



1. In one poem, this man compared Cromwell's return to England with a "three-forked lightning" blasting off the head of Caesar. The speaker of another of his poems claims that his "vegetable love should grow / Vaster than empires." In that poem, the speaker imagines "deserts of vast eternity" and hears "Time's winged chariot hurrying near." For 10 points, name this poet who penned the line "Had we but world enough, and time" in his "To His Coy Mistress."

ANSWER: Andrew Marvell

227-13-93-14101

2. One of this author's novels consists of several transcribed tape recorder conversations, followed by an "Imitation of the Tape." The title character of that novel, *Visions of Cody*, appears in another book by him, in which the narrator first meets him "not long after my wife and I split up." This author's most famous novel was originally written on a long scroll of tracing paper. This man fictionalized his friend Neal Cassady as Dean Moriarty and himself as Sal Paradise in that novel. For 10 points, name this Beat author of *On the Road*.

ANSWER: Jack Kerouac

020-13-93-14102

3. This planet's moons of Galatea and Despina serve as shepherds for its rings. This planet's largest moon has a retrograde orbit and cantaloupe terrain. During Voyager 2's flyby of this planet, it featured a storm called the Great Dark Spot. Like a closer planet, this planet's color is due to the presence of methane in its atmosphere. This planet was predicted by Urbain Le Verrier by perturbations in the orbit of Uranus. For 10 points, identify this blue gas giant, the farthest from the Sun.

ANSWER: Neptune

066-13-93-14103

4. This language uses the term "alah" to refer to a friend of the opposite sex from the speaker and "akis" to refer to a friend of the same sex. At the urging of Philip Johnston, this language was spoken at Camp Pendleton, reducing encoding time from thirty minutes to thirty seconds due to its extremely complex nature and rare usage by outsiders. For 10 points, name this indigenous language of the American Southwest which was used by the "wind talkers" during World War II.

ANSWER: Navajo

019-13-93-14104

5. An organism in this phylum has giant axons that were studied by Hodgkin and Huxley. The odontophore of organisms in this phylum commonly supports a rasping tongue-like structure called the radula. The outer wall of organisms in this phylum is formed by the mantle, which protects their internal organs and secretes calcium carbonate for their shell. Classes in this phylum include gastropods and cephalopods. For 10 points, identify this invertebrate marine phylum that includes squids and octopi.

ANSWER: molluscs [or Mollusca]

066-13-93-14105

6. Darrell Issa proposed a temporary six-year plan to deal with this issue. Bob Corker and John Hoeven amended a bill related to this issue that Rob Portman refused to support without modifications to E-Verify. A Senate bill addressing this issue was drafted by a "Gang of Eight" led by Chuck Schumer and John McCain, and earned 14 Republican votes in addition to every Democratic vote. For 10 points, name this issue which Marco Rubio addressed by supporting a path to citizenship for resident aliens.

ANSWER: **immigration** reform [or **illegal immigration** or other related concepts]

080-13-93-14106

7. Cistromes can be identified by a technique called CHIP, which is the immunoprecipitation of this material. At the secondary level of organization of this substance, it forms a 30-nanometer fiber. When it's that compact, this material is often prefixed with the word "hetero". This substance also exists in the form of nucleosomes, where it resembles beads-on-a-string. This substance is formed when strongly positively-charged proteins called histones allow DNA to wrap around them. For 10 points, name this substance which makes up chromosomes, consisting of DNA and protein.

ANSWER: **chromatin** [prompt on **chromosomes** or **DNA** or **histones**]

190-13-93-14107

8. The instruction "Go home and write / a page tonight" opens a poem by this writer written as an assignment for English B. This author wrote about a singer on Lennox Avenue who "slept like a rock or a man that's dead" in "The Weary Blues." In another of his poems, he offered "stink[ing] like rotten meat" and "sag[ging] like a heavy load" as possible outcomes for a dream deferred. The speaker "bathed in the Euphrates when dawns were young" in a poem in which this man "speaks of rivers." For 10 points, name this Harlem Renaissance poet.

ANSWER: Langston **Hughes** [or "**Theme for English B**" before "writer" is read]

080-13-93-14108

9. These two countries signed the 1871 Treaty of Washington, which settled the "Alabama claims" between them. These two countries engaged in a dispute over the diplomats James Mason and John Slidell, the *Trent* affair. These two countries clashed over the "impressment" controversy, and now enjoy the "special relationship." For 10 points, name these two countries which were led during World War II by Franklin Roosevelt and Winston Churchill.

ANSWER: **USA** [or **United States** of America] and **UK** [or **United Kingdom**; or Great **Britain**; or **England**; either order is acceptable, but do not accept or prompt if only one answer is given]

019-13-93-14109

10. This author's poem "Tomorrow, at Dawn," is one of his most famous responding to the premature death of his daughter Leopoldine. He included a lengthy chapter describing the problems with the Paris sewer system in a novel in which the protagonist escapes through the sewers his daughter's beloved. That novel by this author features Marius Pontmercy, Cosette, and Jean Valjean. For 10 points, name this French novelist of *Les Misérables*.

ANSWER: Victor **Hugo**

014-13-93-14110

11. The typical Werner complex consists of this element complexed with six ammonias and three chloride ions. Intrinsic factor is responsible for absorption of a vitamin with this element at the center of its corrin ring, deficiency of which causes pernicious anemia. That vitamin is vitamin B12. Like nickel and iron, this element is ferromagnetic. When bound to Al<sub>2</sub>O<sub>4</sub>, this element forms a pigment that imparts a deep blue color. For 10 points, identify this element with symbol Co.

ANSWER: **cobalt** [or **Co** until it is read]

066-13-93-14111

12. An author from this nation wrote a poem whose title action takes place “at five in the afternoon”; that author also created characters such as Angustias, Pepe el Romano, and the Bridegroom. Those characters from this nation appear in *The House of Bernarda Alba* and *Blood Wedding*. Another character created by an author from this nation falls in love with Dulcinea and battles windmills. For 10 points, identify this home nation of Federico Garcia Lorca and Miguel de Cervantes.

ANSWER: Kingdom of **Spain** [or Reino de **España**]

226-13-93-14112

13. In a story by this author, Boris's prioress aunt arranges his marriage and turns out to have switched places with her pet monkey. In another, a woman flees Paris with only a lottery ticket to become the maid of two elderly Norwegians. Her collection *Anecdotes of Destiny* contains stories like “Babette's Feast.” This writer's memoirs describe life on a Kenyan coffee plantation before she returned to Denmark. For 10 points, name this author of *Out of Africa* and *Seven Gothic Tales*.

ANSWER: Isak **Dinesen** [or Karen **Blixen**]

121-13-93-14113

14. Fort Antoine in this polity is the location of an outdoor theater and is situated on the northeastern tip of this polity known as Le Rocher. This polity consists of four sections known as quartiers that include the business district of La Condamine and the light industrial Fontvieille zone. This polity includes the Place Du Casino and a namesake Grand Prix. For 10 points, name this principality located in the French Riviera that is the location of Monte-Carlo.

ANSWER: **Monaco**

030-13-93-14114

15. In one of this man's stories, a husband calls roadside diners "dog-wagons" to annoy his wife, who insults his driving ability in turn, as they drive out to grab "A Couple of Hamburgers." With E.B. White's help, this writer joined the editorial staff of *The New Yorker*, where he sometimes published his threadbare cartoons illustrating interactions between couples. A man faces a firing squad and pilots a two-person fighter jet in his most famous story, about an average man with crazy daydreams. For 10 points, name this humorist who wrote "The Secret Life of Walter Mitty."

ANSWER: James **Thurber**

020-13-93-14115



1A. Brian Wilson, Al Jardine, and Mike Love were members of what American rock band whose albums include *Pet Sounds*?

ANSWER: The **Beach Boys**

1B. What equation, named for a German physicist and a French physicist, predicts the shape of curves on a phase diagram?

ANSWER: **Clausius-Clapeyron** equation

2A. What kind of self-similar mathematical set is exemplified by the Sierpinski Triangle, Koch Snowflake, and the Mandelbrot Set?

ANSWER: **fractal**

2B. What star of *The African Queen* and *The Caine Mutiny* uttered the line, "Louie, I think this is the beginning of a beautiful friendship," at the end of *Casablanca*?

ANSWER: Humphrey **Bogart**

3A. What data structure is first-in, first-out, as opposed stacks, which are last-in, first-out?

ANSWER: **queue**

3B. Which proposed medium for the movement of light was disproved by the Michelson-Morley experiment?

ANSWER: luminiferous **ether**

4A. This is a 20-second calculation question. If the sine of  $x$  is  $2\sqrt{2}$  all divided by 3, and  $x$  is an angle between 90 and 180 degrees, what is the cosine of  $x$ ?

ANSWER: **-1/3**

4B. This is a 20-second calculation question. If the cosine of  $2x$  is equal to .5, give all possible values for the sine of  $x$ .

ANSWER: **.5** and **-.5** [or **1/2** and **-1/2**]

5A. What Greek god was lame, worked at a forge, and married to Aphrodite?

ANSWER: **Hephaestus**

5B. The "Toreador Song" is found in what opera by Georges Bizet in which Don Jose kills the title gypsy?

ANSWER: **Carmen**

6A. What country was where the Rum Rebellion took place in 1808 against William Bligh, and where prime minister Harold Holt disappeared while swimming in 1967?

ANSWER: Commonwealth of **Australia**

6B. What piece by Pyotr Tchaikovsky includes excerpts from "La Marseillaise" and "God Save the Tsar" and commemorates the Battle of Borodino?

ANSWER: **1812 Overture** [or *The Year* **1812**; or **Festival Overture in E flat major**]

7A. What country's flag includes a depiction of its temple Angkor Wat?

ANSWER: Kingdom of **Cambodia** [or Preahreacheanachakr **Kampuchea**]

7B. A goat and a green-faced man face each other in what painting by Marc Chagall, which includes some upside-down houses?

ANSWER: **I and the Village**

8A. Proteins such as EcoRI are a part of what class of enzymes important in recombinant DNA technology, which cut DNA strands at specific recognition nucleotide sequences?

ANSWER: **restriction** enzymes [or **restriction** endonucleases]

8B. What Germanic tribe sacked Rome in 455 CE and was led by Gaiseric and Gunderic?

ANSWER: **Vandals**

9A. What country's July 2013 presidential elections selected Ibrahim Boubacar Keita to replace Amadou Toumani Toure, who was deposed in a coup for failing to deal with the Tuareg rebellion in Azawad?

ANSWER: Republic of **Mali** [or Republique du **Mali**; or **Mali** ka Fasojamana]

9B. What Cleveland building, which houses the Ahmet Ertegun Exhibition Hall and seven floors of other exhibits, is entered through a glass pyramid designed by I.M. Pei, much like Paris's Louvre?

ANSWER: **Rock and Roll Hall of Fame** and Museum

10A. This is a 30-second calculation question. A regular hexagon is inscribed inside a circle with area  $\pi$ . What is the area of the hexagon?

ANSWER: **3** times the square **root** of **3** all **over 2** [or **3/2** times the square **root** of **3**]

10B. This is a 30-second calculation question. Five justices on the Supreme Court, out of nine, write the majority opinion for a case. In how many different ways can those five justices be chosen?

ANSWER: **126**



1. Island arcs are created at this type of boundary. Trench rollback is hypothesized as a cause of the back-arc basins sometimes created at this type of boundary. Because oceanic crust is made of basalt and is heavier than continental crust, it is often subducted at this type of boundary. Orogenies most commonly occur at this type of boundary, such as the one that created the Himalayas. For 10 points, identify this type of boundary at which plates collide.

ANSWER: **convergent** boundary [or **destructive plate** boundary; or **margin** for "boundary"; prompt on **subduction**; prompt on **continental collision**]

066-13-93-14117

2. The US Office of Naval Research funded a study at this site, many of whose participants wore mirrored sunglasses to prevent eye contact. In 1916, this institution's employee Lewis Terman released a revision of Alfred Binet's intelligence test. The book *The Lucifer Effect* reflects on a study here, which had to be terminated after "John Wayne" and other guards abused their power. For 10 points, name this university where Philip Zimbardo conducted his infamous "prison experiment."

ANSWER: **Stanford** University

020-13-93-14118

3. One of his novels begins with a plane exploding over the English channel, though Gibreel Farishta and Saladin Chamcha are miraculously saved. This novelist wrote about the long-nosed Saleem Sinai, who was born at the moment of India's independence from Britain, in his novel *Midnight's Children*. For 10 points, name this Indian-British novelist whose book *The Satanic Verses* resulted in Ayatollah Khomeini calling for his death.

ANSWER: Salman **Rushdie**

014-13-93-14119

4. Part of this man's philosophy focused on the absolute spirit gaining self awareness through thought, nature, and finite spirits. Bruno Bauer and Ludwig Feuerbach were some of the so-called "young" philosophers who examined this man's writings. For 10 points, identify this German philosopher who described a thesis, antithesis, and synthesis as part of his dialectic system and who wrote *The Philosophy of Right* and *Phenomenology of the Mind*.

ANSWER: Georg Wilhelm Friedrich **Hegel**

030-13-93-14120

5. One character in this poem possesses a "sparkling Cross" which "Jews might kiss, and Infidels adore." Another character journeys into the Cave of Spleen to retrieve a vial and a bag filled with negative emotions. The main character of this poem flashes "living lightning" in her eyes soon after winning a game of ombre at Hampton Court and is asleep at the beginning of this poem, until she is warned of "some dread event" by "her guardian Sylph," Ariel. The real-life Lord Petre and his suitor Arabella Fermor were parodied in this poem as the Baron and Belinda. For 10 points, name this mock-heroic epic about the thievery of some hair, written by Alexander Pope.

ANSWER: *The* **Rape of the Lock**

020-13-93-14121

6. This man defeated pro-gold Judge Alton Parker to win one presidential election. This man's secretary of state negotiated an accord that acknowledged Japan's right to annex Korea, the Root-Takahira Agreement. He appointed Gifford Pinchot to run the Forest Service, and led the charge up San Juan Hill in the Spanish-American War. For 10 points, name this president who succeeded William McKinley and ran unsuccessfully on the Bull Moose ticket in 1912.

ANSWER: Theodore **Roosevelt**

030-13-93-14122

7. The narrowest spot in this channel comes between Point Marroqui and Point Cires. A pair of promontories on this channel were historically known as the Pillars of Hercules. The Spanish exclave of Ceuta (say-OO-tuh) is located just south of this channel in Morocco. For 10 points, name this channel whose namesake Rock is located on the southern edge of the Iberian Peninsula, which this strait separates from Africa to connect the Atlantic to the Mediterranean.

ANSWER: Strait of **Gibraltar**

023-13-93-14123

8. From 1966 to 2009, France boycotted the administrative structure of this organization, which was established by the 1949 Washington Treaty and is currently led by Danish Secretary General Anders Fogh Rasmussen. This organization's first-ever invocation of Article 5 of its charter, which provides for a collective response to an attack against one member, occurred after 9/11. For 10 points, name this mutual defense alliance among the U.S., Canada, and Western Europe.

ANSWER: **NATO** [or the **North Atlantic Treaty Organization**]

019-13-93-14124

9. ?This man was dubbed the "young Hercules" for his stringent support of the War of 1812 in the Senate, where he delivered a notorious 1837 speech dubbing slavery "a positive good." He wrote the *South Carolina Exposition and Protest* to oppose the Tariff of Abominations during the nullification crisis. For 10 points, name this orator who clashed with both John Quincy Adams and Andrew Jackson while serving as Vice-President under both.

ANSWER: John Caldwell **Calhoun**

019-13-93-14125

10. One stanza in this poem describes a location "where palsy shakes a few, sad, last grey hairs," where the speaker hopes to arrive by ingesting a "beaker full of the warm South." This poem evokes the image of Ruth standing "in tears amid the alien corn." The speaker of this poem admits that "I have been half in love with easeful Death," and is unsure if he experienced "a vision or a waking dream." This poem begins with him saying "my heart aches, and a drowsy numbness pains / my sense." For 10 points, name this poem about an "immortal" bird, by Keats.

ANSWER: "**Ode to a Nightingale**"

020-13-93-14126

11. Canal ray tubes were used by Ives and Stilwell in order to study one variant of this phenomenon important in special relativity. The mathematical description of this effect employs a factor of the wave velocity over the wave velocity plus the relative velocity of the source. Its relativistic form can be used to calculate the radial velocity of galaxies by measuring blueshift or redshift. Radar uses this effect in order to measure speed. For 10 points, identify this perceived change in frequency of a moving wave source, exemplified by the change in pitch of a siren passing by.

ANSWER: **Doppler** effect

226-13-93-14127

12. This author created a businessman who begins randomly assaulting people after reading that he is the only real human in a horde of robots. This creator of Dwayne Hoover and Eliot Rosewater also created the fictional religion of Bokononism in a dystopian novel. In his most famous book, Billy Pilgrim becomes "unstuck in time," possibly a metaphor for his post-traumatic stress after viewing the firebombing of Dresden. For 10 points, name this author of *Breakfast of Champions*, *Cat's Cradle*, and *Slaughterhouse Five*.

ANSWER: Kurt **Vonnegut**

080-13-93-14128

13. This school won its first NCAA basketball championship in 1974 under Norm Sloan. This university plays the annual Textile Bowl against Clemson and plays in Carter Finlay Stadium. Russell Wilson transferred to the University of Wisconsin from this school, which was coached to the 1983 NCAA basketball championship by Jim Valvano. For 10 points, name this ACC school that is located in Raleigh and is nicknamed the Wolfpack.

ANSWER: **North Carolina State** University [or **NC State**; do not accept or prompt on "North Carolina" or "UNC"]

030-13-93-14129

14. This artist faced a roadblock when the pope forbade him from dissecting cadavers. This artist painted a mistress of Ludovico Sforza holding a stoat in *Lady with an Ermine*. He drew an image of a man superimposed over an image of the same man with arms and legs in different positions in his sketch of the *Vitruvian Man*. One of his portraits, also known as *La Gioconda*, depicts a woman with a famously enigmatic smile. For 10 points, name this Renaissance artist and inventor, who painted *The Last Supper* and the *Mona Lisa*.

ANSWER: Leonardo **da Vinci** [ or **Leonardo** da Vinci]

015-13-93-14130

15. A summer festival in this religion is dedicated to improving relationships between brothers and sisters, and it also has a holiday that takes place once every twelve years involving pilgrimages to four sacred cities, the Kumbh Mela. Bilga leaves are offered to a major god of this religion during its month of Phalguna. A spring festival in this religion involves throwing colored powder and is called Holi. For 10 points, name this religion that also celebrates the fall festival of lights Diwali and the birthdays of Rama and Krishna.

ANSWER: **Hinduism**

019-13-93-14131





1. This phenomenon is used with X-rays when determining the structure of a crystal. An equation describing image resolution due to it employs a factor of 1.22 and is named for Rayleigh. Huygens modeled this process by considering every point on a wavefront as a wavesource. Young employed this process in his double-slit experiment in order to prove the wave nature of light. For 10 points, identify this phenomenon in which light bends around an obstacle.

ANSWER: diffraction

226-13-93-14132

2. Secondary battles to the south of this battle included Ligny and Quatre-Bras. Marshall Ney led the final assault in this battle, and the late arrival of Prussian forces under Gebhard von Blucher contributed to the Duke of Wellington's victory in this battle. For 10 points, name this 1815 battle in Belgium that saw the final military defeat of Napoleon Bonaparte.

ANSWER: Battle of Waterloo

030-13-93-14133

3. A non-functional version of the GULO enzyme results in higher primates begin unable to synthesize this molecule. The synthesis of carnitine and the hydroxylation of proline in a collagen molecule both require this molecule as a cofactor. Myriads of clinical trials have disproved Linus Pauling's claim that hearty consumption of this molecule decreases the incidence of common cold. James Lind, a surgeon in the British Royal Navy, provided sailors with food rich in this vitamin to reduce the rampancy of scurvy. For 10 points, name this vitamin present in citrus fruits.

ANSWER: Vitamin C [or L-ascorbic acid; or ascorbate; accept C after "vitamin" is read]

020-13-93-14134

4. This man authored most of George Washington's farewell address, and he anonymously circulated the biting pamphlet *The Public Conduct and Character of John Adams, Esq.* This author of *Report on a National Bank* advocated protective tariffs and investment in infrastructure in his *Report on Manufactures*. For 10 points, name this man who was the first secretary of the Treasury and who was killed in a duel with Aaron Burr.

ANSWER: Alexander Hamilton

030-13-93-14135

5. This theorem is a special case of an extended version proven by Cauchy, which replaces the identity function with a more general differentiable function. When applied to integration, this theorem can be used to prove the first fundamental theorem of calculus. Rolle's theorem is a special case of this theorem. For 10 points, name this theorem which states that for any two points on a differentiable curve, there exists a point between them whose derivative is equal to the slope of the secant line.

ANSWER: mean value theorem

121-13-93-14136

Name the contemporary Indian novelist and political activist who wrote *The God of Small Things*.

ANSWER: Arundhati Roy

This is a calculation question. A cookie jar has 10 oatmeal raisin and 10 chocolate chip cookies. If you randomly pick three cookies, what is the probability they are all chocolate chip? Express your answer as a reduced fraction.

ANSWER: **2/19**