



1. During a presidential election, one man holding this post was asked by Bernard Shaw if he favored the death penalty for a hypothetical rapist and murderer of his wife. That man in this post was attacked by an ad showing him driving a tank and another connecting him to criminal Willie Horton. The longest serving man in this post was the Democratic loser of the 1988 presidential election, Michael Dukakis. This post is currently held by Deval Patrick, who succeeded Mitt Romney in 2007. For 10 points, name this position that leads a certain New England state.

ANSWER: **Governor** of the Commonwealth of **Massachusetts** [prompt on partial answer]

052-13-76-03101

2. Cú Roí (COO roy) urges three rivals to perform this action in the Irish story of the feast of Bricriu (BRYE-croo). During the Aesir-Vanir war, Odin found Mimir after this had occurred to him. Diomedes (dye-AH-muh-deez) does this to the slow-witted Dolon in the Iliad, and another instance of it causes the birth of Chrysaor (chris-EY-or) and Pegasus from the resulting wound. For 10 points, identify this act which Perseus does after defeating Medusa and David does after defeating Goliath.

ANSWER: **decapitation** [or word forms; or **beheading**; or **cutting off heads**, etc.; do not accept or prompt on "killing" or similar answers, since the whole point of the story is that Cu Roi is not killed by having his head cut off]

019-13-76-03102

3. An index of this phenomenon is obtained by measuring the sea level pressure difference between Darwin and Tahiti. This phenomenon results from a weakened Walker Circulation. One of the strongest examples of this quasiperiodic phenomenon occurred in 1982 and 1983 and led to widespread coral bleaching. This phenomenon strongly suppresses upwelling off the coast of Peru, harming anchovy harvests. For 10 points, identify this climate pattern characterized by warm ocean temperatures in the equatorial Pacific, which is contrasted with the cold ocean temperatures of La Niña.

ANSWER: **El Niño**/La Niña-Southern Oscillation [or **ENSO**; prompt on **Southern Oscillation**; do not accept "La Niña"]

066-13-76-03103

4. This President blocked trade on the Great Lakes by vetoing the Rivers and Harbors Bill. This President repealed the Black Tariff in favor of the Walker Tariff. One of this man's military decisions was criticized by Lincoln in the Spot Resolutions. During his presidency, the United States gained the Oregon Territory and annexed Texas. The Treaty of Guadalupe Hidalgo was agreed upon during his term. For 10 points, name this dark horse eleventh President who was in office during the Mexican-American War.

ANSWER: James Knox **Polk**

192-13-76-03104

5. This country's Skomer Island and Ramsey Island are located within St. Bride's Bay, which, along with Cardigan Bay, indents this country's western coast. Carmel Head is on its island of Anglesey, and the Cambrians cut through its middle. Snowdonia is a region in this country, which is north of the Bristol Channel, on which lie Swansea and Cardiff, its capital. For 10 points, name this constituent country of the United Kingdom, located west of England.

ANSWER: **Wales** [or **Cymru**; prompt on **UK** or **United Kingdom** until "capital" is read; do not accept or prompt on "Britain," "England," etc.]

192-13-76-03105

6. One character in this novel gives up the key to Martello Tower and then has a vision of umbilical cords linking all humans back to Eve. Another character in this novel remembers Rudy, his son who died in infancy, while listening to Father Coffey at a wake for Paddy Dignam. A singer in this novel is carrying on an affair with her tour manager, Blazes Boylan. This novel is set on the date of the author's meeting with Nora Barnacle, June 16, 1904, now known as "Bloomsday." For 10 points, name this enormous novel about Leopold Bloom's travels through Dublin, written by James Joyce.

ANSWER: **Ulysses**

019-13-76-03106

7. This operation only exists in seven-space and in three-space. This operation will give the normal to a plane when applied to an independent basis spanning the plane. It can be evaluated by finding the determinant of a three-by-three matrix consisting of the two inputs. It gives the unit vector \mathbf{k} when applied to \mathbf{i} and \mathbf{j} . The right-hand rule is used to find the direction of the result of this operation, which has a magnitude proportional to the sine of the angle between the two input vectors and is perpendicular to them. For 10 points, name this method of vector multiplication distinct from a dot product.

ANSWER: **cross** product [or **vector product**]

190-13-76-03107

8. In 2011, Mitch McConnell compared refusing to do this action to "a hostage that's worth ransoming." This action was done in 2011 after the passage of the Budget Control Act, which created a Congressional "Supercommittee: to propose a deficit reduction plan. Paul Krugman suggested the U.S. mint a trillion dollar coin to get around intransigence to performing this action. Standard and Poor's downgraded the U.S.'s credit rating for the first time in history four days after this action belatedly occurred. For 10 points, name this legislative action that increases the amount the federal government can legally borrow.

ANSWER: **raising** the **debt ceiling** [or **increasing** the **debt limit**; or obvious equivalents]

121-13-76-03108

9. In one of this man's poems, the title character is compared to "Roland's ghost winding a silent horn." This author of "Mr. Flood's Party" wrote another poem in which the speaker comes "out of a grave" to command the title character, "Go to the western gate." This author of "Luke Havergal" also created a "child of scorn" who was "born too late" and therefore "keeps on drinking." Another of his characters was watched by the "people on the pavement" and before he "went home and put a bullet through his head." For 10 points, name this American poet of "Miniver Cheevy" and "Richard Cory."

ANSWER: Edwin Arlington **Robinson**

149-13-76-03109

10. This city, which was formerly known as Fort Gatlin and Jernigan, is the home of educational museums in Lack Haven Park and a public transit system known as SunRail. The Lake Eola fountain is a landmark in this metropolis, which calls itself "The City Beautiful." Though it's not in California, it is the seat of Orange County. Census statistics group it as the largest city of a region that also includes Sanford and Kissimmee. For 10 points, name this Florida city, the home of the University of Central Florida, Universal Studios and Walt Disney World.

ANSWER: **Orlando**

019-13-76-03110

11. While working at the Otis factory, this photographer set up white magnesium flares to overcome technical problems in showing steel production. She took a famous photograph of a line of relief-seekers in front of a mural depicting the "World's Highest Standard of Living," and she collaborated with her husband Erskine Caldwell on the Southern sharecropper volume *You Have Seen Their Faces*. For 10 points, name this photographer of many World War II campaigns who depicted Mohandas Gandhi at his cotton-spinning wheel while working as the lead photographer for *Life* magazine.

ANSWER: Margaret Bourke-**White**

019-13-76-03111

12. This man first proved Albert Girard's original observation that a prime p could only be expressed as the sum of two squares if the prime was congruent to one modulo four. The Taniyama-Shimura conjecture was used by Andrew Wiles to prove one of his theorems, which states that there are no integers that satisfy $a^n + b^n = c^n$ when n is greater than two. Another statement named for this man is $a^p \equiv a \pmod p$, where a is an integer and p is a prime number. For 10 points, name this French mathematician who has "little" and "last" theorems.

ANSWER: Pierre de **Fermat**

189-13-76-03112

13. This type of stanza is used when writing a pantoum. This stanza form includes a type that became popular following its use in the poem "In Memoriam" by Lord Tennyson. A work written with a type of this stanza called a *roba'i* was created by Omar Khayyam. Thomas Gray used this form in his "Elegy Written in a Country Churchyard." Three of these stanza units occur before a concluding rhyming couplet in a Shakespearean sonnet. For 10 points, name this type of poetic stanza that consists of four lines.

ANSWER: **quatrain** [or **four-line** stanzas before it is read]

023-13-76-03113

14. One composition by this man features flutes playing staccato to represent fallen tears, three massive choruses, and narration by a tenor Evangelist. This composer used an Upper Saxon dialect in a short piece describing tax collection in the eighteenth century, his *Peasant Cantata*. Due to the fact that he worked for Protestant princes, four of this man's five masses contain only the "Kyrie" and "Gloria," in line with the usual Lutheran practice. However, he set the entire Latin service in his landmark *Mass in B minor*. For 10 points, name this prolific German composer of the *Brandenburg Concertos* and a *Toccata and Fugue in D minor*.

ANSWER: Johann Sebastian **Bach**

019-13-76-03114

15. At the end of this novel, someone suggests the title character had previously been locked up in Deer Creek. The protagonist's home is described as "spiteful" and "full of baby's venom" in its opening. In this novel, Denver escapes to live with Lady Jones and begins working for Mr. Bodwin, and when Denver's mother tries to attack Mr. Bodwin with an ice pick, the title woman disappears. That woman may be the spirit of a child who died eighteen years earlier, when Sethe killed her daughter rather than allow her to return to slavery. For 10 points, name this novel by Toni Morrison.

ANSWER: **Beloved**

121-13-76-03115



1A. Which physicist formulated two laws governing electrolysis, as well as an equation relating the induced voltage to the time rate of change of magnetic flux?

ANSWER: Michael **Faraday**

1B. What autonomous community in Spain is led by Artur Mas of the CiU, who called for a possible referendum of secession?

ANSWER: **Catalonia**

2A. Name the Dutch artist who painted *Ship of Fools* and *The Garden of Earthly Delights*.

ANSWER: Hieronymus **Bosch** [or Jheronimus van **Aken**]

2B. What tobacco farmer and widower married Pocahontas in 1614?

ANSWER: John **Rolfe**

3A. What source of authority in Islam, which complements the Quran, is a saying of Muhammed that is accompanied by an accounting of the chain of transmission called an *isnad*?

ANSWER: **hadith**

3B. What Italian author who wrote *Henry IV* in addition to *Six Characters in Search of an Author*?

ANSWER: Luigi **Pirandello**

4A. This is a 20-second calculation question. Find the perimeter of a 30-60-90 right triangle in which the shortest side has length 4.

ANSWER: **12 plus 4** times the square **root of 3** [or **12 plus 4 radical 3**; or numerical equivalents]

4B. This is a 20-second calculation question. In terms of pi, what is the volume of a right circular cone whose height is 10 and whose base has a radius of 3?

ANSWER: **30 pi**

5A. What organelle contains acidic hydrolase enzymes that allow it to break down waste?

ANSWER: **lysosome**

5B. Mount Pinatubo, the Batangas Peninsula, and Manila are found on what island, the largest of the Philippines?

ANSWER: **Luzon**

6A. Under what type of reversal transformation are the laws of physics symmetric if they only exhibit T-symmetry?

ANSWER: **time**

6B. What British poet of "I Wandered Lonely as a Cloud" also wrote the collection *Lyrical Ballads* with Samuel Taylor Coleridge?

ANSWER: William **Wordsworth**

7A. Name the ruler who wrote the *Res Gestae* to highlight his accomplishments, including the victory of his general Marcus Agrippa over Mark Antony at the Battle of Actium.

ANSWER: **Augustus** Caesar [or Gaius **Octavius**; or Gaius Julius Caesar **Octavianus**]

7B. What term is used to describe a substance that provides immunity to a particular disease and derives from Edward Jenner's use of cow pox to inoculate against small pox?

ANSWER: vaccine

8A. This is a 30-second calculation question. A bag contains three green marbles, five red marbles, and one blue marble. If three marbles are drawn at random without replacement, what is the probability that they are all red? Give your answer as a fraction in lowest terms.

ANSWER: 5/42

8B. This is a 30-second calculation question. Find the sum of the squares of the roots of the quadratic $x^2 - 3x - 10$.

ANSWER: 29

9A. What Czech novelist and playwright coined the term "robot" in his play *R.U.R.*?

ANSWER: Karel Capek

9B. What process, in which atomic nuclei are combined, is achieved in stars via the proton-proton chain and CNO cycle?

ANSWER: nuclear fusion

10A. Name the family of evolutionary anthropologists who discovered such specimens as the Turkana Boy while working at Olduvai Gorge and later became involved in Kenyan politics.

ANSWER: Leakey family

10B. What television show that features Donald Glover and Joel McHale as college students at Greendale had Chevy Chase quit after its fourth season?

ANSWER: Community



1. A compound containing three of this functional group is bonded to fatty acids in most fats. Fischer projections show the stereochemistry of carbons bonded to this functional group. Two examples of this functional group are found in antifreeze. Glucose contains five of them. The simplest compound with this functional group can cause blindness if consumed and is called the "wood" type of this group. Compounds with this functional group are synthesized in yeast fermentation. For 10 points, name this functional group consisting of oxygen bonded to hydrogen, which is present in ethanol and other alcohols.

ANSWER: **hydroxyl** [or **alcohol** before mention]

190-13-76-03117

2. This poem discusses objects of which "some are loaves and some so nearly balls, we have to use a spell to make them balance." This poem's speaker claims, "Spring is the mischief in me," and he says of another man that "he is all pine and I am apple orchard." The speaker of this poem claims that "something there is that doesn't love" the title structure and "sends the frozen-ground-swell under it." The refrain "good fences make good neighbors" appears in, for 10 points, what Robert Frost poem about a barrier?

ANSWER: "**Mending Wall**"

126-13-76-03118

3. This team nearly changed its nickname in 1994 to the "Swamp Dragons." This team's first draft pick in the NBA was Bernard King. An expected surge in this team's performance was delayed after a 1993 car wreck killed guard Drazen Petrovic. This team fired Lawrence Frank in 2010 after they lost sixteen straight games to start the season. They reached the 2002 and 2003 NBA Finals largely due to Jason Kidd, and won two ABA championships behind Julius Erving. For 10 points, name this NBA team, partially owned by Jay-Z, which in 2012 moved to its new home from New Jersey.

ANSWER: **Brooklyn** Nets [or Brooklyn **Nets**; or **New Jersey** Nets until it is read; prompt on **New York** Nets, their original name]

088-13-76-03119

4. With reflexive verbs in this aspect, French uses "être" rather than "avoir" as the auxiliary verb. Spanish uses "haber" as the auxiliary verb to this aspect in all cases. In English, this aspect is formed by following a conjugated form of "to have" with the past participle. For 10 points, name this verb aspect that refers to past actions bearing on the present, as in the phrase, "I have finished," and in most languages is closely linked to the past tense.

ANSWER: **perfect** aspect [or **perfect** tense]

121-13-76-03120

5. One of these animals narrates his life with Benjamin Franklin in Robert Lawson's book *Ben and Me*. In a 1997 movie, one of these animals outwits Lars and Ernie as they try to restore an inherited mansion. Charlie Gordon is angry at constantly losing contests to one of them, who has been given the same IQ-increasing treatment as Charlie, in the Daniel Keyes story "Flowers for Algernon." The protagonist of *Basil of Baker Street* is one of them; that book series was the inspiration for an animated film in which one of these animals defeats Professor Ratigan. For 10 points, name these rodents.

ANSWER: **mouse** [or **mice**]

121-13-76-03121

6. This leader spent 800 days in a headquarters called the "Wolf's Lair." This ruler's last will named his secretary Martin Bormann as Party Minister. This man's military drafted planned invasions known as Case White and Case Blue. He was almost killed during the failed 20 July Plot, which was part of Operation Valkyrie. This man dictated his autobiography to Rudolf Hess while imprisoned after the failed Beer Hall Putsch. He committed suicide shortly after marrying Eva Braun. For 10 points, name this dictator who led Nazi Germany from 1934 to 1945.

ANSWER: Adolf **Hitler**

052-13-76-03122

7. This computer scientist created the concept of the arithmetic logic unit. With Stanislaw Ulam, this scientists developed, and named, Monte Carlo methods. He created an algorithm that divides a list of length n into n sublists, then concatenates them in an organized fashion to sort them. That algorithm is merge sort. The Harvard architecture is a rival scheme for computer organization to one this scientist devised. For 10 points, identify this man who created an architecture in which instructions and memory access occur on the same bus.

ANSWER: John **von Neumann**

066-13-76-03123

8. One of this deity's possessions is a bead known as a "magatama"; that, along with two other objects, was given to Ninigi. This figure went hiding into a cave after her brother threw a dead horse into her chambers, and she split from her other brother after he killed the goddess of food, Uke Mochi. This goddess owns the sword Kusanagi, and she was born from Izanagi's left eye. For 10 points, name this sister of Tsukuyomi (SOO-koo-YO-mee) and Susanoo (SOO-sah-NO-wo), a solar deity from Shinto myth.

ANSWER: **Amaterasu**

192-13-76-03124

9. The first man credited with breeding these organisms was Charles W. Woodworth. Many of them were found at a namesake room at Columbia University where they were raised inside milk bottles. One scientist noted a white-eyed mutant male among all red-eyed types, leading to the use of these animals to study heredity by Thomas Hunt Morgan. Their average development time is about 8 days. For 10 points, give the family, species, or common name of this popular model organism, an insect noted for breeding quickly and laying many eggs at a time.

ANSWER: **Drosophila melanogaster** [or **Drosophilidae**; or common **fruit fly**; or **vinegar fly**]

052-13-76-03125

10. Leaders of this organization have denied allegations that one of its leaders assumed the identity of David Ford-el and then temporarily headed the Moorish Science Temple of America. A month after leaving this group, a man gave the "Ballot or the Bullet" speech. Some of the teachings of this organization focus on a scientist named Yakub. Members of this organization were responsible for an assassination in the Audubon Ballroom. Its leaders have included Wallace Fard Muhammad and Louis Farrakhan. For 10 points, identify this American religious organization that was left in 1964 by Malcolm X.

ANSWER: **Nation of Islam**

189-13-76-03126

11. A revision of this opera condensed it to two acts and changed its title to the name of the main male character. Before begging for a crust of bread, one character in this opera is praised in "Euch werde Lohn in bessern Welten." A trumpet signifies the arrival of Don Fernando in this opera, which features "Mir ist so wunderbar," or the Canon Quartet. Opening with a duet between Jaquino and the daughter of the jailer Rocco, Marcelline, this opera is about Leonore, who dresses up as the title character to save her husband Florestan. For 10 points, name this only opera by Ludwig van Beethoven.

ANSWER: Fidelio

192-13-76-03127

12. This leader sent Boris Sheremetyev as an envoy to the Knights of Malta. During this man's reign, Yury Dolgorukov was assassinated, which sparked the Bulavin Rebellion. This ruler took part on an international expedition called the Grand Embassy while using the fake family name Mikhailov. Domestically, this man placed a tax on beards, weakening his country's noble class known as boyars. This man's forces fought the Battles of Narva and Poltava against Charles XII of Sweden during the Great Northern War. For 10 points, name this modernizing, eighteenth-century tsar of Russia.

ANSWER: Peter I of Russia [or Peter the Great; or Pyotr Alekseyevich; or Pyotr Veliky; prompt on Peter]

192-13-76-03128

13. This author outlined his principles of writing in the essay "The World and the Jug." In a short story by this author, a man waits for a movie to end so that he can attempt to win \$36.90 in a bingo game. This author also created a man who is accused of kidnapping Tod Clifton after adding "concentrated remover" to the "Optic White" batch at the Liberty Paints factory. He also created Alonzo Hickman, who fails to avert the assassination of the racist and possibly black Adam Sunraider in *Juneteenth*. For 10 points, name this African American author of *Invisible Man*.

ANSWER: Ralph Ellison [or Ralph Waldo Ellison]

019-13-76-03129

14. Depending on whether geometry is preserved or not, there are adiabatic and vertical varieties of this quantity. A property for the highest occupied molecular orbital is equated to this quantity via Koopmans' theorem. Mercury has an unusually high one. This quantity is the opposite of electron affinity. Due to shielding, this quantity generally decreases down a group, but increases across a period. For sodium, the second one is way higher than the first one. For 10 points, name this energy required to remove an element from an atom.

ANSWER: first ionization energy [or first ionization enthalpy; just ionization needed after "energy" is read]

020-13-76-03130

15. In one story by this author, James Nolan writes a script for the assassination of Fergus Kirpatrick, who betrayed the 1821 Irish rebellion. Another Irish rebellion one hundred years later is the setting for his story of how John Vincent Moon came to bear a scar on his face. This author of "The Theme of the Traitor and the Hero" and "The Form of the Sword" also wrote of a lottery which grows to encompass the entirety of life in Babylon, and of an endless structure containing all possible books, the Library of Babel. For 10 points, name this blind Argentinian author of *Ficciones*.

ANSWER: Jorge Luis Borges

019-13-76-03131



1. One type of these compounds can be used to bring ionic salts into an organic phase and are called the "phase transfer" type of them. One mole per second is the namesake SI unit describing the function of these species. In hydrogenations, noble metals often serve this purpose. These compounds do not change the position of an equilibrium, and they work by lowering the activation energy barrier for a reaction. In biology, protein ones are called enzymes. For 10 points, name this species which speed up chemical reactions.

ANSWER: catalysts

190-13-76-03132

2. One species belonging to this phylum which is used in pest control is *H. indica*; that organism, along with *C. briggsae*, belongs to this phylum's order of rhabditida. Members of this phylum possess a pseudocoelom body cavity but lack a circulatory system. Mello and Fire studied one organism in this phylum amidst their studies of RNA interference; that model organism, which was studied by Sydney Brenner, was the first multicellular organism to have its entire genome mapped. This phylum includes the trichinella worm and *C. elegans*. For 10 points, identify this phylum composed of frequently parasitic roundworms.

ANSWER: nematoda [or nematodes; prompt on roundworms before mentioned]

189-13-76-03133

3. In one poem, this author predicts that "the golden Muses have truly blessed me, I shall not be forgotten after death." A stanza of one short line followed by three long ones is named for this poet, who described summoning a goddess borne on doves to avenge a spurned lover in the "Ode to Aphrodite." Classical sources describe this author exchanging work with Alcaeus and throwing herself off the Leucadian cliffs to her death. Like the later Corinna, she was called the "tenth Muse." For 10 points, name this ancient Greek poet from the island of Lesbos.

ANSWER: Sappho

019-13-76-03134

4. One character in this work insincerely praises a work called "The Couch of Eros" in order to mitigate the anger of another character. That scene also features a character who inquires about the consequences of stirring rice pudding. Characters in this work include Lady Croom, Ezra Chater, and Valentine. Chaos theory and entropy feature prominently in this work, in which Bernard Nightingale and Hannah Jarvis research the past. For 10 points, identify this play featuring a romance between Septimus Hodge and Thomasina Coverly, a time-shifting play by Tom Stoppard.

ANSWER: Arcadia

189-13-76-03135

5. Niels Bohr proposed stationary orbits and the quantization of this quantity in order to formulate his model of the atom, showing that it is an integer multiple of h -bar. Kinetic energy equals this quantity squared divided by twice the moment of inertia. The shape of an atomic orbital is given by this quantity's namesake quantum number. Kepler's Second Law results from the conservation of this quantity. It equals the product of mass, velocity, and radius for an object in uniform circular motion, and time derivative of it is torque. For 10 points, name this quantity symbolized L .

ANSWER: angular momentum [or L before mention]

190-13-76-03136

This is a calculation question. What are the coordinates of the vertex of the parabola whose graph is $y = x^2 + 4x - 10$?

ANSWER: **$(-2, -14)$** [or **$x = -2, y = -14$**]

Name the ruler who made the Behistun Inscription and whose army was defeated at the Battle of Marathon in the first Persian invasion of Greece.

ANSWER: **Darius the Great** [or **Darius I**; prompt on **Darius**]