



1. This second famous painting use the model Victorine Meurent includes a set of dark green drapes that nearly camouflage a black cat on the right. A gift of a bouquet of flowers is ignored by the title figure of this work, who wears a pink flower by her left ear. A black servant is the only other figure in this painting, which focuses on a woman who nearly casts off her slipper, reclines on white bedding, and stares defiantly at the viewer, awaiting her next client. For 10 points, name this Manet painting depicting a prostitute.

ANSWER: Olympia

020-12-71-13101

2. In one of this author's works, a chaplain relates a story about a man who is barred from a path that he is meant to cross by a gatekeeper. The protagonist of that story is defended by Herr Huld and loves Leni. In another of this author's works, the violin-playing Grete takes care of her brother. The parable of the man before the law is told to Josef K. in one of this author's works, while, in another, Gregor Samsa turns into a giant bug. For 10 points, name this author of *The Trial* and "The Metamorphosis."

ANSWER: Franz Kafka

149-12-71-13102

3. If programs written in this language call a method that doesn't exist, it automatically invokes the `method_missing` function. Arrays in this language have an each method that can be passed in a code block and, although not Objective C, it treats the special value `nil` as false. It was described by its creator, Yukihiro Matsumoto, as "more powerful than Perl, and more object-oriented than Python." For 10 points, name this programming language which has a namesake application framework "on Rails" and is named for a gem.

ANSWER: ruby

201-12-71-13103

4. This poet wrote of how "Time let me play and be golden in the mercy of his means" in a poem concluding, "Time held me green and dying though I sang in my chains like the sea." He wrote of how "frail deeds might have danced in a green bay" and "blind eyes could blaze like meteors and be gay" in a poem instructing his dying father to "rage, rage against the dying of the light." For 10 points, name this Welsh poet of a villanelle beginning, "Do not go gentle into that good night."

ANSWER: Dylan Thomas [or Dylan Marlais Thomas]

014-12-71-13104

5. In one song, this rapper claims that he's "Rap's Grateful Dead" and asks the crowd "for one last time" to "make some noise." That song was part of this man's collaboration Linkin Park on "Numb/Encore." In a different song, this man is "right next to DeNiro" and is "the new Sinatra." That song begins with him stating "Yeah I'm out that Brooklyn" and features Alicia Keys, who claimed "Now you're in New York." For 10 points, name this rapper behind "Empire State of Mind."

ANSWER: Jay-Z

149-12-71-13105

6. This title refers to a "high general who quells barbarians" and originated as a term of honor during the Heian period. People with this title led "tent governments" and formed three regimes named for families of these people: the Kamakura, Ashikaga, and Tokugawa. The rule of this office was ended in the Meiji Restoration, which returned power to the emperor. For 10 points, name this title that, with few interruptions, was held from 1185 to 1868 by the true rulers of Japan.

ANSWER: **shoguns**

019-12-71-13106

7. This law is used to derive Torricelli's law, and it is used to explain the role of cross-sectional area in the Venturi Effect. This law is used in an aspirator, in which air is drawn into flowing water as water flows through a constricted area. This law implies that an increase in the speed of water flow consequently results in either a decrease in pressure or potential energy. For 10 points, identify this principle named for a Swiss mathematician, which partially explains lift in an aircraft.

ANSWER: **Bernoulli**'s principle

189-12-71-13107

8. This politician chose Eduard Shevardnadze as the successor to Andrey Gromyko as foreign minister. This man reversed the New Economic Policy, and his own policies promoted freedom of the press. This successor to Constantin Chernenko and predecessor to Boris Yeltsin notably advanced policies of "openness" and "restructuring," or glasnost and perestroika. For 10 points, identify this Soviet politician who served as the final leader of the Soviet Union.

ANSWER: Mikhail Sergeyevich **Gorbachev**

189-12-71-13108

9. From 1982 to 1987, the women's singles portion of this tournament was won by Martina Navratilova, who won this event nine times. John Isner won a match here in 2010 that lasted over 11 hours and included 183 games. In 2012, the men's singles portion of this event was won by Roger Federer for the seventh time in his career. For 10 points, name this event whose men's singles runner-up was Britain's Andy Murray, the third of four events held in the tennis Grand Slam.

ANSWER: **Wimbledon** Championships

194-12-71-13109

10. Sam Ervin chaired a committee investigating this event, and Judge John Sirica made a breakthrough during it by obtaining a letter from James McCord. During this event, Eliot Richardson and William Ruckelshaus resigned, leaving Robert Bork to fire Archibald Cox during the "Saturday Night Massacre." The actions of the "Plumbers" and CREEP came to light during this event, about which Carl Bernstein and Bob Woodward received information from "Deep Throat." For 10 points, name this scandal that arose from a break-in at the namesake hotel and brought about the resignation of Richard Nixon.

ANSWER: **Watergate** Scandal [prompt on the **Saturday Night Massacre** before it is read]

080-12-71-13110

11. Russians call this item "derevo" [JER-eh-vuh] and this item, as well as its common product, are both called "etz" in Hebrew. In French, this item is called "un arbre" and in Spanish it is "el árbol." For 10 points, name this thing whose Latin word gives us the name for Arbor Day.

ANSWER: a **tree**

019-12-71-13111

12. This figure participated in funeral games held by King Teutamides in Larissa, during which an errant discus throw by this man killed his grandfather Acrisius. While on a quest for Polydectes, this man saved a woman from being sacrificed to Cetus and stole the eye of the Graeae (GREE-ee). This rescuer of Andromeda was the son of Zeus and Danae. For 10 points, name this hero from Greek mythology who used shield given to him by Athena in his successful effort to behead Medusa.

ANSWER: **Perseus**

023-12-71-13112

13. A number is highly this if it has more divisors than any smaller positive integer. Although not even, this type of number is the only kind that can be perfect. A steep-sided, symmetrical volcano made from built-up layers of debris is alternately called a stratovolcano or this kind of volcano. Beams denoted by this term consist of two or more materials. This type of number can be written as the unique product of a finite number of primes according to the fundamental theorem of arithmetic. For 10 points, identify this term that is applied to a number with factors other than one and itself.

ANSWER: **composite**

066-12-71-13113

14. A military governor of this city issued "General Order No. 28," stating that women who disrespected Union soldiers could be treated as prostitutes; that governor was Benjamin Butler. The boarding of a "whites only" car in this city led to the Supreme Court case *Plessy v. Ferguson*. The pirate Jean Lafitte helped protect this city in a War of 1812 battle in which the British were routed by Andrew Jackson. For 10 points, name this Louisiana city heavily damaged in 2005 during Hurricane Katrina.

ANSWER: **New Orleans**

080-12-71-13114

15. This writer's near death in the sinking of the *Commodore* inspired his short story about four men on a dinghy, at the end of which Billie the oiler dies. That story is entitled "The Open Boat." He wrote of the murder of the title prostitute in *Maggie: A Girl of the Streets*, and in another novel, he described Henry Fleming's cowardice and later bravery fighting in the Civil War. For 10 points, name this American novelist of *The Red Badge of Courage*.

ANSWER: Stephen **Crane**

014-12-71-13115



1A. In what state did independent Angus King defeat both Democratic and Republican candidates to win the 2012 election, replacing retiring Senator Olympia Snowe?

ANSWER: Maine

1B. Name this composer of a *Vocalise* for Antonina Nezhdanova, as well as *The Isle of the Dead* and *Rhapsody on a Theme of Paganini*.

ANSWER: Sergei Vasilievich Rachmaninoff

2A. Philip II sent what force to England that was destroyed by the Protestant Wind?

ANSWER: Spanish Armada [or Invincible Armada; or Armada Invencible]

2B. Samuel Richardson's novel *Pamela* is an example of what type of novel that consists of documents such as letters?

ANSWER: epistolary novel [prompt on "epistle"]

3A. What American President held office during the Mexican-American War?

ANSWER: James Knox Polk

3B. This is a 20-second calculation question. Find all quadrants where the cosecant function is negative.

ANSWER: third and fourth quadrants [or 3 and 4; or III and IV]

4A. This is a 20-second calculation question. Given the line  $5x + 3y = 6$ , find the slope of a line perpendicular to it.

ANSWER: 3/5 [or 0.6]

4B. What kind of tall, anvil-shaped cloud, also known as a thunderhead, can be classified as a supercell if it begins rotating?

ANSWER: cumulonimbus cloud

5A. What director placed Jimmy the Raven in many of his movies and told the story of George Bailey in his film *It's a Wonderful Life*?

ANSWER: Frank Capra

5B. What apostle of Jesus is the attributed author of the first book in the New Testament?

ANSWER: St. Matthew

6A. According to Fermat's last theorem, what is the highest value for  $n$  that satisfies the equation  $a^n + b^n = c^n$  for any three positive integers  $a$ ,  $b$ , and  $c$ ?

ANSWER: two

6B. In biology, what process, which is divided into the stages of initiation, elongation and termination, translates the code of mRNA to produce proteins?

ANSWER: translation

7A. What government based in Gaza engaged in a exchange of missile strikes with Israel in 2012?

ANSWER: Hamas

7B. This is a 30-second calculation question. Find the remainder when the polynomial  $x^3 + 3x^2 - 5x + 3$  is divided by  $x - 2$ .

ANSWER: 13

8A. This is a 30-second calculation question. In his math class, Chris takes six tests, drops the lowest score and averages the other five. His first five test scores are 85, 95, 93, 91, and 86. What is the maximum average he can have on his five test scores that count?

ANSWER: **93**

8B. What element has one atom present with two hydrogens and a functional group in amines and has a single atom triple bonded to a hydrogen in cyanide?

ANSWER: **nitrogen** or **N**

9A. What book by Jules Verne features Reform Club member Phileas Fogg and his valet Passepartout as they make a globetrotting trip as part of a bet?

ANSWER: ***Around the World in Eighty Days*** [or *Le Tour du Monde en Quatre-Vingts Jours*]

9B. What Baruch Spinoza work, "demonstrated in geometric order," deals with the passions in the section "Of Human Bondage"?

ANSWER: **Ethics** [or **Ethica**]

10A. In social science, Altaic, Na-Dene, and Niger-Congo are groupings of what kind of thing?

ANSWER: human **languages** [or, they are language **families**]

10B. Name this genre of up-close paintings of inanimate objects, such as flowers, jewelry, dead animals, and food.

ANSWER: **still lifes**



1. The kinetic properties of these molecules are described by  $V_{\text{max}}$  and  $K_m$ . Zymogens are inactive forms of these molecules. These molecules can be un-competitively, non-competitively, or competitively inhibited. These molecules can change shape a little while binding to a target in a process called induced fit. Their active sites is where they perform work on substrates. These biological molecules lower activation energies. For 10 points, name these proteins that catalyze reactions.

ANSWER: enzymes

001-12-71-13117

2. The luminosity of these structures is related to the width of their rotation curves according to the Tully-Fisher relation. The "active nuclei" of these structures are thought to contain supermassive black holes. The structures can form clusters or groups, such as the Local Group, which contain the Triangulum. The "Hubble tuning fork" classifies these structures into lenticular, elliptical, or spiral types. For 10 points, name these collections of stars, examples of which include the Andromeda and the Milky Way.

ANSWER: galaxies [or galaxy]

195-12-71-13118

3. 8th-graders in this state who perform well on a history exam can win a golden horseshoe, commemorating this modern-day state's exploration by the Knights of the Golden Horseshoe. Spruce Mountain is in this state, where the Mothman sightings occurred in the vicinity of Point Pleasant. Established by the Wheeling Convention, it borders Kentucky and Ohio to the west and Pennsylvania to the north. For 10 points, name this "wild and wonderful" state that broke off from the Old Dominion during the Civil War.

ANSWER: West Virginia

080-12-71-13119

4. Fingerprinting can be done by carrying this process using iodine crystals. Caffeine extraction often utilizes this process. It occurs when temperature or pressure increases while both quantities remain below the triple point. The enthalpy of this process can be calculated by adding the enthalpies of vaporization and fusion. The opposite of this process is deposition, and one example is the conversion of dry ice into carbon dioxide. For 10 points, name this type of phase transition in which a solid converts directly into a gas.

ANSWER: sublimation

140-12-71-13120

5. This poet wrote that "no man is an island" in a work admonishing, "never send to know for whom the bell tolls; it tolls for thee." One of his poems tells the central figure, "From rest and sleep, which but thy pictures be, much pleasure, then from thee much more must flow." That poem notes that "though some have called thee mighty and dreadful...thou art not so." For 10 points, name this poet of *Holy Sonnets* including one commanding, "Death, be not proud."

ANSWER: John Donne

014-12-71-13121

6. Moses Gomberg discovered an organic type of this molecule, thus founding a field of chemistry named for them. Superoxide dismutase opposes the action of one of this type of molecule. This symbol is used to denote exponentiation by a fraction, or, equivalently, to represent a square, or nth, root. The action of this type of molecule is inhibited by antioxidants. For 10 points, identify this term in chemistry that is often prefixed by "free" and which refers to a molecule has unpaired electrons.

ANSWER: **radical**

066-12-71-13122

7. Before this man's birth, his mother dreamed that an elephant with six white tusks pierced her side. This man gave a sermon in a deer park near Benares; the five friends who listened to him became the *sangha*. Raised in a comfortable palace, this man went out into the world and saw men afflicted by disease, old age, and death, leading to his decision to become a monk. This man sat under the Bodhi tree for 49 days to attain enlightenment. For 10 points, name this religious figure born Siddhartha Gautama, the founder of a religion whose followers strive to achieve nirvana.

ANSWER: Gautama **Buddha** [or **Siddhartha** Gautama before it is read]

080-12-71-13123

8. This novel's sequel follows Laura Dearborn in Chicago and is entitled *The Pit*. This novel's characters include the poet Presley, who searches for inspiration among Magnus Derrick's league of socially and economically embattled ranchers. This novel, subtitled "A Story of California," was the first in a never-finished trilogy called the "Epic of Wheat." For 10 points, name this novel by Frank Norris that compares the railroad system to a certain eight-tentacled animal.

ANSWER: *The* **Octopus**

014-12-71-13124

9. Carol Ann Susi voices one character on this TV show who is never shown but often heard shouting with her son from off camera. That son on this TV show got married to an employee at the Cheesecake Factory, Bernadette, and is best friends with a man who cannot talk to women unless inebriated. Howard and Raj are friends of the on-again-off-again couple of Penny and Leonard. For 10 points, name this CBS TV show featuring Jim Parsons as Sheldon Cooper, a theoretical physicist.

ANSWER: *The* **Big Bang Theory**

023-12-71-13125

10. This poem's second part refers to people who "broke their backs lifting Moloch to Heaven." This poem's third part features the refrain, "I'm with you in Rockland," referring to its dedicatee, Carl Solomon. This poem's description of a sexual act performed by "saintly motorcyclists" resulted in a famous obscenity trial. For 10 points, name this poem beginning, "I saw the best minds of my generation destroyed by madness," a major Beat poem by Allen Ginsberg.

ANSWER: "**Howl**"

014-12-71-13126

11. This compound along with water and sodium chloride are the ingredients in the traditional formulation for the oral rehydration therapy used to treat diarrhea. Low levels of this molecule allow cAMP and CAP to promote transcription of the lac operon. This compound is the primary substrate of hexokinase. Cellulose is a polymer of this molecule. This sugar is converted into two pyruvates in glycolysis. Sucrose is a combination of fructose with this sugar. For 10 points, name this most common sugar monosaccharide with formula  $C_6H_{12}O_6$ .

ANSWER: D-**glucose**

001-12-71-13127

12. Two dishes from this country are laverbread, made by boiling seaweed into paste, and "speckled bread," or *bara brith*. Two of this country's national parks are the Brecon Beacons in the south and Snowdonia in the north. The Isle of Anglesey is located off its northwest coast. Symbolized by a red dragon, this country has two national flowers, the daffodil and the leek. 20% of its people speak a Brythonic language called *Cymraeg*. For 10 points, name this western region of Great Britain whose "prince" is Prince Charles.

ANSWER: **Wales** [prompt on the **United Kingdom**; prompt on **Great Britain**; do not accept or prompt on "England"]

080-12-71-13128

13. James Bradley corrected for parallax to measure this value using the star Draco in 1728. A failed attempt to measure this value involved standings on hilltops about a mile apart, and was by Galileo. It was first accurately measured using observations of Io, a moon of Jupiter, by Ole Roemer. The first time it was measured purely on Earth was in 1849, when Armand Fizeau used a rotating wheel and a mirror eight kilometers from the observer. For 10 points, identify this constant equal to about 300,000 kilometers per second and denoted "c."

ANSWER: the **speed of light** [or the **speed of light** in air, or in a vacuum, or in any medium; or **c** before it is read]

019-12-71-13129

14. The longest avenue in this city, named for the soldiers who fought for its country's independence, is the Avenida de los Insurgentes. Austrian officer Ferdinand von Rosenzweig designed the Paseo de la Reforma that runs through this city diagonally. Chapultepec Castle is one of the landmarks of this city. This city's air quality has improved drastically since 1992, when it was the most polluted city on the planet. For 10 points, name this city built on the former site of Tenochtitlan, the capital of America's southern neighbor.

ANSWER: **Mexico City** [or La **Ciudad de Mexico**]

080-12-71-13130

15. This man's wife, the popular singer of "On the Plains of Hope" and "People from Our Village," holds a major general's rank in the People's Liberation Army. In 1985, this man studied hog-raising while living with a family in Muscatine, Iowa. Described as "redder than red," this "princeling" mysteriously disappeared for two weeks in September. This man rose to prominence through his successful preparations for the 2008 Olympics, outstripping his current chief lieutenant, Li Keqiang. For 10 points, name this newly-anointed leader of China.

ANSWER: **Xi** Jinping

080-12-71-13131





1. This poet wrote, "It is difficult to get the news from poems yet men die miserably every day for lack of what is found there," near the end of his "Asphodel, That Greeny Flower." This poet wrote a five-part epic poem about a New Jersey city called *Paterson*. In another poem, he described an object "glazed with rain water beside the white chickens." For 10 points, name this American poet who depicted an object that "so much depends upon" in "The Red Wheelbarrow."

ANSWER: William Carlos **Williams**

014-12-71-13132

2. This hormone is produced and deactivated by the two different isoforms of 11-beta-hydroxysteroid dehydrogenase. Taking high levels of prednisone can eventually suppress the ability to produce this hormone, resulting in an Addisonian crisis. Like aldosterone, the production of this hormone relies on 21-hydroxylase acting on a cholesterol backbone. This hormone, whose release is triggered by ACTH from the anterior pituitary, is overproduced in Cushing's syndrome. For 10 points, name this stress hormone that is secreted by the adrenal cortex.

ANSWER: **cortisol**

048-12-71-13133

3. This man's forces assisted Sir Isaac Brock in capturing Detroit. This man's brother, Tenskwatawa, predicted a solar eclipse and became a religious leader called "the Prophet." This man, whose name meant "Shooting Star," assisted the British during the War of 1812. While this man was away, his confederacy lost the decisive Battle of Tippecanoe. For 10 points, name this leader of the Shawnee Indians who died in the Battle of the Thames fighting against William Henry Harrison.

ANSWER: **Tecumseh**

080-12-71-13134

4. A constant named for this scientist is divided by mass times the speed of light in calculating the Compton wavelength. This man names a law which avoids the UV catastrophe predicted by the Rayleigh-Jeans law; that law yields an expression for the energy density for a black body. This physicist also suggested that energy comes in the form of discrete packets, or quanta. For 10 points, identify this German physicist whose namesake constant is symbolized  $h$ .

ANSWER: Max **Planck**

189-12-71-13135

5. This poet described the various chambers of a printing house in hell in a poem that concludes by claiming "every thing that lives is holy." This poet of *The Marriage of Heaven and Hell* also wrote a poem depicting "mind-forged manacles" in the title city, "London." Another of his poems asks the title creature, "What immortal hand or eye dare frame thy fearful symmetry?" For 10 points, name this British poet of *Songs of Innocence* and *Songs of Experience* such as "The Tyger."

ANSWER: William **Blake**

014-12-71-13136

What American artist of Civil War paintings such as *Prisoners from the Front* also created boat scenes such as *Breezing Up* and *The Gulf Stream*?

ANSWER: Winslow **Homer**