

1. In one novel by this author, the protagonist's mother ends her relationship with the communist Charles Carter after Stalin signs a nonaggression pact with Hitler. In addition to *Davita's Harp*, another work by this author details the life of the title man, including his tutelage by Jacob Kahn, before that artist paints his masterpiece, Brooklyn Crucifixion. Another work by this author describes the teen years of Reuven Malten in New York City. For 10 points, name this author who wrote *The Chosen* and *My Name is Asher Lev*.

ANSWER: Chaim (CCHIGH-im) **Potok**

081-10-24-04101

2. The cage effect partially describes the relationship between the reaction rate and the rate at which this process occurs; those reactions are limited not by activation but by this process. It is roughly inversely proportional to the square root of molar mass. This process is modeled by Fick's Laws, which involve the spatial derivatives of concentration. When water undergoes this process, it is called osmosis. For 10 points, name this net mass movement of solute from higher concentrations to lower concentrations.

ANSWER: **diffusion**

003-10-24-04102

3. This man composed *Au bord d'une source* (oh BORE doon SOORCE) as part of his piano cycle, *Années de Pèlerinage* (ah-NAY duh peh-luh-rin-AHJ). This composer of *Liebesträume* (LEE-bus-TROY-muh) developed the one-movement symphonic poem, examples of which include *Tasso* and *Les préludes*. He composed 12 *Transcendental Etudes* and wrote the *Mephisto Waltz*. For 10 points, name this composer of nineteen *Hungarian Rhapsodies*.

ANSWER: Franz **Liszt**

001-10-24-04103

4. In music theory, a pair of major and minor scales, sharing the same notes but with the minor starting on the sixth note of the major, are known as this kind of scales. In grammar, it describes pronouns such as "which" and "who." In meteorology, the actual vapor density over the saturation vapor density is known as this kind of humidity. For 10 points, give this word, which can also describe members of one's kinship group or something defined in terms of another thing.

ANSWER: **relative**

019-10-24-04104

5. Malus's Law gives the intensity of a light ray after it is subjected to this process. This process is often performed in commercial products through the use of dichroic materials, and commonly comes in circular and linear types. It also occurs by reflection when the incident light ray comes in at Brewster's angle. For 10 points, name this process by which a light ray's waves are made to oscillate in only one direction, which is commonly done using Polaroid filters.

ANSWER: **polarization** [or word forms]

003-10-24-04105

6. This man rose to prominence following the fall of moderate Georges Danton. The event with which this man is most associated saw the deaths of Madame Roland and many Girondists, as well as Marie-Antoinette; that event was organized by this man's Committee of Public Safety. This man was killed with the same device to which he had sentenced many others, and by which Louis XVI died. For 10 points, name this man who sent many to the guillotine during his "Reign of Terror" during the French Revolution.

ANSWER: Maximilien Francois Marie Isidore de **Robespierre**

081-10-24-04106

7. This building's construction was delayed by a controversy over the stress tolerance of plywood known as Malice in Blunderland, and it was completed by Peter Hall. This building's reception hall was redesigned in 1999 by its original architect, and it added a colonnade on the exterior in 2001. It overlooks Port Jackson and includes underground chambers where performers prepare. For 10 points, name this building which features overlapping sail-like shells, a musical space designed by Jorn Utzon and found in Australia.

ANSWER: the **Sydney Opera House**

019-10-24-04107

8. In one story, this god is the first to be tried for murder after killing Halirrhothius to protect his daughter Alcippe (al-KIP-ee). This god was trapped in a giant bronze bar by giants called the Aloadae (ah-LOW-uh-dye). Through Rhea Silvia, this god is sometimes credited with fathering Romulus and Remus. He angers Hephaestus by sleeping with Aphrodite and is accompanied by personifications of terror and fear named Phobos and Deimos. For 10 points, name this Greco-Roman god of war.

ANSWER: **Ares** [or **Mars**]

015-10-24-04108

9. This man's papers were collected in *The Farther Reaches of Human Nature*. He described moments of profound happiness that he called "peak experiences," which many of his subjects repeatedly experienced. He proposed that humans must attain physical needs such as water and food, then safety needs, and once a person achieved those they could potentially reach self-actualization. For 10 points, name this humanist psychologist who created the concept of the Hierarchy of Needs.

ANSWER: Abraham Harold **Maslow**

027-10-24-04109

10. In a Senate campaign, this politician labeled his opponent, Helen Douglas, the "Pink Lady." His first Vice President was a Maryland governor who resigned after a tax scandal. This president agreed to the Stennis Compromise after he dismissed Archibald Cox, an event that led to the resignations of Elliot Richardson and William Ruckelshaus and is known as the "Saturday Night Massacre." Gerald Ford pardoned this president. For 10 points, name this president who resigned amidst the Watergate Scandal.

ANSWER: Richard Milhous **Nixon**

026-10-24-04110

11. This figure has a dialogue with the giant Vafprudnir (VAF-prude-neer) in the *Vafprudnismal* (VAF-prude-nees-mall). He disguised himself as a stranger to test the generosity of Grimnir. This mythological figure sacrificed an eye for the water of Mimisbrunnr (MEE-meas-broon). This god's son Vidar will avenge this figure's death at the hands of the Fenris wolf. This husband of Frigg was the father of Balder. For 10 points, name this chief god of Norse mythology.

ANSWER: **Odin** [or **Wotan**; or **Woden**]

030-10-24-04111

12. One example of this form of novel is a C. S. Lewis work that references "Our Father Below," about a demon. Another example is a novel about Celie by Alice Walker. In addition to *The Color Purple* and a work titled after Screwtape, one work of this type consists of a series of missives to Margaret Walton from her brother Robert, who meets the title doctor in the Arctic. For 10 points, identify this type of fictional work which consists of letters, exemplified by *Frankenstein* and *The Screwtape Letters*.

ANSWER: **epistolary** novel [prompt on **novel in letters** or similar answers]

081-10-24-04112

13. This person incurred extensive debts while running a journal called *The Revolution*, but the backing of Laura Bullard helped to salvage the endeavor. She split with Frederick Douglass following the passage of the Fifteenth Amendment. She was imprisoned after attempting to vote in the 1872 presidential election. For 10 points, name this suffragette who worked with Elizabeth Cady Stanton and was honored on a dollar coin.

ANSWER: Susan Brownell **Anthony**

040-10-24-04113

14. A recent ruling against this legislation was criticized for its neglect of the Necessary and Proper Clause. McDonald's was issued a waiver for its hourly employees under this legislation, and the Congressional Budget Office has claimed this law will cut \$143 billion from the federal deficit by 2020. It will allow for the creation of high-risk pools, and already mandates an 80 percent medical loss ratio for insurers. It also allows children to stay on their parents' plans until age 26. For 10 points, name this 2010 health care bill.

ANSWER: Patient Protection and **Affordable Care Act**

082-10-24-04114

15. Though not the namesake of any free energies, this man introduced thermodynamics into the chemistry curriculum in the textbook *Thermodynamics and the Free Energy of Chemical Substances*, co-authored with Merle Randall. Along with Irving Langmuir, he theorized that atoms either donated, accepted, or "shared" electrons to get to a valence of eight. He also defined an acid as an electron pair acceptor and a base as an electron pair donor. For 10 points, name this chemist who is also the namesake of electron dot structures used to represent covalently bonded compounds.

ANSWER: Gilbert Newton **Lewis**

003-10-24-04115

1A. Name this normally-toxic element which researchers have recently claimed can replace phosphorous in the DNA of certain bacteria without killing them.

ANSWER: **arsenic**

1B. Which Greek letter is used in equations named after Kronecker and Dirac that return one of two values depending on whether a variable or variables are equal to a certain other value?

ANSWER: **delta**

2A. Raymond Cattell distinguished between "crystallized" and "fluid" versions of what concept, whose "quotient" is measured in IQ?

ANSWER: **intelligence**

2B. Name this leader of the Protestant Reformation who found sanctuary in Switzerland and whose namesake doctrine is best known for embracing predestination in opposition to the idea of free will.

ANSWER: John **Calvin**

3A. This is a 10-second calculation question. Expand quantity $2x + 1$ end quantity times quantity $x + 2$ end quantity.

ANSWER: **$2x^2 + 5x + 2$**

3B. This is a 10-second calculation question. What is quantity $16x^2 + 32x + 16$ end quantity divided by quantity $2x + 2$ end quantity?

ANSWER: **$8x + 8$**

4A. What troublemaker is the friend of Milhouse and son of Marge and Homer on *The Simpsons*?

ANSWER: **Bartholomew Jojo Simpson**

4B. What clarinetist and big band leader performed "Stompin' at the Savoy" and was known as the "King of Swing"?

ANSWER: Benjamin David "Benny" **Goodman**

5A. This is a 20-second calculation question. What is the difference between the volume and surface area of a cube with sides of length 12?

ANSWER: **864**

5B. This is a 20-second calculation question. Two angles of a triangle are 30 degrees and 45 degrees. If the side opposite the 30 degree angle is of length 4, what is the length of the side opposite the 45 degree angle?

ANSWER: **8 divided by the square root of 2** [or **4 times square root of 2**]

6A. What Nine Inch Nails song had a certain lyric changed to "crown of thorns" when it was covered by Johnny Cash?

ANSWER: "**Hurt**"

6B. Danny Briere, Claude Giroux, and Jeff Carter are forwards for what NHL team, whose previous incarnations have featured lines nicknamed "The Legion of Doom" and the "Broad Street Bullies"?

ANSWER: **Philadelphia Flyers** [or Philadelphia **Flyers**]

7A. This is a 30-second calculation question. What is the population standard deviation of the set {2, 4, 8, 16, 24, 28, 30}?

ANSWER: square **root** of **808/7** [or square **root** of **115 3/7**]

7B. This is a 30-second calculation question. What is the probability of a flipped coin landing heads up 16 times in a row?

ANSWER: **1/65536** [prompt on **one over 2 to the sixteenth**]

8A. She wrote an early post-apocalyptic science fiction novel, *The Last Man*. Name this author, who is sometimes credited with founding the sci-fi genre by writing *Frankenstein*.

ANSWER: Mary Wollstonecraft **Shelley** [or Mary **Godwin**; do not accept or prompt on "Mary Wollstonecraft"]

8B. Name the country where policeman Mumtaz Qadri assassinated provincial governor Salman Tasser in January 2010, allegedly in support of a controversial blasphemy law.

ANSWER: Islamic Republic of **Pakistan** [or Jamhuryat Islami **Pakistan**]

9A. What operating system schedulable unit of execution comes in kernel and user types and is intermediate between a process and a fiber?

ANSWER: **thread** [or **light weight process**]

9B. Name this existentialist author who depicted the amoral Meursault in *The Stranger* and also wrote "The Myth of Sisyphus."

ANSWER: Albert **Camus**

10A. In Latin, adding the suffix "era-" along with personal endings to the perfect stem produces what tense, which indicates that an action "had been carried out"?

ANSWER: **pluperfect** [or **plusquamperfectum**]

10B. The Trung Sisters are traditional heroes of what present-day country, whose former political regimes included the Le Dynasty and the empire of Bao Dai?

ANSWER: Socialist Republic of **Vietnam** [or Cong Hoa Xa Hoi Chu Nghia **Viet Nam**]

1. These particles are found in muon, tau, and electron varieties, and their existence was originally proposed to maintain conservation of energy, momentum, and angular momentum in beta decay. These particles are affected by the weak force, and devices built to examine this particle must be very large because it is notably difficult to detect. For 10 points, name this subatomic particle whose name suggests that it is smaller than a neutron.

ANSWER: neutrino

081-10-24-04117

2. Reproduction of this animal entails the male biting the female on her side, after which he releases an enzyme to physically fuse his body to hers until he remains just a pair of testes. The most notable feature of this animal is the result of bacteria-induced bioluminescence, and is a light dangling at the end of a rod-shaped feature above this animal's head. For 10 points, name this frightening-looking fish so named because the aforementioned feature makes it appear to be fishing.

ANSWER: anglerfish

081-10-24-04118

3. The Alhambra Decree affected certain members of this group, which geography divides into the Ashkenazi and the Sephardi. This group was subject to the blood libel, which was responsible for several pogroms against it. The most notable action against this group saw the attack of Kristallnacht and deportation of members of this group to places such as Dachau and Auschwitz. For 10 points, name this religious group persecuted during both the Spanish Inquisition and the Holocaust.

ANSWER: European Jews

081-10-24-04119

4. Four-dimensional versions of these objects make up a Minkowski space. The parallelogram rule is used for adding these objects. One operation involving them is only valid in three or seven dimensions, and another operation involving them uses the product of the lengths of two of them and the cosine of the angle between them. Those operations are the cross product and the dot product. For 10 points, name these objects which have both magnitude and direction, unlike scalars.

ANSWER: vectors

024-10-24-04120

5. In a work dedicated to the "season of mists and mellow fruitfulness," this poet asked "where are the songs of spring?" This poet asked "what maidens loth?" and "what mad pursuit?" in a poem dedicated to a "still unravish'd bride of quietness." In that poem, this poet of "To Autumn" claimed that "all ye know on earth, and all ye need to know" is that "beauty is truth, truth beauty." For 10 points, name this Romantic British poet who wrote "Ode on a Grecian Urn."

ANSWER: John Keats

026-10-24-04121

6. The Doppel gene product is structurally and functionally similar to these. URE3 is an example of one in yeast. These can lead to the formation of amyloid fibers. The SC isoform is responsible for their behavior. They were discovered by Stanley Prusiner and in the non-misfolded state they play a normal role in the nervous system. Diseases caused by them include scrapie, kuru, and Creutzfeldt-Jakob disease. For 10 points, name these infectious proteins that cause mad cow.

ANSWER: prions

001-10-24-04122

7. This czar gave Mikhail Muravyov considerable power in Poland, leading him to be known as "the Hangman" for his harsh sense of justice during the January Uprising. He established a more sophisticated system of local governments with his implementation of the zemstvo system, but his reforms were cut short by his death at the hands of the People's Will. Succeeding Nicholas I at the close of the Crimean War, for 10 points, name this Russian czar best known for emancipating the serfs.

ANSWER: **Alexander II** of Russia [or **Alexander Nikolayevich**; prompt on **Alexander**]

040-10-24-04123

8. The first group of stories in this author's *t zero* feature the eternal being Qfwfq (KIF-wif-ick) narrating fantastic tales based around scientific facts, a formula repeated from this author's earlier *Cosmicomics*. He collected brief descriptions of 55 urban areas framed as a conversation between Kublai Khan and Marco Polo in *Invisible Cities*. This man also wrote a work featuring the Reader and the Other Reader in which every other chapter is written in second person. For 10 points, name this Italian author of *If on a winter's night a traveler*.

ANSWER: Italo **Calvino**

082-10-24-04124

9. A depiction of this scene by William-Adolphe Bouguereau (boo-ger-OH) shows two men blowing conch shells. A better known depiction of this scene features flowers floating through the air while a man produces wind from his mouth. That depiction also features a woman handing a pink cloak to the main figure, who stands nude on a conch shell. Sandro Botticelli painted a well known version of, for 10 points, what mythological scene which shows the conception of a certain Roman goddess?

ANSWER: *The **Birth of Venus*** [or ***Nascita di Venere***; or ***La Naissance de Vénus***]

040-10-24-04125

10. This nation's port cities include Cristobal and Almirante, while its main mountain range is alternately known as the Cordillera de Talamanca and the Serrania de Tabasara. Its most notable geographical feature utilizes the Miraflores and Gatun Lakes and features extensive locks near both those bodies of water. For 10 points, name this Central American country that borders Colombia and is home to a namesake canal.

ANSWER: Republic of **Panama** [or República de **Panamá**]

040-10-24-04126

11. This poet claimed that "place avails not" and "distance avails not" in a poem in which he imagines seeing the reader "face to face." In another poem, this poet claims that he stops "somewhere waiting for you" after sounding his "barbaric yawp" over the roofs of the world. This author's primary collection contains the sections "Drum Taps" and "Calamus Poems." For 10 points, name this American poet of "Crossing Brooklyn Ferry" whose *Leaves of Grass* contains his poem "Song of Myself."

ANSWER: Walter "Walt" **Whitman**

026-10-24-04127

12. This woman wrote a story in which a shoe salesman named R. J. Bowman lives out his last hours in the house of a country family he doesn't know. This author of "Death of a Traveling Salesman" described Phoenix Jackson's trip for medicine in "A Worn Path." In one of her novels, Laurel Hand cares for her dying father, Judge McKelva. For 10 points, name this author of the novel *The Optimist's Daughter* and the story "Why I Live at the P.O."

ANSWER: Eudora **Welty**

079-10-24-04128

13. This scientist was the first to note that Mars's polar caps have seasonal changes, leading this man to propose that they are made of water. He was the first to realize that double stars actually contained two gravitationally bound stars, leading to him coining the term binary star. This man also coined the word asteroid. He discovered Enceladus and Mimas, as well as infrared radiation. This scientist discovered the moon Oberon, as well as the object it orbits. For 10 points, name this discoverer of Uranus.

ANSWER: Sir Friedrich Wilhelm **Herschel**

001-10-24-04129

14. One event during this man's administration was a crisis caused by the passage of the Tariff of Abominations over the issue of nullification. Another event saw this man force the removal of many Cherokee natives from their homes in Georgia during the Trail of Tears. The Second Bank of the U.S. was abolished under him. For 10 points, name this man nicknamed "Old Hickory," who succeeded John Quincy Adams as the seventh president.

ANSWER: Andrew **Jackson**

081-10-24-04130

15. A park in this city is known for being the first county park in the nation and for its cherry blossoms. Much of city's subway line runs along that park, Branch Brook Park. This city's Ironbound neighborhood is known for its Portugese population, and the arrest of cabdriver John W. Smith led to a 1967 race riot here. Neighboring Elizabeth is also home to part of this city's namesake airport, which had "Liberty" appended to its name after 9/11. For 10 points, name this city eight miles west of New York, the largest in New Jersey.

ANSWER: **Newark**, New Jersey

082-10-24-04131

1. In one novel by this author, the protagonist almost decides to join the agrarian community of a Mexican woman named Terry. Old Bull Lee is a drug addict who appears in a novel by this author, who described climbing Matterhorn Peak with Gary Snyder in his novel *The Dharma Bums*. This author fictionalized himself as Sal Paradise in a novel that centers on his escapades with Neal Cassady, who is fictionalized as Dean Moriarty. For 10 points, name this writer from the Beat generation who wrote *On the Road*.

ANSWER: Jean-Louis "Jack" **Kerouac**

026-10-24-04132

2. Like hydrocarbons, this compound has unusually high concentration in photochemical smog in relation to other kinds of smog. Although only about ten percent of the total amount of it in the atmosphere is in the troposphere, it is nevertheless classified as a greenhouse gas. This molecule is broken down in a radical reaction with CFCs. For 10 points, name this ultraviolet light-absorbing molecule whose namesake "layer" now has a hole in it.

ANSWER: **ozone** [or **O₃**]

003-10-24-04133

3. One of this author's novels sees the title character tracked by Jacques Moran after he had traveled across the countryside on a bike, killing a woman's dog and even murdering an acquaintance. That novel, *Molloy*, is part of his namesake trilogy. He is better known for plays, such as one in which two characters encounter Lucky and Pozzo while awaiting a character who never appears. For 10 points, name this Irish dramatist of *Waiting for Godot*.

ANSWER: Samuel **Beckett**

040-10-24-04134

4. This compound is produced in a process that uses Glover towers to remove nitrogen oxide called the lead chamber process. This compound and a gas that generates it are found in a solution called oleum, which is formed with a vanadium pentoxide catalyst in the contact process. Also called "oil of vitriol," it is a major component of car batteries, Venus's atmosphere, and acid rain. For 10 points, name this acid with formula H₂SO₄.

ANSWER: **sulfuric acid** [or **oil of vitriol** it is read; or **H₂SO₄** before it is read]

079-10-24-04135

5. This man was defeated by 999 votes by Henry S. Foote for the Mississippi governorship after returning from a foot wound at the Battle of Buena Vista. He negotiated the Gadsden Purchase as Franklin Pierce's Secretary of War. His Secretary of State was Judah Benjamin. This man, who was captured in Irwinville, Georgia, removed his first Commander-in-Chief of his Army in favor of Robert E. Lee. For 10 points, name this President of the Confederate States of America.

ANSWER: Jefferson **Davis**

079-10-24-04136

What metrical foot, more easily constructed in Latin or Greek than English, consists of two stressed syllables in a row?

ANSWER: **spondee** [or **spondaic**]

079-10-24-04137

This is a calculation question. Solve for x in $x + y = 100$, $y + 7 = 3y - 2$.

ANSWER: $x = \mathbf{191/2}$ [or $x = \mathbf{95.5}$]

079-10-24-04137