching licence in European schools?

**Question 3**

What type of licence is closely related to ijazat al-tadris?

**Question 4**

What did ijazat al-tadris discipline students deserve?

**Question 5**

Who gave permission to teach in non-Islamic schools?

**Question 6**

Who refused a teaching licence in European schools?

**Question 7**

What kind of licence is very different from ijazat al-tadris?

**Question 8**

Who was not the chief official of the university?

**Text number 13**

Much of the study at the Madrasa School focused on whether certain legal opinions were orthodox. This 'scientific process of determining orthodoxy began with a question posed by a Muslim layman, called in this capacity a mustaftī, to a jurist, called a mufti, and asking him for an answer, called a fatwa, a legal opinion (Islamic religious law covers both civil and religious matters). The Mufti (professor of legal opinions) took this question, studied it, studied it intensively from the holy scriptures to find a solution to it. This process of scientific research was called ijtihād, literally, the exertion of effort to the extreme."

**Question 0**

What was the most debated definition of legal research?

**Question 1**

What is the Islamic term for giving a legal opinion?

**Question 2**

What kind of things are covered by Islamic law?

**Question 3**

What is ijtihad?

**Question 4**

What definition of legal research has never been examined?

**Question 5**

What is the non-Islamic term for giving a legal opinion?

**Question 6**

What kind of issues are covered by non-Islamic law?

**Question 7**

What is the opposite of ijtihad?

**Question 8**

What is not a translation of ijtihad?

**Text number 14**

There is disagreement about whether worms ever became universities. Scholars such as Arnold H. Green and Seyyed Hossein Nasr have argued that from the 10th century onwards, some medieval Islamic madars did indeed become universities. However, George Makdisi and others argue that the European university has no parallel in the medieval Islamic world. Darleen Pryds challenges this view, pointing out that Mediterranean madrasas and European universities had similar foundations, established by princely patrons and designed to provide loyal administrators who furthered the rulers' aims. Other scholars consider the university to be uniquely European in origin and characteristics.

**Question 0**

When did some worms start to be considered as traditional colleges?

**Question 1**

Which group of people founded both European universities and Islamic madars?

**Question 2**

What was the ultimate purpose of the madaris?

**Question 3**

Who said that European universities and Islamic madars have very little in common?

**Question 4**

When did some madars start to be seen as different from traditional colleges?

**Question 5**

Which group of people founded only European universities?

**Question 6**

What class of people founded only Islamic birds?

**Question 7**

What was considered the open purpose of the madaris?

**Question 8**

Who said that European universities and Islamic madars have very little in common?

**Text number 15**

Many historians consider the al-Qarawīyīn University in Fes, Morocco, to be the oldest degree-granting university in the world, founded by Fatima al-Fihri in 859. While madrasahs could also award degrees at all levels, jāmiʻahs (such as al-Qarawīyīn and al-Azhar University) differed in that they were larger institutions, more general in their complete source of study, had individual faculties for different subjects and could house several mosques, madaris and other institutions within them. Such an institution has thus been described as an "Islamic university".

**Question 0**

When was al-Qarawiyin University founded?

**Question 1**

Who founded al-Qarawiyin University?

**Question 2**

What kind of degrees were awarded at al-Qarawiyin University?

**Question 3**

What religious buildings were there in al-Qarawiyin University?

**Question 4**

What kind of teachers were there at al-Qarawiyin University?

**Text number 16**

Al-Azhar University, founded by Ismaʻīlī Shīʻī of the Fatimid dynasty in Cairo, Egypt in 975 as a jāmiʻah, had individual faculties for theological seminary, Islamic law and jurisprudence, Arabic grammar, Islamic astronomy, early philosophy of Islamic philosophy and logic of Islamic philosophy. The degree of Doctor of Laws was awarded only "after an oral examination to determine the originality of the applicant's theses" and to test the student's "ability to defend them against all objections in disputations organised for that purpose". 'Abd al-Laṭīf al-Baghdādī also gave lectures on Islamic medicine at al-Azhar, and Maimonides gave lectures on medicine and astronomy there during Saladin. Another early jāmiʻah was the Niẓāmīyah of Baghdād (founded in 1091), which has been called 'the greatest university of the medieval world'. Founded by ʻAbbāsid-kalifi al-Mustanṣir in 1233, the University of Mustansiriyah offered courses in philosophy, mathematics and natural sciences in addition to religious studies.

**Question 0**

When was Al-Azhar University founded?

**Question 1**

Where is Al-Azhar University located?

**Question 2**

What was required to obtain a law degree from Al-Azhar University?

**Question 3**

Who was the professor of astronomy at Al-Azhar University?

**Question 4**

What is Baghdad's Nizamiyah best known for?

**Text number 17**

However, Madaris's classification of "universities" is disputed in terms of how each institution is understood on its own terms. In the Madaris, ijāzas were given in only one field, the sharīʻah of Islamic religious law, and in no other field of learning. Other academic subjects, such as science, philosophy and literary studies, were treated only as 'aids' to the study of shari'ah. For example, natural sciences such as astronomy were studied (if at all) only to meet religious needs such as prayer time. For this reason, Ptolemaic astronomy was considered sufficient, and is still taught in some modern-day madrasas. The undergraduate degree in Islamic law at al-Azhar, the most prestigious madrasa, was traditionally awarded without final examinations, but on the basis of students' attentive attendance of courses. Unlike the medieval doctorate, which was awarded on the basis of the collective authority of the faculty, the Islamic degree was not awarded by the teacher to the student on the basis of any formal criteria, but was 'a personal matter which was the sole prerogative of the awardee; no one could force him to award it'.

**Question 0**

In what area does ijazah mean expertise?

**Question 1**

What was the purpose of studying science in Madaris?

**Question 2**

Who decided whether a student earned an undergraduate law degree in undergraduate madar?

**Question 3**

What discipline is still taught in modern madarsas?

**Question 4**

What is considered the most famous madrasa?

**Question 5**

In what area does ijazah mean no expertise?

**Question 6**

What was the point of not studying science at Madaris?

**Question 7**

Who banned the student from taking an undergraduate law degree in Madaris?

**Question 8**

What discipline is no longer taught in modern madarsas?

**Question 9**

What is considered the least famous madrasa?

**Text number 18**

Medieval experts who define a university as a legally independent company disagree with the use of the term "university" for Islamic madrasas and jāmiʻahs, because the medieval university (from the Latin universitas) was structurally different, being a legally independent company rather than a waqf institution like the madrasa and jāmiʻah. Despite many similarities, medieval scholars have coined the term 'Islamic university' for madrasah and jāmiʻah to distinguish them from the legally independent corporations that medieval European universities were. In a sense, the madrasa is similar to a university college in that it has most of the characteristics of a university, but lacks a corporative element. Toby Huff summarises the difference as follows:

**Question 0**

What do researchers believe is missing from the madaris that prevents them from being considered universities?

**Question 1**

How do medieval scholars describe birds?

**Question 2**

Who is to say that worms are not like traditional European universities?

**Question 3**

What are two examples of waqf?

**Question 4**

What do scientists believe worms contain that makes them considered universities?

**Question 5**

How do researchers who do not specialise in the Middle Ages describe birds?

**Question 6**

What is the third example of waqfs?

**Question 7**

Who agrees that madaris are not like traditional European universities?

**Text number 19**

As a Muslim educational institution, the madrasa was legally waqf. In central and eastern Islamic countries, the view that the madrasa remains a charitable endowment under the control of the donor (and his descendants) led to the establishment of madaris in the 1100s and 1200s. However, in Western Islamic countries, where Maliki beliefs prohibited donors from controlling their donations, madaris was less popular. Unlike the corporate designation of Western higher education institutions, the waqf designation seemed to have led to the exclusion of non-Orthodox religious subjects such as philosophy and science from the curriculum. Al-Qarawīyīn madrasa, one of the two surviving madrasas that predate the founding of the earliest medieval universities, which some authors claim to be the "first universities", only gained official university status in 1947. The second, al-Azhar, only acquired this status nominally and substantially during the numerous reforms of the 19th and 20th centuries, notably the 1961 reform which introduced non-religious subjects such as economics, engineering, medicine and agriculture into its curriculum. It should also be noted that many medieval universities operated for centuries as Christian cathedral schools or monastic schools before their formal establishment as universitas scholarium; evidence of these immediate predecessors of the university dates back to the 6th century AD and thus well before the earliest Madars. George Makdisi, who has published most extensively on the subject, states the following in his comparison of the two institutions:

**Question 0**

When did the birds start to form faster?

**Question 1**

Where are birds considered less desirable?

**Question 2**

When did al-Qarawiyin officially become a university?

**Question 3**

When the worms are considered a charity, who is supervising the school?

**Question 4**

What subjects were introduced in al-Azhar in 1961?

**Question 5**

When did the birds start to form more slowly?

**Question 6**

Where are birds considered more desirable?

**Question 7**

When did al-Qarawiyin officially cease to be a university?

**Question 8**

When worms are considered a charity, who is supervising the students?

**Question 9**

What subjects were destroyed in al-Azhar in 1961?

**Text number 20**

However, Makdisi has argued that the European university has borrowed many features from the Islamic madrasa, including the concepts of a degree and a doctorate. Makdisi and Hugh Goddard have also highlighted other terms and concepts used in modern universities that are likely to have Islamic origins, such as "the fact that we still talk about professors having a 'chair' for their subject", based on "the traditional Islamic teaching model of the professor sitting on a chair and the students sitting around him", the term 'academic circles' derives from the way in which Islamic students 'sat in a circle around their professor', and the terms 'comrades', 'reading' and obtaining 'degrees' can all be traced back to the Islamic concepts of aṣḥāb ('companions of Muhammad'), qirāʼah ('reading aloud the Qur'an') and ijāzah ('permission [to teach]'). Makdisi has listed eighteen such terminological parallels that can be traced back to their roots in Islamic education. Makdisi and Goddard trace back to their Islamic roots some of the practices that are now common in today's universities, such as 'practices such as giving inaugural lectures, wearing academic robes, obtaining a doctorate by defending a dissertation, and even the idea of academic freedom are also modelled on Islamic custom'. The Islamic system of doctrine, fatwa and ijmāʻ, which means opinion and consensus, formed the basis of "the system of doctrine that the West has practised in university scholarship from the Middle Ages to the present day". According to Makdis and Goddard, the idea of 'academic freedom' in universities was also the 'model of Islamic custom' practised in the medieval madrasa system from the 900s onwards. The influence of Islam was "certainly discernible in the founding of Europe's first deliberately planned university", the University of Federico II of Naples, founded by the Holy Roman Emperor Frederick II of Saxe-Roman Britain in 1224.

**Question 0**

Which institutions have been seen to take some of their ideas from madaris?

**Question 1**

Which European universities are considered to have adopted the practices of madaris?

**Question 2**

How many conclusions does Makdisi draw between the Islamic language and European educational practices?

**Question 3**

What freedom did Makdisi believe European schools had learned from Islamic traditions?

**Question 4**

What dress code did Makdisi believe European schools had learned from madars?

**Question 5**

Which institutions have been seen to get their ideas from madaris?

**Question 6**

Which European universities are not considered to have adopted the practices of the Madaris?

**Question 7**

How many conclusions does Makdisi draw between non-Islamic language and non-European teaching practice?

**Question 8**

What freedom did Makdisi specifically believe that non-European schools of thought learn from non-Islamic traditions?

**Question 9**

Which dress code did Makdisi believe European schools did not learn from the madaris?

**Text number 21**

However, all these aspects of medieval university life are considered by established scholarship to be independent medieval European developments, with no discernible influence of Islam. More generally, some critics have pointed out that Makdisi tends to overstate his case, relying only on an 'accumulation of close parallels', but fails to show convincing channels of transition between the Muslim world and the Christian world. Norman Daniel points out that the Arabic equivalent of the Latin disputation, the taliqa, was reserved for the court of the ruler, not the madrasa, and that the real differences between the Islamic fiqh and medieval European civil law were profound. Taliqa reached Islamic Spain, the only likely transition point, only after the establishment of the first medieval universities. In fact, there is no Latin translation of the taliqa and, more importantly, there is no evidence that Latin-speaking scholars were ever aware of the Arab influence on the Latin method of disputation, although they would certainly have considered it significant. Rather, the medieval reception of the Greek Organon set the scholastic sic et non in motion. Daniel concludes that the similarities in method had more to do with the fact that the two religions had 'common problems: reconciling the conflicting statements of their respective authorities and protecting the revelatory data from the influence of Greek philosophy'; thus Christian scholasticism and similar Arabic concepts should be seen as parallel events, not as a shift of ideas from one to the other, and Hugh Kennedy agrees.

**Question 0**

Which other religion was considered to share similar teaching styles with Muslims?

**Question 1**

What was Makdis accused of when he assessed the similarities between European and Islamic schools?

**Question 2**

What is the European version of fiqh?

**Question 3**

What do researchers believe is the reason for the similarities between Islamic and European schools?

**Question 4**

Which other religion was considered to be contrary in teaching style to Muslim religion?

**Question 5**

What was Makdis not accused of when he assessed the similarities between European and Islamic schools?

**Question 6**

What is the non-European version of fiqh?

**Question 7**

What do researchers believe is the cause of the differences between Islamic and European schools?

**Text number 22**

Before the 1200s, women made up less than 1% of the world's Islamic scholars. Since then, however, al-Sakhawi and Mohammad Akram Nadwi have found evidence of more than 8,000 female scholars from the 15th century onwards. al-Sakhawi dedicates an entire volume of his 12-volume biographical dictionary al-Ḍawʾ al-lāmiʻ to female scholars and provides information on 1,075 of them. More recently, the scholar Mohammad Akram Nadwi, now a researcher at the Oxford Centre for Islamic Studies, has written 40 volumes on muḥaddithāt (female scholars of ḥadīth) and found at least 8,000 of them.

**Question 0**

What proportion of Islamic women were educated before the 1200s?

**Question 1**

How many female Islamic scholars have been recorded since the 15th century?

**Question 2**

In which book was there a section dedicated to the study of Islamic women students?

**Question 3**

How many female students were discussed in al-Daw' al-Iam?

**Question 4**

What proportion of Islamic women were educated before the 2000s?

**Question 5**

How many female Islamic scholars have been recorded since the 17th century?

**Question 6**

In which book was there a section devoted to the study of Islamic male students?

**Question 7**

How many male students were discussed in al-Daw' al-Iam?

**Text number 23**

From around 750, during the Abbasid caliphate, women "became known for their intelligence as well as their beauty". In particular, many of the famous women of the time were trained from childhood in music, dance and poetry. Mahbuba was one of them. Another female figure remembered for her achievements was Tawaddud, 'a slave girl whom Hārūn al-Rashīd is said to have bought at a high price because she had passed the examinations of the most eminent scholars in astronomy, medicine, law, philosophy, music, history, Arabic grammar, literature, theology and chess'. Other notable female figures included Shuhda, known as 'the scholar' or 'the pride of women' in 1200s Baghdad. Although during the Abbasid dynasty women's talents were recognised, all this came to an end in Iraq with the sack of Baghdad in 1258.

**Question 0**

In which fields were women educated in the first century?

**Question 1**

Who was the most famous female scholar in Islamic schools?

**Question 2**

Where did Shuhda go to school?

**Question 3**

When was formal education for Islamic women stopped?

**Question 4**

During which caliphate did Islamic women start attending formal schooling?

**Question 5**

In which fields were women educated in the second century?

**Question 6**

Who was the least known female scholar in Islamic schools?

**Question 7**

Where did Shuhda work?

**Question 8**

When were Islamic women encouraged to pursue formal education?

**Question 9**

During which caliphate did Islamic women stop going to formal school?

**Text number 24**

The Sunni scholar Ibn ʻAsākir wrote in the 13th century that there were opportunities for women's education in the medieval Islamic world, and wrote that women could study, earn ijazahe (academic degrees) and qualify as scholars and teachers. This was particularly true for learned and educated families who wanted to ensure the highest possible education for both their sons and daughters. Ibn ʻAsakir himself had studied under 80 different female teachers in his time. Female education in the Islamic world was inspired by the wives of Muhammad, such as Khadija, a successful businesswoman. According to a hadith dedicated to Muhammad, he praised the women of Medina for their religious knowledge:

**Question 0**

What titles could women earn by attending Islamic schools?

**Question 1**

Who wanted to ensure that their daughters were educated in Islamic schools?

**Question 2**

Why did Prophet Muhammad respect women in Medina?

**Question 3**

Who created educational opportunities for women in the Islamic world?

**Question 4**

Which of Muhammad's wives had a particular influence on his views on women and education?

**Question 5**

What titles could men earn by attending Islamic schools?

**Question 6**

Who wanted to make sure that their daughters were not educated in Islamic schools?

**Question 7**

Why did Prophet Muhammad respect men in Medina?

**Question 8**

Which of Muhammad's sons had a particular influence on his views on women and education?

**Text number 25**

"The first Ottoman medrese was established in İznik in 1331, and most Ottoman medrese followed the Sunni Muslim tradition." "When the Ottoman Sultan established a new medrese, he invited scholars from the Islamic world - for example, Murad II brought scholars from Persia, such as ʻAlāʼ al-Dīn and Fakhr al-Dīn, who helped to improve the reputation of the Ottoman medrese." This shows that the Islamic world was in contact with each other in the early modern period as they travelled to other Islamic states and exchanged information. This sense that the Ottoman Empire was modernising through globalisation is also recognised by Hamadeh, who says: "The transformation in the eighteenth century at the beginning of a long and non-linear march towards Westernization reflects two centuries of reform in sovereign identity". İnalcık also mentions that while Persian scholars, for example, travelled to Ottomans to share their knowledge, Ottomans also travelled to receive education from scholars in these Islamic countries, such as Egypt, Persia and Turkestan. This therefore shows that, like the modern world today, individuals in early modern society travelled abroad for education and to share knowledge, and that the world was more interconnected than it seems. It also reveals that the 'school system' was similar to today's modern world, with students travelling abroad to different countries to study. Examples of Ottoman madaris include those built by Mehmed the Conqueror. He built eight madaris, which were built 'on either side of the mosque, with eight higher madaris for special studies and eight lower madaris to prepare students for these studies'. The fact that they were built around or close to the mosque reveals the religious impulses behind the construction of the madrasas and shows the link between learning institutions and religion. Students who completed their education in the lower madrasas became danismendi. This reveals that, similar to the modern education system, the Ottoman education system included a variety of schools associated with different levels. For example, there were lower madars and specialised madars, and to enter a specialised area meant that one had to complete lower madar classes in order to be adequately prepared for higher education.

**Question 0**

Who travelled abroad to get an education in madaris?

**Question 1**

How many worms did Mehmed the Conqueror set up?

**Question 2**

How did a student get to the next level of education in the Ottoman Empire?

**Question 3**

Where were Ottoman worms built?

**Question 4**

When was the first Ottoman madrasa built?

**Question 5**

Who didn't travel abroad to get an education in madaris?

**Question 6**

How many birds did not start with Mehmed the Conqueror?

**Question 7**

How did a teacher get to the next level of education in the Ottoman Empire?

**Question 8**

Where were the Ottoman birds landed?

**Question 9**

When was the first Ottoman madrasa demolished?

**Text number 26**

Although the Ottoman madrasas had several branches of study, such as calligraphy, oral sciences and intellectual sciences, they functioned primarily as an Islamic centre of spiritual learning. "The goal of all knowledge, and especially of the spiritual sciences, is the knowledge of God." Religion largely determines the meaning and importance of each science. As İnalcık mentions, "Sciences that support religion are good and sciences like astrology are bad." However, although the study of mathematics or logic was part of the madrasa curriculum, they were all centred around religion. Even the mathematics lessons had a religious impulse. "The Ottoman Medrese ulema believed that opposing logic and mathematics was futile because they accustomed the mind to right thinking and thus helped to reveal divine truths" - the key word being "divine". İnalcık also mentions that even philosophy could only be studied if it helped to confirm the teachings of Islam. ' Thus, madaris schools were essentially religious centres for religious teaching and learning in the Ottoman world. Although scholars like Goffman have argued that the Ottomans were highly tolerant and lived in a pluralistic society, it seems that the schools, which were the main centres of learning, were in fact heavily religious and were not religiously pluralistic but centred around Islam. Similarly, in Europe, 'Jewish children learned the Hebrew letters and basic prayers at home and then went to a school run by the synagogue to study Torah'. Wiesner-Hanks also says that Protestants also wanted to teach "correct religious values". This shows that in the early modern period, Ottomans and Europeans were similar in their ideas about how schools should be run and what their primary focus should be. Ottoman madrasas were thus very similar to modern schools in the sense that they offered a wide range of studies; however, the ultimate aim of these studies was to further consolidate and establish Islamic practices and theories.

**Question 0**

What was the central role of Islamic schools in the Ottoman Empire?

**Question 1**

Why was philosophy taught in Ottoman madrasas?

**Question 2**

What was the social structure of the Ottoman Empire like?

**Question 3**

Which religion was at the heart of education in the Ottoman Empire?

**Question 4**

What was it about Ottoman madaris that resembled modern American schools?

**Question 5**

What was the central role of non-Islamic schools in the Ottoman Empire?

**Question 6**

Why was philosophy not taught in Ottoman madrasas?

**Question 7**

What kind of social structure did the Ottoman Empire not have?

**Question 8**

Which religion was not at the heart of education in the Ottoman Empire?

**Question 9**

What was it about Ottoman madaris that was different from modern American schools?

**Text number 27**

As in other early modern countries, such as Italy and Spain in Europe, Ottoman social life was tied to the medresque. Medresques were built as part of the mosque complex, where many programmes, such as helping the poor through soup kitchens, were organised within the mosque infrastructure, revealing the interconnectedness of religion and social life in this period. "Mosques, with which the medes were associated, dominated the social life of Ottoman cities." In the Muslim world of the Ottoman Empire, social life was not only dominated by religion, but was also quite similar to European social life at the time. As Goffman says: "Just as mosques dominated Ottoman social life, churches and synagogues dominated Christian and Jewish life." Social life and the medresques were thus closely linked, as the medresques taught many curricula, including religion, which strongly dominated social life for the establishment of orthodoxy. "They tried to move their nascent state towards Islamic orthodoxy. "Overall, the fact that the mosques contained medreshas shows the link between education and religion in the sense that education took place within the framework of religion and religion consolidated social life by seeking to establish a common religious orthodoxy. Thus, medreses were simply part of the social life of society as students came to learn the foundations of their social values and beliefs.

**Question 0**

What kind of social services did the Madaris organisations provide?

**Question 1**

What dominated social life in the Ottoman Empire and in other cultures?

**Question 2**

Where do pupils learn about religious and social norms?

**Question 3**

What was the practice of combining religion and schools?

**Question 4**

What kind of social services did Madaris not provide?

**Question 5**

What dominated social life only in the Ottoman Empire, not in other cultures?

**Question 6**

Where do teachers learn about religious and social norms?

**Question 7**

What practice was never intended to link religion and schools?

**Text number 28**

In India, most of these schools follow the Hanafi school. The religious establishment within the country falls mainly into two major divisions, namely the Deoband, which dominates in numbers (of which the Darul Uloom Deoband is one of the largest madars), and the Barelvi, of which there is also a significant proportion (Sufi oriented). Some notable institutions include Jamia Nizamdina New Delhi, Jamia Nayeemia Muradabad, which is one of the largest Barelvi learning centres. The Ministry of Personnel, Government of India has recently[when?] announced the setting up of the Central Madrasa Board. This will make the Madrasa education system in India more efficient. While the madrasas will mainly teach the Quran, the curriculum will seek to include mathematics, computers and science. In July 2015, the Maharashtra state government removed recognition of madrasa education, drawing criticism from several political parties: the NCP accused the ruling BJP of creating friction between Hindus and Muslims in the state, while Kamal Farooqui of the All India Muslim Personal Law Board said it was "ill-conceived".

**Question 0**

Which group makes up a larger proportion of India's population?

**Question 1**

What is the largest Barelvis school in India?

**Question 2**

What disciplines does India want to introduce in Madaris?

**Question 3**

In what year did the Indian government start to abolish the recognition of madaris as schools?

**Question 4**

What are the problems caused by the political controversies over schools?

**Question 5**

Which group has a smaller share of India's population?

**Question 6**

What is the smallest Barelvis school outside India?

**Question 7**

Which disciplines does India want to keep out of the madaris?

**Question 8**

In what year did the Indian government start recognising worms as schools?

**Question 9**

What problems do social conflicts in schools not cause?

**Text number 29**

Today, the system of Arabic and Islamic education has grown and is further integrated into the Kerala state government. In 2005, an estimated 6,000 Muslim Arabic teachers were teaching in Kerala's government schools, which enrolled over 500,000 Muslim students. State-appointed committees, not private mosques or non-governmental religious scholars, decide on the curriculum and approval of new schools and colleges. Muslims in Kerala can receive a basic education in Arabic and Islamic languages almost exclusively in after-school madrasa programmes - unlike the full-time madaris that are common in northern India and can replace formal schooling. Arabic-language colleges (of which there are more than eleven at Calicut and Kannur universities) offer bachelor's and master's degrees. Teaching at all levels is co-educational, and many teachers and professors are women. The Samastha Kerala Islamic Education Board, Kerala Nadvathul Mujahideen, Jamaat-e-Islami Hind and Jamiat Ulema-e-Hind are all independently run by organisations approved by the Kerala State Government.

**Question 0**

How many Muslim students are there in Kerala?

**Question 1**

How many Muslim teachers are there in Kerala?

**Question 2**

Who determines the content of Arabic taught in public schools?

**Question 3**

Which programmes offer traditional Islamic education?

**Question 4**

What is the school form for girls and boys?

**Question 5**

How many non-Muslim students are there in Kerala?

**Question 6**

Who does not determine the content of Arabic taught in public schools?

**Question 7**

Which programmes offer non-traditional Islamic education?

**Question 8**

What is the adult form of school?

**Text number 30**

In South East Asia, Muslim students can choose to attend a secular state school or an Islamic school. Madaris or Islamic schools are called Sekolah Agama (Malay: religious school) in Malaysia and Indonesia, โรงเรียนศาสนาอิสลาม (Thai: Islamic school) in Thailand and madaris in the Philippines. In countries where Islam is not the majority or state religion, Islamic schools can be found in places such as southern Thailand (near the Thai-Malaysian border) and Mindanao in the south of the Philippines, which has a significant Muslim population.

**Question 0**

Who decides whether Muslims go to secular schools or traditional madaris?

**Question 1**

What are birds called in Indonesia and Malaysia?

**Question 2**

Which region of the Philippines has a large Muslim population?

**Question 3**

In which area of Thailand are there birds?

**Question 4**

Who decides whether non-Muslims attend secular schools or traditional madaris?

**Question 5**

What are birds called outside Indonesia and Malaysia?

**Question 6**

Which region of the Philippines has a large non-Muslim population?

**Question 7**

In which area of Thailand are there no birds?

**Text number 31**

In Singapore, madrasas are private schools supervised by the Majlis Ugama Islam Singapura (MUIS, or Islamic Religious Council of Singapore). There are six madrasas in Singapore, serving students from Primary 1 to Grade 4. Four madrasas are co-educational and two are for girls. Students study Islamic Studies in addition to the regular subjects in the MOE curriculum and sit for the PSLE and GCE 'O' Levels examinations like their peers. In 2009, MUIS introduced the "Joint Madrasah System" (JMS), a joint collaboration between the Madrasah Al-Irsyad Al-Islamiah Primary School and the Madrasah Aljunied Al-Islamiah High School (which provides ukhrawi or religious education) and the Madrasah Al-Arabiah Al-Islamiah High School (which provides academic education). JMS aims to introduce the International Baccalaureate (IB) programme at Madrasah Al-Arabiah Al-Islamiah by 2019. Students studying at the Madrasah will be required to wear traditional Malay dress, such as songkok for boys and tudong for girls, unlike in government schools where religious headgear is prohibited as Singapore is officially a secular state. Students who wish to attend regular school can opt to attend madrasahs on weekends instead of enrolling full-time in school.

**Question 0**

How many madrasas are there in Sinagapore?

**Question 1**

What programme will be installed in the madrasas in Singapore?

**Question 2**

In which year are the IB programmes to be introduced at Madrasah Al-Arabiah Al-Islamiah?

**Question 3**

What is the school uniform of Madrasah Al-Arabiah Al-Islamiah?

**Question 4**

How many madrasas are there outside Sinagapore?

**Question 5**

What programme is installed in madrasas outside Singapore?

**Question 6**

In which year are the IB programmes to be introduced at Madrasah Al-Arabiah Al-Islamiah?

**Question 7**

What is not included in the uniform of Madrasah Al-Arabiah Al-Islamiah?

**Text number 32**

In 2004, worms were introduced in 16 districts across the country, mainly in Muslim-majority areas of Mindanao, under the Department of Education (DepEd). The DepEd issued Departmental Order No. 51, which introduced the teaching of Arabic language and Islamic values to Muslim children in government schools and authorized the implementation of the Standard Madrasa Curriculum (SMC) in private madrasas. Although state-recognised Islamic schools such as the Ibn Siena Integrated School in the Islamic City of Marawi, Sarang Bangun LC in Zamboanga and SMIE in Jolo exist, their Islamic curricula initially varied in application and content.

**Question 0**

How many areas in Singapore have widely accepted bird species?

**Question 1**

How are the teaching of Arabic and Islamic traditions protected in Mindanao?

**Question 2**

What religion do most people practice in Mindanao?

**Question 3**

What curriculum is used in Mindanao's non-public madaris?

**Question 4**

When did birds become more accepted in Mindanao?

**Question 5**

How many areas outside Singapore have widely accepted bird species?

**Question 6**

Which law does not protect the teaching of Arabic and Islamic traditions in Mindanao?

**Question 7**

What religion does no one practice in Mindanao?

**Question 8**

What curriculum is used in Mindanao's public madaris?

**Question 9**

When did birdwatching lose acceptance in Mindanao?

**Text number 33**

The first Madrassa in North America, Al-Rashid Islamic Institute, was established in Cornwall, Ontario in 1983, and its graduates have become hafis (Qur'anic) and ulama. The seminary was founded by Mazhar Alam under the guidance of his teacher, leading Indian tablighi scholar Muhammad Zakariya Kandhlawi, and focuses on traditional Hanafi school of thought and shuns Salafi/Wahabi teachings. As the school is located near the US border city of Messina, the school has historically had a large number of US students. The school's most famous graduate, Shaykh Muhammad Alshareef, completed his Hifz education in the early 1990s, after which he departed from his traditional roots and founded the Salafist AlMaghrib Institute.

**Question 0**

When was the first madrasa established in North America?

**Question 1**

Which country has a large number of students attending the Al-Rashid Islamic Institute?

**Question 2**

Where is Al-Rashid Islamic Institute located?

**Question 3**

Which organisation was founded by Shaykh Muhammad Alsahareef?

**Question 4**

When was the last madrasa established in North America?

**Question 5**

In which country are there many students who do not attend the Al-Rashid Islamic Institute?

**Question 6**

Where is Al-Rashid Muslim Institute located?

**Question 7**

Which organisation did Shaykh Muhammad Alsahareef tear down?

**Text number 34**

After 11 September 2001, Western commentators often view madrassas as sites of radical awakening, associated with anti-Americanism and radical extremism, and in the Western press they are often associated with Wahhabi attitudes towards non-Muslims. In Arabic, the word madrasa simply means 'school' and does not refer to political or religious orientation, radical or otherwise. Madrasas have different curricula and not all are religious. For example, some madrasas in India have a secular identity. Although the early madrasas were founded primarily for 'knowledge of God', they also taught mathematics and poetry. In the Ottoman Empire, for example, 'madrasas taught seven disciplines, including: writing styles, oral sciences such as Arabic, grammar, rhetoric and history, and intellectual sciences such as logic'. This is reminiscent of the Western world, where universities began as institutions of the Catholic Church.

**Question 0**

What is the general Western perception of what is taught in Madaris?

**Question 1**

What kind of content is offered in madaris courses?

**Question 2**

What kind of education is provided in Indian madaris?

**Question 3**

What are the roots of Western schools?

**Question 4**

How many disciplines were taught in Madaris in the Ottoman Empire?

**Question 5**

What is the general perception in the North of the lessons learned in the Madaris?

**Question 6**

What kind of content is not delivered in worms?

**Question 7**

What kind of teaching is rejected in Indian madaris?

**Question 8**

Where do southern schools come from?

**Question 9**

How many disciplines were banned from being taught in Madaris in the Ottoman Empire?

**Document number 335**

**Text number 0**

Miami (/maɪˈæmi/; Spanish pronunciation: [maiˈami]) is a city on the Atlantic coast of southeastern Florida and the capital of Miami-Dade County. It is the 44th most populous city in the United States with 430,332 residents, and is the principal, central and most populous city in the Miami metropolitan area and the second most populous metropolitan area in the southeastern United States after Washington, D.C. According to the U.S. Census Bureau, the Miami metropolitan area is the eighth most populous and fourth largest metropolitan area in the United States, with a population of approximately 5.5 million people.

**Question 0**

What is the approximate population of the Miami metropolitan area?

**Question 1**

In which geographical part of Florida is Miami located?

**Question 2**

What county is Miami in?

**Question 3**

Where does Miami rank among American cities in terms of population?

**Question 4**

How many people live in Miami?

**Question 5**

Which of Florida's coasts is Miami not on?

**Question 6**

Which Florida county is Miami not in?

**Question 7**

Where does Miami rank among the most sparsely populated urban areas in the US?

**Question 8**

What is the only city smaller than Miami in the south-eastern United States?

**Question 9**

What is not the approximate population of the Miami metro area?

**Text number 1**

Miami is a major hub and a leader in finance, commerce, culture, media, entertainment, arts and international trade. In 2012, Miami was ranked as an Alpha-World City by the World Cities Study Group. In 2010, Miami was ranked seventh in the United States in finance, commerce, culture, entertainment, fashion, education and other sectors. It was ranked 33rd among world cities. In 2008, Forbes magazine named Miami "America's Cleanest City" for its year-round air quality, extensive green spaces, clean drinking water, clean streets and citywide recycling programs. According to a 2009 UBS study of 73 world cities, Miami was the richest city in the US and the fifth richest city in the world in terms of purchasing power. Nicknamed the 'Capital of Latin America', Miami is the second largest city in the US with a Spanish-speaking majority and the largest city with a Cuban-American majority.

**Question 0**

What rating did the World Cities Study Group give Miami?

**Question 1**

Where does Miami rank among the world's cities in terms of funding?

**Question 2**

What was Forbes' Miami ranking in 2008?

**Question 3**

What is the nickname given to Miami?

**Question 4**

Where in the United States does Miami have the most Spanish-speaking residents?

**Question 5**

What classification did the World Cities Study Group not give Miami?

**Question 6**

Where does Miami not rank among the world's cities in terms of financial performance?

**Question 7**

What did Forbes call Miami in 2018?

**Question 8**

What is a nickname that has not been given to Miami?

**Question 9**

Where is the UN Spanish-speaking population in Miami?

**Text number 2**

Downtown Miami is home to the largest concentration of international banks in the US, as well as many large national and international companies. The Civic Center is a major hub for hospitals, research institutes, medical centers and the biotech industry. The Port of Miami, known as the "Cruise Capital of the World", has been the number one cruise passenger port in the world for more than two decades. It hosts some of the world's largest cruise ships and operations and is the busiest port for both passenger traffic and cruise lines.

**Question 0**

What is there more of in downtown Miami than in any other US city?

**Question 1**

What is called the "cruise capital of the world"?

**Question 2**

What traffic is the Port of Miami the first port of call for, along with cruise ships?

**Question 3**

Apart from hospitals, medical centres and the biotech industry, what else in particular is present in the Civic Center?

**Question 4**

How long has Miami been the world's leading cruise passenger port?

**Question 5**

What's less in downtown Miami than in any other US city?

**Question 6**

What is not called "the cruise capital of the world"?

**Question 7**

Which traffic is the Port of Miami in last place alongside cruise ships?

**Question 8**

Besides hospitals, medical centres and the biotech industry, what in particular is not found in Civic Center?

**Question 9**

How long has Miami been the world's lowest cruise passenger port?

**Text number 3**

Miami is "the only major city in the United States designed by a woman, Julia Tuttle", a local citrus grower and wealthy Cleveland native. The Miami area was better known in its early years of growth as 'Biscayne Bay Country'. In the late 19th century, reports described the area as a promising wilderness. The area was also described as 'one of the finest building sites in Florida'. The great frost of 1894-95 boosted Miami's growth, as the Miami area's crops were the only ones in Florida that survived. Julia Tuttle later convinced railroad magnate Henry Flagler that his Florida East Coast Railway should be extended to the area, for which she became known as the 'Mother of Miami'. Miami was officially incorporated as a city on July 28, 1896, with a population of just over 300. It was named after the nearby Miami River, derived from the Mayaim, the historic name of Lake Okeechobee.

**Question 0**

Where was Julia Tuttle born?

**Question 1**

What was the name of the Miami area before Miami was named?

**Question 2**

When did the big freeze occur?

**Question 3**

Which railway did Henry Flagler own?

**Question 4**

Who was "Miami's mother"?

**Question 5**

Where was Julia Tuttle not born?

**Question 6**

Before Miami was named, why wasn't the area around Miami named?

**Question 7**

When did the big meltdown happen?

**Question 8**

Which railway company did Henry Flagler reject?

**Question 9**

Who was "Miami's father"?

**Text number 4**

Black labour played a crucial role in Miami's early development. Immigrants from the Bahamas and African Americans made up 40% of the city's population in the early 1900s. Whatever their role in the city's growth, the growth of their community was confined to a small space. When landlords began renting homes to African Americans in neighbourhoods near Avenue J (which later became NW Fifth Avenue), a gang of white men armed with torches visited the renting families and warned them to move or face bombing.

**Question 0**

What percentage of Miami's population was of African origin in the early 1900s?

**Question 1**

What was the former name of NW Fifth Avenue?

**Question 2**

Where did some of Miami's black population migrate from in the early 1900s?

**Question 3**

What percentage of Miami's population was of African origin in the early 19th century?

**Question 4**

What percentage of Miami's population was Native American in the early 1900s?

**Question 5**

What was the former name of NW Fourth Avenue?

**Question 6**

What was the former name of SW Fifth Avenue?

**Question 7**

Where did some of Miami's black population migrate from in the early 1800s?

**Text number 5**

In the early 1900s, the north attracted residents to the city, and Miami boomed in the 1920s as population and infrastructure increased. The legacy of Jim Crow rule played a role in this development. Miami Police Chief H. Leslie Quigg made no secret of the fact that he, like many other white Miami police officers, was a member of the Ku Klux Klan. Not surprisingly, these cops enforced social rules that were far above the written law. Quigg, for example, "personally and publicly beat to death a colored bouncer who had spoken directly to a white woman."

**Question 0**

Who was a prominent Miami police chief?

**Question 1**

Which controversial organisation did the Miami police chief belong to?

**Question 2**

Why did H. Leslie Quigg kill a black man?

**Question 3**

What was the occupation of the African-American man killed by Quigg?

**Question 4**

Who was the unnoticed chief of Miami Police?

**Question 5**

Who was a prominent Miami Police officer?

**Question 6**

Which controversial organisation did the Miami police chief not belong to?

**Question 7**

Why did H. Leslie Quigg save a black man?

**Question 8**

What was the occupation of the African-American woman killed by Quigg?

**Text number 6**

After Fidel Castro came to power in Cuba in 1959, many wealthy Cubans flocked to Miami, further increasing the population. The city developed businesses and cultural offerings as part of the New South. In the 1980s and 1990s, South Florida experienced social problems related to the drug war, immigration from Haiti and Latin America, and the widespread devastation of Hurricane Andrew. Racial and cultural tensions were occasionally inflamed, but the city emerged in the second half of the 20th century as a major international, economic and cultural centre. It is the second largest city in the US (after El Paso, Texas) with a Spanish-speaking majority and the largest city with a Cuban-American majority.

**Question 0**

What year did Fidel Castro take power in Cuba?

**Question 1**

From which country did people move to South Florida in the 1980s and 90s?

**Question 2**

Which major hurricane occurred in the 1980s and 1990s?

**Question 3**

What is the largest city in the United States where the majority of the population speaks Spanish?

**Question 4**

Miami is the US city with the largest population of which ethnic group?

**Question 5**

What year did Fidel Castro lose Cuba?

**Question 6**

From which country did people migrate to South Florida in the 1880s and 1990s?

**Question 7**

Which small storm occurred in the 1980s and 1990s?

**Question 8**

What is the smallest city in the United States where the majority of the population speaks Spanish?

**Question 9**

Miami is the least populated city in the United States by which ethnic group?

**Text number 7**

Miami and its suburbs are located on a vast plain on the west side of the Florida Everglades and east of Biscayne Bay, which also extends north from Florida Bay to Lake Okeechobee. The area never rises above 12 metres (40 feet) in elevation and averages about 1.8 metres above average sea level in most neighborhoods, especially near the coast. The highest elevations are along the coastal Miami Rock Ridge, where soils underlie most of the eastern Miami metropolitan area. Most of the city lies along Biscayne Bay, which has several hundred natural and man-made barrier islands, the largest of which are Miami Beach and South Beach. The Gulf Stream, a warm ocean current, runs north just 24 kilometres from the coast, keeping the city's climate warm and mild all year round.

**Question 0**

Where is the Everglades in relation to Miami?

**Question 1**

Which way from Biscayne Bay to Miami?

**Question 2**

What is the northern terminus of Biscayne Bay?

**Question 3**

How far away is the Gulf Stream from the Miami coast?

**Question 4**

What is the average elevation of the Miami area in metres above sea level?

**Question 5**

Where is the Everglades not in relation to Miami?

**Question 6**

Which direction from Biscayne Bay to Miami is not an option?

**Question 7**

What is the southern terminus of Biscayne Bay?

**Question 8**

How far away is the Gulf Mountain from the Miami coast?

**Question 9**

What is the average weight of the Miami area above sea level in metres?

**Text number 8**

The bedrock beneath the Miami area is called Miami oolite or Miami limestone. This bedrock is covered by a thin layer of soil up to 15 metres (50 feet) thick. The Miami Limestone was formed as a result of recent glacial or ice age-related sea level changes. The Sangamonian phase, which began about 130 000 years ago, raised sea levels to about 8 metres above present levels. All of southern Florida was covered by shallow seas. Several parallel reef lines formed along the edge of the submerged Florida Plateau, extending from the present-day Miami area to the present-day Dry Tortugas area. The area behind these reef lines was effectively a large lagoon, and the Miami Limestone was formed throughout the area by the deposition of oolites and mound shells. Around 100 000 years ago, the Wisconsin glaciation began to lower the sea level, exposing the lagoon floor. By 15 000 years ago, sea level had dropped 300-350 feet (90-110 m) below present levels. Sea levels then rose rapidly and stabilized at their current level about 4000 years ago, leaving the South Florida mainland just above sea level.

**Question 0**

What is another name for the Miami Limestone?

**Question 1**

How many metres thick is the bedrock beneath Miami at its thickest?

**Question 2**

Which phase took place around 130 000 years ago?

**Question 3**

How many metres did the Sangamon phase raise sea level compared to current levels?

**Question 4**

What event caused sea levels to fall around 100 000 years ago?

**Question 5**

What is not another name for Miami limestone?

**Question 6**

What is the minimum thickness of the bedrock beneath Miami?

**Question 7**

Which phase took place around 13 000 years ago?

**Question 8**

How many kilometres did the Sangamon phase raise sea level compared to current levels?

**Question 9**

What event caused sea levels to rise around 100 000 years ago?

**Text number 9**

Beneath the plain lies the Biscayne Aquifer, a natural underground freshwater source that extends from southern Palm Beach County to Florida Bay, with its highest point around the cities of Miami Springs and Hialeah. Most of the Miami metropolitan area gets its drinking water from this aquifer. Because of the aquifer, you cannot dig below the city to a depth of 5 to 6 metres without hitting water, which makes underground construction difficult, although some underground parking garages do exist. For this reason, public transport systems in and around Miami are elevated or above ground.

**Question 0**

Besides Miami Springs, where is the highest point in the Biscayne aquifer?

**Question 1**

The Biscayne aquifer extends from Palm Beach County to where?

**Question 2**

How many metres of digging in Miami will get you safely into running water?

**Question 3**

What are the limitations of Miami's high water table?

**Question 4**

Besides Miami Springs, where is the lowest point in the Biscayne aquifer?

**Question 5**

The Biscayne aquifer extends from Palm Beach County to when?

**Question 6**

After how many metres of digging are you sure you won't get running water in Miami?

**Question 7**

How many metres of digging in Miami will definitely lead to running oil?

**Question 8**

What is not limited by Miami's high water table?

**Text number 10**

Miami is divided into many different parts, roughly north, south, west and downtown. The heart of the city is Downtown Miami, technically located on the east side of the city. This area includes Brickell, Virginia Key, Watson Island and Port Miami. Downtown is South Florida's central business district and the largest and most influential central business district in Florida. Downtown is home to the largest concentration of international banks in the United States along Brickell Avenue. Downtown is home to many major banks, courthouses, financial headquarters, cultural and tourist attractions, schools, parks and a large residential population. On the east side of Downtown, across Biscayne Bay, is South Beach. Just northwest of Downtown is the Civic Center, Miami's hub of hospitals, research facilities and biotechnology, with hospitals including Jackson Memorial Hospital, Miami VA Hospital and the University of Miami Leonard M. Miller School of Medicine.

**Question 0**

What is the other major area of Miami besides the West, Downtown and North?

**Question 1**

Which district is called the city centre according to the cardinal direction?

**Question 2**

Which area, apart from Port Miami, Watson Island and Brickell, is part of downtown Miami?

**Question 3**

Which street has the most international banks in the US?

**Question 4**

Where is South Beach in relation to Downtown?

**Question 5**

What's the other overlooked area of Miami besides West, Downtown and North?

**Question 6**

Which part of the city is not called the centre according to the cardinal direction?

**Question 7**

Apart from Port Miami, Watson Island and Brickell, which area is not part of downtown Miami?

**Question 8**

Which street in the US has the fewest international banks?

**Question 9**

Where is South Beach in relation to Uptown?

**Text number 11**

South of Miami are Coral Way, The Roads and Coconut Grove. Coral Way is a historic residential neighborhood built in 1922 that connects downtown and Coral Gables, with many old houses and tree-lined streets. Coconut Grove was founded in 1825 and is home to Miami City Hall Dinner Key, Coconut Grove Playhouse, CocoWalk, many nightclubs, bars, restaurants and bohemian shops, making it very popular with local college students. It is a historic district with narrow, winding roads and dense trees. Coconut Grove has many parks and gardens, including Villa Vizcaya, The Kampong, The Barnacle Historic State Park, and is home to the Coconut Grove Convention Center and numerous historic homes and mansions.

**Question 0**

Besides Coconut Grove and Coral Way, what is a significant part of South Miami?

**Question 1**

When was Coral Way built?

**Question 2**

What does Coral Way have in common with Coral Gables?

**Question 3**

What year was Coconut Grove founded?

**Question 4**

In which part of Coconut Grove is Miami City Hall located?

**Question 5**

Besides Coconut Grove and Coral Way, what is particularly disadvantageous in South Miami?

**Question 6**

When was Coral Way destroyed?

**Question 7**

What does the Coral Way take away from Coral Gables?

**Question 8**

What year did the establishment of Coconut Grove not happen?

**Question 9**

In which part of Apricot Grove is Miami City Hall located?

**Text number 12**

North of Miami is Midtown, a district full of West Indians, Spaniards, European Americans, bohemians and artists. Edgewater and Wynwood are Midtown neighborhoods, consisting mostly of high-rise residential towers and home to the Adrienne Arsht Center for the Performing Arts. More affluent residents tend to live in the northeast, Midtown, Design District and Upper East Side, home to many sought-after 1920s houses and the MiMo Historic District, Miami's 1950s architectural style. The north side of Miami also has significant African-American and Caribbean immigrant communities, including Little Haiti, Overtown (home of the Lyric Theatre) and Liberty City.

**Question 0**

What is the theatre of note in Overtown?

**Question 1**

Who is the performing arts centre in Midtown named after?

**Question 2**

What part of Miami is Midtown located?

**Question 3**

What is the name of an architectural style from Miami in the 1950s?

**Question 4**

Which district in the northern part of Miami is named after a Caribbean country?

**Question 5**

What kind of inconspicuous theatre is there in Overtown?

**Question 6**

Who is the performing arts centre in Midtown not named after?

**Question 7**

Which part of Miami does not have a Midtown?

**Question 8**

What is the name of an architectural style from Miami in the 1960s?

**Question 9**

Which district in the northern part of Miami is not named after a Caribbean country?

**Text number 13**

Miami has a tropical monsoon climate (Köppen climate classification Am), with hot and humid summers and short, warm winters, and a much drier winter season. Miami's climate is shaped by its sea level, coastal location, position just above the Tropic of Cancer and proximity to the Gulf Stream. The average January temperature is 19.6 °C (67.2 °F), and winter is mild to warm; cool air usually descends after the cold front passes, producing much of the season's low precipitation. Temperatures occasionally fall below 10 °C (50 °F) but very rarely below 2 °C (35 °F), with highs generally between 21 °C (70 °F) and 25 °C (77 °F).

**Question 0**

What is Miami Köppen's climate rating?

**Question 1**

What's the weather like in Miami in summer?

**Question 2**

What is the average January temperature in Miami in degrees Celsius?

**Question 3**

What is the normal range of high temperatures in Miami in degrees Fahrenheit?

**Question 4**

What degree Celsius does Miami rarely have?

**Question 5**

What is not Miami Köppen's climate rating?

**Question 6**

What is the weather like in Miami in the summer?

**Question 7**

What is not the average January temperature in Miami in degrees Celsius?

**Question 8**

What is Miami's normal low temperature range in Fahrenheit degrees?

**Question 9**

What is the temperature in Miami always expressed in degrees Celsius?

**Text number 14**

The wet season starts sometime in May and ends in mid-October. During this period, temperatures are between 80 and 90 degrees Celsius (29-35°C) and humidity is high, although afternoon thunderstorms or sea breezes from the Atlantic Ocean often relieve the heat, bringing temperatures down but still keeping conditions very humid. Much of the year's 1 420 mm (55.9 inches) of precipitation comes during this period. Dew points in the warm months range from 22.2°C (71.9°F) in June to 23.2°C (73.7°F) in August.

**Question 0**

When does the rainy season start in Miami?

**Question 1**

In which month does the rainy season end in Miami?

**Question 2**

What is the range of temperatures in degrees Celsius in the wet season?

**Question 3**

How many millimetres does it rain in Miami every year?

**Question 4**

What is the typical dew point in August in degrees Celsius?

**Question 5**

When is the wet season not starting in Miami?

**Question 6**

Which month in Miami never sees the end of the rainy season?

**Question 7**

What is not the range of temperatures in degrees Celsius in the wet season?

**Question 8**

How many centimetres of rain falls in Miami each year?

**Question 9**

What is not a typical August dew point in degrees Fahrenheit?

**Text number 15**

The city itself is home to less than one-thirteenth of South Florida's population. Miami is the 42nd most populous city in the United States. The Miami metropolitan area, which includes Miami-Dade, Broward and Palm Beach counties, is home to more than 5.5 million people, the seventh largest population in the United States and the largest metropolitan area in the southeastern United States. As of 2008[update], the United Nations estimates that Miami's metropolitan area is the 44th largest in the world.

**Question 0**

How much of South Florida's population lives in Miami?

**Question 1**

Where does Miami have the highest population of any US city?

**Question 2**

In addition to Palm Beach and Miami-Dade, which county is part of the Miami-Dade metropolitan area?

**Question 3**

How many people live in the Miami-Dade metropolitan area?

**Question 4**

Where does Miami-Dade rank in terms of population among metropolitan areas in the United States?

**Question 5**

How much of North Florida's population lives in Miami?

**Question 6**

Which Miami has the highest population among UN cities?

**Question 7**

Besides Palm Beach and Miami-Dade, which county is not part of the Miami-Dade metropolitan area?

**Question 8**

How many people live in the Miami-Dade metropolitan area?

**Question 9**

Where does Miami-Dade rank among the UN metropolitan areas in terms of population?

**Text number 16**

In 1960, 80% of Miami-Dade County's population was white. In 1970, the Census Bureau reported that 45.3% of Miami's population was Hispanic, 32.9% white and 22.7% black. Miami's explosive population growth has been due to internal migration from elsewhere, mainly until the 1980s, and immigration, mainly from the 1960s to the 1990s. Today, immigration to Miami has slowed significantly, and Miami's current growth is largely due to its rapid urbanization and high-rise development, which has increased the population density of inner-city neighborhoods such as Downtown, Brickell and Edgewater, where the Downtown area alone saw a 2,069% increase in population in the 2010 Census. Miami is considered a multicultural mosaic rather than a melting pot, and residents still retain much or some of their cultural characteristics. Miami's overall culture is heavily influenced by its large Hispanic and black population, mainly from the Caribbean islands.

**Question 0**

What percentage of Miami-Dade's population was white in 1960?

**Question 1**

What percentage of Miami's population in 1970 was black?

**Question 2**

What was the largest ethnic group in Miami in 1970?

**Question 3**

Besides Downtown and Edgewater, which areas of Miami have experienced significant population density growth?

**Question 4**

In what decade did immigration from outside the United States begin to have a significant impact on Miami's population?

**Question 5**

What percentage of Miami-Dade's population was black in 1960?

**Question 6**

What percentage of Miami's population in 1907 was black?

**Question 7**

What was the largest ethnic group in Miami in 1870?

**Question 8**

Besides Downtown and Edgewater, which area of Miami has experienced a significant decrease in population density?

**Question 9**

In what decade did immigration from within the United States begin to have a significant impact on Miami's population?

**Text number 17**

Several major companies have their headquarters in or around Miami, including Akerman Senterfitt, Alienware, Arquitectonica, Arrow Air, Bacardi, Benihana, Brightstar Corporation, Burger King, Celebrity Cruises, Carnival Corporation, Carnival Cruise Lines, Crispin Porter + Bogusky, Duany Plater-Zyberk & Company, Espírito Santo Financial Group, Fizber.com, Greenberg Traurig, Holland & Knight, Inktel Direct, Interval International, Lennar, Navarro Discount Pharmacies, Norwegian Cruise Lines, Oceania Cruises, Perry Ellis International, RCTV International, Royal Caribbean Cruise Lines, Ryder Systems, Seabourn Cruise Line, Sedano's, Telefónica USA, UniMÁS, Telemundo, UniMÁS, Univision, U.S. Century Bank, U.S. Century Bank, C.A.S.-Y., C.A.S.-Y.S.A. and World Fuel Services. Due to its proximity to Latin America, Miami serves as the headquarters for Latin American operations for more than 1,400 multinational companies, including AIG, American Airlines, Cisco, Disney, Exxon, FedEx, Kraft Foods, LEO Pharma Americas, Microsoft, Yahoo, Oracle, SBC Communications, Sony, Symantec, Visa International and Wal-Mart.

**Question 0**

How many multinational companies have their Latin American operations headquartered in Miami?

**Question 1**

Why are so many multinationals headquartered in Miami, Latin America?

**Question 2**

Besides Celebrity, Carnival, Norwegian, Oceania and Royal Caribbean, which cruise line is based in Miami?

**Question 3**

How many multinational companies do not have their Latin American headquarters in Miami?

**Question 4**

How many multinational companies have their Anglo-American operations headquartered in Miami?

**Question 5**

Why do so many multinationals not have their Latin American headquarters in Miami?

**Question 6**

Why are the Anglo-American headquarters of so many multinational companies located in Miami?

**Question 7**

Apart from Celebrity, Carnival, Norwegian, Oceania and Royal Caribbean, which cruise line is not based in Miami?

**Text number 18**

Miami is a major television production centre and the most important city in the US for Spanish-language media. The headquarters and production studios of Univisión, Telemundo and UniMÁS are located in Miami. Telemundo Television Studios produces most of Telemundo's original programming, including telenovelas and talk shows. In 2011, 85% of Telemundo's original programming was filmed in Miami. Miami is also a major music recording hub, home to the headquarters of Sony Music Latin and Universal Music Latin Entertainment, as well as many other smaller record labels. The city also attracts many artists for music video and film shoots.

**Question 0**

Which Spanish-language television channel has its headquarters in Miami, along with UniMÁS and Univisión?

**Question 1**

What percentage of Telemundo's original programmes were filmed in Miami in 2011?

**Question 2**

Which music record label is located in Miami alongside Sony Music Latin?

**Question 3**

What is the name of the company that produces a significant part of Telemundo's original software?

**Question 4**

Which Spanish-language radio station has its headquarters in Miami, along with UniMÁS and Univisión?

**Question 5**

What percentage of Telemundo's original programmes were filmed in Miami in 2017?

**Question 6**

What percentage of Telemundo's original programmes were filmed outside Miami in 2011?

**Question 7**

Which music record label is not based in Miami besides Sony Music Latin?

**Question 8**

What is the name of the company that produces a small part of Telemundo's original software?

**Text number 19**

Since 2001, Miami has seen a major construction boom, with more than 50 skyscrapers over 122 metres high built or under construction. According to the Almanac of Architecture and Design, Miami's skyline is the third most impressive in the United States after New York and Chicago, and 19th in the world. The city currently has the eight tallest skyscrapers in the state of Florida (and thirteen of the fourteen tallest), the tallest being the 240-metre Four Seasons Hotel & Tower.

**Question 0**

How many skyscrapers over 400 metres tall have been built or are being built in Miami since 2001?

**Question 1**

Which US cities have a more impressive skyline than Miami?

**Question 2**

What is Miami's world ranking for how impressive its skyline is?

**Question 3**

How many of Florida's 14 tallest skyscrapers are in Miami?

**Question 4**

What is the tallest skyscraper in Florida?

**Question 5**

How many skyscrapers over 400 metres tall have been built or will be built in Miami since 2011?

**Question 6**

Which UN cities have a more impressive skyline than Miami?

**Question 7**

What is Miami's world ranking for how boring its skyline is?

**Question 8**

How many of the 15 tallest skyscrapers in Florida are in Miami?

**Question 9**

What is the shortest skyscraper in Florida?

**Text number 20**

In the mid-2000s, the city experienced its biggest real estate boom since the Florida land boom of the 1920s. During this period, the city had well over 100 approved condominium projects, 50 of which were actually built. In 2007, however, the housing market collapsed, leading to many foreclosures. This rapid apartment construction has led to rapid population growth in inner city neighbourhoods, mainly Downtown, Brickell and Edgewater, and these neighbourhoods have become the fastest growing areas of the city. The Miami area ranks eighth nationally in foreclosures. In 2011, Forbes magazine named Miami the second most miserable city in the US, due to its high rate of public asset forfeitures and corrupt officials over the past decade. In 2012, Forbes magazine named Miami the worst city in the US because the crippling housing crisis has robbed many residents of their homes and jobs. The metro area has one of the highest violent crime rates in the country and workers have long daily commutes.

**Question 0**

When did Florida's land boom start?

**Question 1**

What year did Miami's housing market collapse?

**Question 2**

Where around Miami are the most foreclosures nationwide?

**Question 3**

Why did Forbes rank Miami as the second worst city in the country, alongside political corruption, in 2011?

**Question 4**

What year did Forbes call Miami the worst city in the country?

**Question 5**

When did the Florida land grab take place?

**Question 6**

What year did Miami's housing market boom?

**Question 7**

Where in the Miami area is there a high level of foreclosures internationally?

**Question 8**

Why did Forbes rank Miami as the second worst city in the country, alongside political corruption, in 2001?

**Question 9**

What year did Forbes call Miami the least miserable city in the country?

**Text number 21**

Miami International Airport and PortMiami are the country's busiest ports of entry, especially for cargo from South America and the Caribbean. The Port of Miami is the world's busiest cruise port, and MIA is Florida's busiest airport and the largest gateway between the US and Latin America. In addition, the city is home to the country's largest concentration of international banks, primarily along Brickell Avenue in Miami's financial district of Brickell. Due to the strength of international business, finance and trade, many international banks have offices in Downtown, including Espírito Santo Financial Group, whose US headquarters is located in Miami. Miami was also the host city for the 2003 Free Trade Area of the Americas negotiations and is one of the leading candidates for the trade group's headquarters.

**Question 0**

What is the busiest airport in Florida?

**Question 1**

What is the world's busiest cruise port?

**Question 2**

What year was the Free Trade Area of the Americas negotiated in Miami?

**Question 3**

Which street is central to Miami's financial district?

**Question 4**

In addition to the Caribbean, where does a significant amount of freight arrive at MIA?

**Question 5**

What is the busiest port in Florida?

**Question 6**

What is the world's least busy cruise port?

**Question 7**

What year was the Free Trade Area of the Americas negotiated in Miami?

**Question 8**

Which mountain is centrally located in the Miami Economic Zone?

**Question 9**

Where does a significant amount of freight come from besides the Caribbean to the MMI?

**Text number 22**

Tourism is also an important economic activity in Miami. In addition to finance and business, beaches, conventions, festivals and events attract more than 38 million visitors from around the country and the world to the city each year, spending $17.1 billion. South Beach's Art Deco district is considered one of the most glamorous in the world thanks to its nightclubs, beaches, historic buildings and shopping opportunities. Annual events such as the Sony Ericsson Open, Art Basel, Winter Music Conference, South Beach Wine & Food Festival and Mercedes-Benz Fashion Week Miami attract millions of people each year.

**Question 0**

How many tourists come to Miami each year?

**Question 1**

How much money do tourists spend in Miami each year?

**Question 2**

In which district is the Art Deco district located?

**Question 3**

Who is sponsoring Miami Fashion Week?

**Question 4**

Besides nightclubs, beaches and shopping, what is the main attraction of the Art Deco district?

**Question 5**

How many tourists do not come to Miami each year?

**Question 6**

How much money do tourists spend in Miami each month?

**Question 7**

In which district is the Art Nouveau area located?

**Question 8**

Apart from nightclubs, beaches and shopping, what major attraction in the Art Deco district is not?

**Question 9**

Who is sponsoring Fashion Month Miami?

**Text number 23**

According to the US Census Bureau, Miami had the third highest number of families with incomes below the federal poverty line in 2004, making it the third poorest city in the US, behind only Detroit, Michigan (No. 1) and El Paso, Texas (No. 2). Miami is also one of the few cities whose local government went bankrupt in 2001. Since then, however, Miami has experienced a resurgence: in 2008, Miami was named "America's Cleanest City" by Forbes for its year-round air quality, extensive green spaces, clean drinking water, clean streets and city-wide recycling programmes. In a 2009 UBS study of 73 global cities, Miami ranked as the richest city in the US (out of four US cities surveyed) and the fifth richest city in the world in terms of purchasing power.

**Question 0**

Which city was the poorest in the US in 2004?

**Question 1**

What was the second poorest city in the US in 2004?

**Question 2**

Which city was the third poorest in America in 2004?

**Question 3**

What year did the Miami government go bankrupt?

**Question 4**

Where did Miami rank in terms of purchasing power among the world's cities in a 2009 UBS study?

**Question 5**

Which city was the poorest in the US in 2014?

**Question 6**

What was the second poorest city in the US in 2014?

**Question 7**

What year did the Miami government not declare bankruptcy?

**Question 8**

Which city was the third poorest in America in 2014?

**Question 9**

Where did Miami rank among the world's cities in terms of purchasing power in a 2008 UBS study?

**Text number 24**

In addition to annual festivals such as Calle Ocho and Carnaval Miami, Miami has many entertainment venues, theatres, museums, parks and performing arts centres. The newest addition to Miami's arts scene is the Adrienne Arsht Center for the Performing Arts, the second largest performing arts centre in the US after New York's Lincoln Center, and home to the Florida Grand Opera. It houses the Ziff Ballet Opera House, the center's largest venue, Knight Concert Hall, Carnival Studio Theater and Peacock Rehearsal Studio. The Center attracts many major operas, ballets, concerts and musicals from around the world, and is Florida's most powerful performing arts center. Other Miami performing arts venues include the Gusman Center for the Performing Arts, Coconut Grove Playhouse, Colony Theatre, Lincoln Theatre, New World Center, Actor's Playhouse at the Miracle Theatre, Jackie Gleason Theatre, Manuel Artime Theater, Ring Theatre, Playground Theatre, Wertheim Performing Arts Center, Fair Expo Center and Bayfront Park Amphitheater for outdoor musical events.

**Question 0**

What is the largest performing arts centre in the US?

**Question 1**

Which organisation calls the Adrienne Arsht Center for the Performing Arts home?

**Question 2**

What is the biggest venue at the Adrienne Arsht Center for the Performing Arts?

**Question 3**

Where is Lincoln Center located?

**Question 4**

Which Miami venue is known for hosting outdoor music?

**Question 5**

What is the largest performing arts centre in the UN?

**Question 6**

What disorder calls the Adrienne Arsht Center for the Performing Arts home?

**Question 7**

What is the smallest venue at the Adrienne Arsht Center for the Performing Arts?

**Question 8**

Where is Lincoln Center not located?

**Question 9**

Which Miami venue is impossible to organise outdoor music in?

**Text number 25**

In the early 1970s, Miami's disco sound was revived by TK Records, which featured music by KC and the Sunshine Band, including "Get Down Tonight", "(Shake, Shake, Shake, Shake) Shake Your Booty" and "That's the Way (I Like It)", as well as hit singles by Latin American disco group Foxy (the band), "Get Off" and "Hot Number". George McCrae and Teri DeSario, both from the Miami area, were also popular music artists in the 1970s disco era. The Bee Gees moved to Miami in 1975 and have lived here ever since. Miami-influenced Gloria Estefan and the Miami Sound Machine broke through in popular music with their Cuban-influenced sound and had hits in the 1980s with 'Conga' and 'Bad Boys'.

**Question 0**

Which group performed the song "Hot Number"?

**Question 1**

What year did the Bee Gees move to Miami?

**Question 2**

Which band performed the song "Conga"?

**Question 3**

Which record company introduced KC and the Sunshine Band?

**Question 4**

In which decade was disco popular?

**Question 5**

Which group hated the song "Hot Number"?

**Question 6**

What year did the Bee Gees not move to Miami?

**Question 7**

Which band hated the song "Conga"?

**Question 8**

Which record company turned down KC and the Sunshine Band?

**Question 9**

In which decade was disco unpopular?

**Text number 26**

Miami is also considered a "hot spot" for dance music, Freestyle, a popular dance music style from the 80s and 90s, with a lot of influences from electro, hip hop and disco. Many popular freestyle performers, such as Pretty Tony, Debbie Deb, Stevie B and Exposé, come from Miami. Indie/folk bands Cat Power and Iron & Wine were born in Miami, while alternative hip hop artist Sage Francis, electro artist Uffie and electroclash duo Avenue D were born in Miami but musically elsewhere. The ska-punk band Against All Authority also hails from Miami, while rock/metal bands Nonpoint and Marilyn Manson both formed in the neighbouring city of Fort Lauderdale. Cuban-American female recording artist Ana Cristina was born in Miami in 1985.

**Question 0**

What kind of music influenced Freestyle besides electronica and disco?

**Question 1**

What kind of music does Uffie play?

**Question 2**

How did the Nonpoint band form?

**Question 3**

What is Ana Cristina's ethnic origin?

**Question 4**

Besides Cat Power, which indie/folk musician lives in Miami?

**Question 5**

What genre of music has never influenced Freestyle besides Electro and disco?

**Question 6**

What style of music does Uffie not perform?

**Question 7**

Where did the Nonpoint band fail to form?

**Question 8**

What is not Ana Cristina's ethnic origin?

**Question 9**

What indie/folk musician is not in Miami besides Cat Power?

**Text number 27**

This was also a time of nightclub options. The warehouse parties, acid house, rave and open-air festivals of the late 1980s and early 1990s were havens for the latest trends in electronic dance music, especially house and its increasingly hypnotic, synthetic offspring, techno and trance, at clubs such as the infamous Warsaw Ballroom, better known as Warsaw, and The Mix, which featured DJs such as David Padilla (who was resident DJ for both), and radio. The new sound returned to mainstream clubs across the country. The SoBe scene and the bustling second-hand market for electronic instruments and turntables had a strong democratising effect, offering amateur 'bedroom' DJs the opportunity to become skilled and popular as both players and producers, regardless of the vagaries of the professional music and club industry. Some of these prominent DJs include John Benetiz (better known as JellyBean Benetiz), Danny Tenaglia and David Padilla.

**Question 0**

Who was the house DJ at the Warsaw Ballroom?

**Question 1**

What other name is John Benetiz known by?

**Question 2**

In which area of Miami is there a significant market for used turntables?

**Question 3**

Who was the JD of the Warsaw Ballroom House?

**Question 4**

Who wasn't the house DJ at the Warsaw Ballroom?

**Question 5**

Under what other name is John Benetiz unknown?

**Question 6**

In which area of Miami is there no significant market for used turntables?

**Question 7**

In which area of Miami is there an inconspicuous market for used turntables?

**Text number 28**

Cuban immigrants in the 1960s brought with them the Cuban sandwich, medianoche, Cuban espresso and croquetas, which have grown in popularity among all Miamians and have become symbols of the city's diverse cuisine. Today they are part of the local culture and can be found in window cafés all over the city, especially outside supermarkets and restaurants. Restaurants like the Versailles in Little Havana are Miami landmarks. Located on the Atlantic Ocean, Miami has a long history as a seaport and is also known for its seafood, with many seafood restaurants along the Miami River and in and around Biscayne Bay. Miami is also home to chain restaurants such as Burger King, Tony Roma's and Benihana.

**Question 0**

What is a great restaurant in Little Havana?

**Question 1**

Which chain restaurant is headquartered in Miami alongside Benihana and Burger King?

**Question 2**

In which decade did Cuban immigrants bring their food culture to Miami?

**Question 3**

Which ocean is Miami on?

**Question 4**

Besides the Miami River, which body of water is close to Miami's seafood restaurants?

**Question 5**

What is the most discreet restaurant in Little Havana?

**Question 6**

Besides Benihana and Burger King, which chain restaurant is not headquartered in Miami?

**Question 7**

In which decade did Cuban immigrants hide their food in Miami?

**Question 8**

Which river is Miami on?

**Question 9**

Besides the Miami River, which body of water near the Miami River does not have Miami restaurants located along the Miami River?

**Text number 29**

The Miami area has a unique dialect (commonly referred to as the "Miami accent") that is widely spoken. The dialect developed among second or third generation Hispanics, such as Cuban-Americans, whose native language was English (although it is also adopted by some non-Hispanic whites, blacks and other races born and raised in the Miami area). It is based on a fairly standard American accent, but with some modifications that are very similar to those found in Mid-Atlantic dialects (particularly those of the New York area, northern New Jersey English, and New York Latin English). Unlike the Piedmont, Coastal Southern American and Northeast American dialects of Virginia and the Cracker dialect of Florida (see below), the Miami accent is rhythmic; it also has a rhythm and pronunciation that are heavily influenced by Spanish (the rhythm is syllabic). However, this is a dialect of native English, not the learner's English or the intermediate language; this variant can be distinguished from the intermediate language spoken by speakers of another language in that the 'Miami accent' does not usually have the following features: /ɛ/ is not added before the initial consonant clusters of /s/ consonants, speakers do not confuse /dʒ/ with /j/, (e.g., Yale and prison), and /r/ and /rr/ are pronounced as an alveolar approximation [ɹ] rather than being pronounced in Spanish as an alveolar tap [ɾ] or alveolar trill [r].

**Question 0**

What is another term for the Miami dialect?

**Question 1**

Which region of the country has a similar dialect to Miami?

**Question 2**

What influences the dialect of Miami other than English?

**Question 3**

What is not another term for the Miami dialect?

**Question 4**

What is another term for the Florida dialect?

**Question 5**

In which part of the country is the dialect different from Miami?

**Question 6**

Which English language influences the Miami dialect?

**Question 7**

What other language than English does not affect the Miami dialect?

**Text number 30**

Miami's four main sports teams are the Miami Dolphins of the National Football League, the Miami Heat of the National Basketball Association, the Miami Marlins of Major League Baseball and the Florida Panthers of the National Hockey League. In addition to having all four major professional teams, Miami is also home to the Major League Soccer expansion team led by David Beckham, the Sony Ericsson Open professional tennis team, numerous greyhound racing tracks, marinas, jai alai courts and golf courses. The city's streets have hosted professional car races, the Miami Indy Challenge and later the Grand Prix Americas. The Homestead-Miami Speedway oval hosts NASCAR national races.

**Question 0**

What sport does the Miami Heat play?

**Question 1**

What is the nickname of the Miami NFL team?

**Question 2**

Which professional hockey team is based in Miami?

**Question 3**

Which tournament in Miami is playing professional tennis?

**Question 4**

Where are the NASCAR races in Miami?

**Question 5**

What sport does the Miami Heat not play?

**Question 6**

What's not a nickname for Miami's NFL team?

**Question 7**

Which professional hockey team is based outside Miami?

**Question 8**

Which tournament in Miami is playing amateur tennis?

**Question 9**

Where in Miami is there no NASCAR race?

**Text number 31**

Miami's tropical weather allows for year-round outdoor activities. The city has numerous marinas, rivers, bays, canals and the Atlantic Ocean, making boating, sailing and fishing popular outdoor activities. Biscayne Bay has numerous coral reefs, making snorkeling and diving popular. The city has more than 80 parks and gardens. The largest and most popular parks are Bayfront Park and Bicentennial Park (located in the heart of downtown and home to the American Airlines Arena and Bayside Marketplace), Tropical Park, Peacock Park, Morningside Park, Virginia Key and Watson Island.

**Question 0**

How many gardens and parks are there in Miami?

**Question 1**

In which park is the American Airlines Arena located?

**Question 2**

What activities are popular in Biscayne Bay because of the coral reefs?

**Question 3**

In which area is Bicentennial Park located?

**Question 4**

Why can you enjoy outdoor activities in Miami all year round?

**Question 5**

How many gardens and parks are there in Miami that don't exist?

**Question 6**

Outside which park is the American Airlines Arena located?

**Question 7**

Which activities are not popular in Biscayne Bay because of the coral reefs?

**Question 8**

What area is Bicentennial Park not located in?

**Question 9**

Why can you do indoor activities in Miami all year round?

**Text number 32**

The City of Miami's (actual) government uses a mayor-commissioner type system. The City Council consists of five councillors elected from single-member constituencies. The City Council is the governing body with the power to adopt ordinances, pass regulations and exercise all the powers granted to the City by the City Charter. The mayor is elected and appoints the mayor. The City of Miami is led by Mayor Tomás Regalado and five councillors who oversee the city's five wards. Regular meetings of the Commission are held at Miami City Hall, located at 3500 Pan American Drive Dinner Key in Coconut Grove.

**Question 0**

Under which governance system does Miami operate?

**Question 1**

How many members are there on the city council?

**Question 2**

Who is the Mayor of Miami?

**Question 3**

What is the street address of Miami City Hall?

**Question 4**

In which district is Miami City Hall located?

**Question 5**

Under which system of government does Miami not work?

**Question 6**

How many members are not on the city council?

**Question 7**

Who is not the Mayor of Miami?

**Question 8**

What is not the street address of Miami City Hall?

**Question 9**

What area is Miami City Hall not located in?

**Text number 33**

Miami has one of the largest television markets in the country and the second largest in the state of Florida. Miami has several major newspapers, the most important and largest of which is the Miami Herald. El Nuevo Herald is the main and largest Spanish-language newspaper. The Miami Herald and El Nuevo Herald are the main, most important and largest newspapers in Miami and South Florida. The newspapers left their longtime home in downtown Miami in 2013. The newspapers are now headquartered in the former home of the US Southern Command in Doral.

**Question 0**

When did El Nuevo Herald leave Miami?

**Question 1**

In which municipality is the Miami Herald currently located?

**Question 2**

Where does Miami rank among Florida's television markets?

**Question 3**

What is the biggest newspaper in Miami?

**Question 4**

What is the largest Spanish-language newspaper in Miami?

**Question 5**

When did El Nuevo Herald stay in Miami?

**Question 6**

In which municipality is the Miami Herald not currently located?

**Question 7**

Where does Miami rank in the Florida radio market?

**Question 8**

What is the smallest newspaper in Miami?

**Question 9**

What is the smallest Spanish-language newspaper in Miami?

**Text number 34**

Other major newspapers include Miami Today, headquartered in Brickell, Miami New Times, headquartered in Midtown, Miami Sun Post, South Florida Business Journal, Miami Times and Biscayne Boulevard Times. The Spanish-language newspaper Diario Las Americas also serves Miami. The Miami Herald is Miami's main newspaper with over 1 million readers and is headquartered in the Herald Plaza in downtown Miami. Several other student newspapers are also published by local universities, including the oldest, The Miami Hurricane of the University of Miami, The Beacon of Florida International University, The Metropolis of Miami-Dade College and The Buccaneer of Barry University. Many neighbourhoods and surrounding areas also have their own local newspapers, including the Aventura News, Coral Gables Tribune, Biscayne Bay Tribune and Palmetto Bay News.

**Question 0**

In which district of Miami is Miami New Times located?

**Question 1**

Where is Miami Today's headquarters located?

**Question 2**

How many people read the Miami Herald?

**Question 3**

Which university's student newspaper is The Beacon?

**Question 4**

What is the name of the Barry University student newspaper?

**Question 5**

Which Miami district is not home to the Miami New Times?

**Question 6**

In which area is Miami Today no longer headquartered?

**Question 7**

Which university does not have a student newspaper, The Beacon?

**Question 8**

Approximately how many people write for the Miami Herald?

**Question 9**

What is not the name of the Barry University student newspaper?

**Text number 35**

Miami is also home to the headquarters and main production facilities of many of the world's largest television networks, record labels, broadcasters and production companies, including Telemundo, TeleFutura, Galavisión, Mega TV, Univisión, Univision Communications, Inc, Universal Music Latin Entertainment, RCTV International and Sunbeam Television. In 2009, Univisión announced plans to build a new production studio in Miami called Univisión Studios. Univisión Studios is currently headquartered in Miami and produces programming for all of Univisión Communications' television channels.

**Question 0**

When did Univisión announce it would build a production studio in Miami?

**Question 1**

What was the name of the production studio built by Univisión in Miami?

**Question 2**

Where are programmes made in the Univisión studio broadcast?

**Question 3**

When did Univisión announce that it would not build a production studio in Miami?

**Question 4**

When did Fox announce it would build a production studio in Miami?

**Question 5**

What was the name of the production studio that Fox built in Miami?

**Question 6**

What was not the name of the production studio built by Univisión in Miami?

**Question 7**

Where are programmes made in the Univisión studio not broadcast?

**Text number 36**

Miami International Airport is the main international airport in the Miami metropolitan area. Miami International Airport is one of the busiest international airports in the world, serving more than 35 million passengers annually. The airport is a major hub and the largest international gateway for American Airlines. Miami International Airport is Florida's busiest airport and is the second largest international port of entry for foreign air travelers in the United States, after New York's John F. Kennedy International Airport, and the seventh largest such gateway in the world. The airport's extensive international route network includes non-stop flights to more than seventy international cities in North and South America, Europe, Asia and the Middle East.

**Question 0**

How many passengers use Miami International Airport each year?

**Question 1**

Which airline uses Miami International as its largest international gateway?

**Question 2**

Which airport is the largest international port of entry for foreign air passengers in the United States?

**Question 3**

How many non-US cities can you fly non-stop from Miami International Airport?

**Question 4**

How many pilots use Miami International Airport each year?

**Question 5**

Which airline uses Miami International as its smallest international gateway?

**Question 6**

Which airport is the smallest international port in the United States where foreign air passengers arrive?

**Question 7**

Which airport is the largest international port of entry for overseas sea passengers in the United States?

**Question 8**

How many US cities can you fly non-stop to from Miami International Airport?

**Text number 37**

Miami is home to one of the largest ports in the United States, Port Miami. It is the largest cruise ship port in the world. The port is often referred to as the "cruise capital of the world" and the "freight gateway of the Americas". It has maintained its position as the world's number one cruise and passenger port for more than a decade, accommodating the largest cruise ships and the largest cruise lines. In 2007, the port served 3 787 410 passengers. It is also one of the busiest cargo ports in the country, bringing in 7.8 million tonnes of cargo in 2007. It is the second largest North American port in terms of tonnes of cargo imported or exported from Latin America, after the Port of New Orleans in South Louisiana. The port covers an area of 518 hectares (2 km2) and has 7 passenger terminals. China is the port's main importing country and Honduras is the port's main exporting country. Miami is home to the world's largest number of cruise ship headquarters, including Carnival Cruise Lines, Celebrity Cruises, Norwegian Cruise Line, Oceania Cruises and Royal Caribbean International. In 2014, the Port of Miami Tunnel was completed to serve PortMiami.

**Question 0**

What is PortMiami's other nickname besides "Cargo Gateway of the Americas"?

**Question 1**

How many passengers used PortMiami in 2007?

**Question 2**

How many tonnes of freight arrived in PortMiami in 2007?

**Question 3**

Which North American port imports and exports the most cargo?

**Question 4**

How many square kilometres is PortMiami?

**Question 5**

What is not PortMiami's other nickname besides "America's Freight Corridor"?

**Question 6**

How many passengers used PortMiami in 2017?

**Question 7**

How many tonnes of freight arrived at PortMiami in 2017?

**Question 8**

Which South American port imports and exports the most cargo?

**Question 9**

How many square metres is PortMiami?

**Text number 38**

Miami's heavy-rail rapid transit system, Metrorail, is an elevated system consisting of two lines and 23 stations on a 24.4-mile (39.3 km) line. Metrorail connects the urban western suburbs of Hialeah and Medley and the downtown Miami suburbs of The Roads, Coconut Grove, Coral Gables, South Miami and urban Kendall with Miami International Airport, Civic Center and downtown's central business districts. The free, elevated passenger rail service, Metromover, operates 21 stations on three different lines in downtown Miami, with stations on roughly every other block in Downtown and Brickell. Several expansion projects throughout Miami-Dade County are funded by a transit development sales tax surcharge.

**Question 0**

What is the name of Miami's heavy rail system?

**Question 1**

How many kilometres long is the Metrorail?

**Question 2**

How many stations does Metrorail have?

**Question 3**

How many lines does Metromover have?

**Question 4**

How much does it cost to use Metromover?

**Question 5**

What is the name of the Miami light rail system?

**Question 6**

How many metres long is the Metrorail?

**Question 7**

How many stations does Metrorail not have?

**Question 8**

How many lines does Metromover not have?

**Question 9**

How much does it cost to use Metromover?

**Text number 39**

Construction of the Miami Intermodal Center and Miami Central Station is currently underway. This will be a massive transportation hub serving Metrorail, Amtrak, Tri-Rail, Metrobus, Greyhound, taxis, rental cars, MIA Mover, private cars, bicycles and pedestrians near Miami International Airport. The Miami Intermodal Center is expected to be completed by winter 2011 and will serve more than 150,000 commuters and passengers in the Miami area. The first phase of the Miami Intermodal Center is scheduled to begin operations in spring 2012 and the second phase in 2013.

**Question 0**

What year was the Miami Intermodal Centre completed?

**Question 1**

When was the second phase of the Miami Center station due to start operating?

**Question 2**

How many people were expected to use the Miami Intermodal Centre?

**Question 3**

Which airport is Miami Intermodal Center next to?

**Question 4**

When in 2012 should the first phase of Miami Central Station have started?

**Question 5**

What year was the construction of the Miami Intermodal Centre not completed?

**Question 6**

When was the third phase of the Miami Center station due to start operating?

**Question 7**

How many people were not supposed to use the Miami Intermodal Center?

**Question 8**

Which airport is Miami Intermodal Center not next to?

**Question 9**

When was the first phase of Miami Central Station due to start in 2002?

**Text number 40**

Miami is the southern terminus of Amtrak's Atlantic Coast service, with two lines, Silver Meteor and Silver Star, both terminating in New York. The Miami Amtrak station is located in the suburb of Hialeah near the Tri-Rail/Metrorail station at NW 79 St and NW 38 Avenue. The Miami Central Station is currently under construction, which will move all Amtrak operations from their current remote location to a centralized location with Metrorail, MIA Mover, Tri-Rail, Miami International Airport and the Miami Intermodal Center all at the same station closer to downtown. The station was expected to be completed by 2012, but experienced several delays, and was later expected to be completed in late 2014, but was delayed again until early 2015.

**Question 0**

Which Amtrak line runs to Miami in addition to the Silver Star?

**Question 1**

Where does the Silver Star go from Miami?

**Question 2**

In which city is the Miami Amtrak station located?

**Question 3**

What year was Miami Central Station originally supposed to be completed?

**Question 4**

After the first delay, in what year was Miami Central supposed to open?

**Question 5**

Which Amtrak line no longer runs to Miami besides the Silver Star?

**Question 6**

Where does the Silver Star Miami not run to?

**Question 7**

In which country is the Miami Amtrak station located?

**Question 8**

What year was Miami Central Station originally supposed to be unfinished?

**Question 9**

After the first delay, what year was Miami Central Station supposed to close?

**Text number 41**

Florida High Speed Rail was a proposed government-backed high-speed rail system that would have connected Miami, Orlando and Tampa. The first phase was supposed to connect Orlando and Tampa and was offered federal funding, but was rejected by Governor Rick Scott in 2011. The second phase of the line was planned to connect Miami. By 2014, a private project by the historic Florida East Coast Railway, known as All Aboard Florida, began construction of a faster rail line to South Florida, which is expected to eventually terminate at Orlando International Airport.

**Question 0**

Which city besides Orlando would be connected to Miami by the Florida high-speed train?

**Question 1**

Who was the Governor of Florida in 2011?

**Question 2**

What year did All Aboard Florida start?

**Question 3**

Which company is responsible for All Aboard Florida?

**Question 4**

Where does All Aboard Florida extend from South Florida?

**Question 5**

What city besides Orlando would not have been connected to Miami by the Florida high-speed train?

**Question 6**

Who was the Governor of Florida in 2001?

**Question 7**

What year did All Aboard Florida end?

**Question 8**

Which company is not responsible for All Aboard Florida?

**Question 9**

Where in North Florida does All Aboard Florida extend?

**Text number 42**

Miami's road system is based on the numerical "Miami Grid" system, with Flagler Street forming the east-west baseline and Miami Avenue the north-south meridian. The corner of Flagler Street and Miami Avenue is in the middle of Downtown in front of the Downtown Macy's (former Burdine's headquarters). The Miami grid is primarily numeric, so for example, all street addresses north of Flagler Street and west of Miami Avenue have "NW" in the address. Because its starting point is Downtown, which is close to the coast, therefore the "NW" and "SW" squares are much larger than the "SE" and "NE" squares. Many roads, especially major roads, are also designated (e.g. Tamiami Trail/SW 8th St), although with exceptions the number is more commonly used by locals.

**Question 0**

Which company used to have its headquarters in the Macy's downtown?

**Question 1**

What is another name for the Tamiami Trail?

**Question 2**

Where in Miami is the corner of Miami Avenue and Flagler Street?

**Question 3**

What is the name of Miami's street plan?

**Question 4**

If the street is west of Miami Avenue and north of Flagler Street, what is necessarily the address?

**Question 5**

Which company never had its headquarters in a downtown Macy's?

**Question 6**

What is not another name for the Tamiami Trail?

**Question 7**

Where in Miami is the corner of Miami Avenue and Florida Street?

**Question 8**

What's not the name of Miami's street plan?

**Question 9**

If a street is west of Miami Avenue and north of Flagler Street, what is not necessarily at its address?

**Text number 43**

Miami has six major roads that cross Biscayne Bay and connect the western mainland and the eastern barrier islands of the Atlantic Ocean. The Rickenbacker Causeway is the southernmost road, connecting Brickell to Virginia Key and Key Biscayne. The Venetian Causeway and MacArthur Causeway connect downtown to South Beach. The Julia Tuttle Causeway connects Midtown and Miami Beach. The 79th Street Causeway connects the Upper East Side to North Beach. The northernmost Causeway, the Broad Causeway, is the smallest of Miami's six Causeways and connects North Miami to Bal Harbour.

**Question 0**

What does the Rickenbacker Causeway have in common with Brickell besides Virginia Key?

**Question 1**

Which road connects South Beach and downtown?

**Question 2**

Which dam in Miami has the smallest size?

**Question 3**

Which fairway is furthest south?

**Question 4**

How many major roads are there in Miami?

**Question 5**

Besides Virginia Key, what does the Rickenbacker Causeway not connect to Brickell?

**Question 6**

Which road connects South Beach and Uptown?

**Question 7**

Which dam in Miami is the largest in size?

**Question 8**

Which road is closest to the south?

**Question 9**

How many small causeways are there in Miami?

**Text number 44**

In recent years, the city government, under the leadership of Mayor Manny Diaz, has taken an ambitious stance to support cycling in Miami for both recreation and commuting. Every month, the city organises "Bike Miami", where the main streets of downtown and Brickell are closed to car traffic but left open for pedestrians and cyclists. The event started in November 2008 and has doubled in popularity from 1 500 participants to around 3 000 at Bike Miami in October 2009. It is the longest running similar event in the United States. In October 2009, the city also adopted a comprehensive 20-year plan for bike lanes and trails throughout the city. The city has begun building bike lanes since late 2009, and ordinances requiring bike parking in all future construction in the city became mandatory in October 2009.

**Question 0**

What can't move on the streets of downtown Miami during "Bike Miami"?

**Question 1**

How many people took part in Bike Miami in October 2009?

**Question 2**

Who was the new mayor of Miami?

**Question 3**

Where in Miami will Bike Miami take place besides Downtown?

**Question 4**

In what month of 2008 did Bike Miami start?

**Question 5**

What can you do on the streets of downtown Miami during "Bike Miami"?

**Question 6**

How many people took part in Bike Miami in October 2008?

**Question 7**

Who was the mayor of Miami other than the recent mayor?

**Question 8**

Where in Miami will Bike Miami take place besides Uptown?

**Question 9**

What month in 2018 did Bike Miami start?