



1. While his furniture is removed, one character in this work tries to save a picture of a woman wearing fur. Three boarders in this work listen to the protagonist's sister play the violin. The protagonist of this work is injured when his father throws apples at him and one lodges in his back. That protagonist retreats to his room and dies after his beloved sister Grete loses affection for him. For 10 points, name this work by Franz Kafka in which Gregor Samsa awakes to find himself changed into an insect.

ANSWER: *The Metamorphosis* [or *Die Verwandlung*]

105-11-44-03101

2. The tallest one of these structures in the world is located in Nurek in Tajikistan. Another one of these structures is located under Monte Toc near Venice and had a 1963 landslide into it cause over 2,000 deaths. In addition to the Vaiont, another of these structures was built on the border between Brazil and Paraguay and called Itaipu. That type of this structure destroyed the Guirara Falls. For 10 points, name these structures, the longest of which is the 1.5 mile long Three Gorges one that interrupts the flow of the Yangtze River.

ANSWER: dams

023-11-44-03102

3. This author wrote that "down in the flood of remembrance, I weep like a child for the past" in his poem "Piano." This author recalled refusing to kill the title animal drinking from his water trough in his poem "Snake." He wrote about Mrs. Bolton, the caretaker of a man paralyzed from the waist down. Another novel by this author is about a man who discards Miriam Liewers for Clara Dawes. This author, who wrote about Paul Morel in *Sons and Lovers*, also described Connie and her gamekeeper, Oliver Mellors. For 10 points, name this novelist of *Lady Chatterley's Lover*.

ANSWER: David Herbert Lawrence

020-11-44-03103

4. In response to this event, one organization implemented the "Double-Track" policy. One action in it was Operation Storm-333, in which the Alpha Group seized Tajbeg palace. Operation Cyclone was a covert attempt to aid one side in this conflict. This event was triggered by a series of purges within the PDPA party. It led to a US-led boycott of the Summer Olympics and the arming of the Mujahadeen by the CIA. For 10 points, name this event beginning in 1979 in which the USSR invaded a Middle Eastern nation.

ANSWER: Soviet invasion of Afghanistan [or equivalent answers]

048-11-44-03104

5. LAMP glycoproteins localize to this organelle. They mature from multivesicular bodies and their membranes contain a V-type ATPase. One protein contained in them is mutated in Pompe's disease, and the cell uses mannose-6-phosphate to target proteins here. These organelles fuse with the products of phagocytosis in order to kill foreign bodies. They contain proteases and hydrolases and have an pH less than 5. For 10 points, name these organelles that cells use to digest things.

ANSWER: lysosome

048-11-44-03105

6. This government was captured in Operation Anton, and at one point its leaders was moved to Sigmaringen and headed by Fernand de Brinon. This government imprisoned a group of thirteen thousand people at the Winter Velodrome. Its paramilitary secret police force was led by Joseph Darnand and was called the Milice. It held the motto "Work, Family, Fatherland." Its prime minister was Pierre Laval, who was opposed by Charles de Gaulle and the Free French. For 10 points, identify this government led by Philippe Petain, a Nazi puppet government set up during World War II.

ANSWER: **Vichy** France

048-11-44-03106

7. One section of this poem involves the brother-in-law of the Frisians defending that man's hall and is called the "Finnesburg Fragment." This poem opens with an account of the life of Scyld Scefing (SHEELD SHEEF-ing) and recalls an episode in which the protagonist loses a swimming contest to Breca, for which he is mocked by Unferth. The protagonist of this work is killed by a dragon after he defeats another monster defending Hrothgar's hall. For 10 points, name this Old English epic in which the title character slays Grendel.

ANSWER: **Beowulf**

141-11-44-03107

8. The first and last steps of heme biosynthesis occur in this organelle, and proteins are targeted here by passing through the TOM and TIM complexes. The release of cytochrome c from this organelle is a method of inducing apoptosis, and this organelle contains a series of four complexes in its cristae that catalyze the electron transport chain. This organelle has a double membrane and contains its own DNA. For 10 points, name this organelle, which is the ATP-generating powerhouse of the cell.

ANSWER: **mitochondria**

048-11-44-03108

9. In youth, this future ruler escaped to France during the War of the Rough Wooing. Lord Huntley led a revolution against this ruler, and this ruler's personal secretary David Rizzio was killed after her husband Lord Darnley demanded more power. Letters this ruler had sent were decoded by Francis Walsingham, which implicated her in the Babington Plot. That plot sought to have her placed on the throne after assassinating Elizabeth I. For 10 points, name this Catholic queen of Scotland.

ANSWER: **Mary Stuart** [or **Mary, Queen of Scots**; or **Mary I of Scotland**; prompt on **Mary**; prompt on **Mary I**]

048-11-44-03109

10. This disease is traditionally diagnosed using a methacholine challenge. Its intensity varies from intermittent to severe persistent and is controlled using beta-2 agonists like albuterol. Patients with this disease have a low peak flow rate and athletes experience the exercise induced-form. This disease is characterized by reversible obstruction and hyperreactivity. It manifests itself in namesake "attacks" which include wheezing and shortness of breath. For 10 points, name this chronic respiratory disease.

ANSWER: **asthma**

064-11-44-03110

11. The Riddler and Two-Face play a variant of this game just before the final confrontation in *Batman Forever*. It consists of a ten by ten square and was originally introduced as "Broadside." The pieces in this game typically consist of such items as a destroyer, cruiser and an aircraft carrier. For 10 points, name this game in which two opposing players attack each other's naval vessels.

ANSWER: **Battleship**

064-11-44-03111

12. Two of these interactions occur between two molecules of a carboxylic acid in the vapor phase, and they typically occur over a distance of 200 picometers. These interactions occur between every fifth residue of an alpha helix and between the nitrogenous bases on strands of DNA. This interaction between water molecules gives it a relatively high boiling point. For 10 points, name this type of weak interaction in which an electronegative atom attracts an atom of the lightest element.

ANSWER: **hydrogen bonding** [or **H bonding**]

048-11-44-03112

13. This thinker countered Edmund Burke's anti-Jacobin *Reflections on the Revolution in France* with his book *The Rights of Man*. He defended Deism in *The Age of Reason*. As an assistant to Nathanael Greene, this man denounced "the summer soldier and the sunshine patriot" and stated "these are the times that try men's souls." For 10 points, name this author of "Common Sense" and "The Crisis" who supported the American Revolution with his pamphlets.

ANSWER: Thomas **Paine**

019-11-44-03113

14. Two atoms of this element coordinate to platinum along with ammonia in the chemotherapy drug cisplatin. In one strong acid, this element has a +7 oxidation state. Along with fluorine and carbon, this element is part of a group of compounds called Freon that were banned because they depleted the ozone layer. This element is part of another strong acid that aids protein digestion in the stomach. For 10 points, name this halogen found in swimming pools and table salt.

ANSWER: **chlorine** [or **Cl**]

020-11-44-03114

15. In one of this man's plays, Reverend Avery conducts a successful exorcism when Robert Sutter's ghost is driven away by Boy Willie after Berniece begins to play the title instrument. In another of his plays, Cory pretends to work at the A&P while sneaking off to play football, angering his father, the garbage collector Troy Maxson. For 10 points, name this African-American playwright of the "Pittsburgh Cycle," including *The Piano Lesson* and *Fences*.

ANSWER: August **Wilson**

014-11-44-03115



1A. The week begins with the days of "lunedì," "martedì," and "mercoledì" in what language, whose standard form comes from the Tuscan dialect?

ANSWER: **Italian** [or **italiano**]

1B. What Japanese novelist wrote *The Temple of the Golden Pavilion* and the *Sea of Fertility* tetralogy?

ANSWER: Yukio **Mishima**

2A. Which jazz pianist composed "Epistrophy", "Round Midnight", and "Straight, No Chaser"?

ANSWER: Thelonious Sphere **Monk**

2B. What large body of water is bounded by the Strait of Gibraltar to the West and the Dardanelles to the East?

ANSWER: **Mediterranean** Sea

3A. This is a 10-second calculation question. Solve for x in $5x+4y-5=1y+10+5y-2y$.

ANSWER: $x = \mathbf{3}$

3B. This is a 10-second calculation question. At what angle is the sine function equal to the cosine function?

ANSWER: **pi/4** [or **45 degrees**]

4A. Which Italian artist depicted two maids working the background while the title figure reclines nude on a bed with her dog in his painting *Venus of Urbino*?

ANSWER: **Titian** [or Tiziano **Vecellio**; or **da Cadore**]

4B. What novel by William Golding features Ralph, Jack, and a bunch of boys who get stranded on a desert island?

ANSWER: **Lord of the Flies**

5A. What scientist was convicted of "vehement suspicion of heresy" for parodying Pope Urban VIII in his *Dialogue on the Two Chief World Systems*?

ANSWER: **Galileo** Galilei

5B. What NBA commissioner canceled the 2011 preseason because owners and players have been unable to end the current lockout?

ANSWER: David **Stern**

6A. This is a 20-second calculation question. What is the smallest real root of $x^2-8x+10$? Express your answer in the form a plus or minus the square root of b where square root of b is in simplest radical form.

ANSWER: $x = \mathbf{4 \text{ minus the square root of } 6}$

6B. This is a 20-second calculation question. If the edge length of an equilateral square pyramid is $2\sqrt{2}$, what is the height of the pyramid?

ANSWER: **2**

7A. What German author of *The Sorrows of Young Werther* wrote of a man who sells his soul to the devil in *Faust*?

ANSWER: Johann Wolfgang von **Goethe** (GUHR-tuh)

7B. The displacement of low-income residents due to higher property taxes is part of what process, in which once-neglected urban areas receive large-scale investment from developers and upper income homeowners?

ANSWER: **gentrification**

8A. The auteur theory of directing, the magazine *Cahiers du Cinema*, and the directors Jean-Luc Godard and Francois Truffaut were major elements of what movement in film in the 1960s, that emphasized the importance of the director and made use of such new techniques as jump cuts?

ANSWER: French **new wave** film [or **Nouvelle Vague**]

8B. The ballet *Gayane* is the origin of the frenetic "Sabre Dance", the most famous piece by which Armenian composer?

ANSWER: Aram Ilyich **Khachaturian**

9A. This is a 30-second calculation question. What is the sample variance of the set {10,8,14,6,10,12}?

ANSWER: **8**

9B. This is a 30-second calculation question. Suppose a bag of 10 trinkets initially contains 8 red trinkets. If 4 trinkets are drawn from the bag without replacement, what is the probability that 2 of the drawn trinkets are red? Express your answer as a reduced fraction.

ANSWER: **2/15**

10A. Which Norse trickster deity is subject to the punishment of having venom dripped onto him while being chained to some rocks after causing the death of Baldur?

ANSWER: **Loki**

10B. The reference kilogram is composed of an alloy of platinum and this element. Name this element, whose presence in the K-T boundary is evidence of a meteor impact that caused the Cretaceous extinction.

ANSWER: **iridium** [or **Ir**]



1. One incident during this event was lampooned by the Christopher Meloni-portrayed Anthony Bologna. This event was advertised with a poster featuring a dancer on a statue of a raging bull. It was centered at Zuccotti Park, but also saw an alleged ruse on the Brooklyn Bridge which led to seven hundred arrests. It spawned a police pepper-spraying incident and slogans about "the 99 percent." For 10 points, name this protest which partially targeted financiers who work on the namesake New York thoroughfare.

ANSWER: **Occupy Wall Street** [prompt on partial answers]

141-11-44-03117

2. The NFW profile gives the mass distribution for halos of this substance around galaxies, which is believed to be responsible for the anomalous shape of galaxy rotation curves. One large piece of evidence for this substance's existence is the large offset between the center of mass and the center of baryonic mass in the Bullet Cluster. WIMPs and MACHOs are candidates for this substance, which accounts for about 23% of the mass-energy density of the universe but is unobservable. For 10 points, name this invisible matter in the universe.

ANSWER: **dark matter**

048-11-44-03118

3. The protagonist of this novel censors letters using the name Washington Irving while in the hospital for liver pain, and he is haunted by his memory of the death of the radio-gunner Snowden. Characters in this novel include Major Major Major Major and the mess officer Milo Minderbender, and this novel's title refers to the initial number of bombing missions which must be flown by Captain Yossarian. For 10 points, name this novel by Joseph Heller.

ANSWER: **Catch-22**

014-11-44-03119

4. The direction of this quantity can be determined by pointing the fingers in the direction of the force using the right hand rule. Taking the integral of this quantity between two angular positions gives the work while taking the cross product of this quantity with angular velocity gives work. The Greek tau is typically used for this quantity, equal to the cross product of force and the displacement. For 10 points, name this rotational analogue of force.

ANSWER: **torque**

064-11-44-03120

5. Characters created by this author include a man who physically or mentally writes letters to both dead and living people and the African guide Romilayu. This author of *Herzog* and *Henderson the Rain King* also described a character who works as a union organizer prior to joining Thea Fenchel. That title character begins his narrative by declaring "I am an American, Chicago born." For 10 points, name this Jewish-American novelist of *The Adventures of Augie March*.

ANSWER: Saul **Bellow**

014-11-44-03121

6. 2011 saw the discovery of a fourth moon of this object, whose other satellites include Hydra and Nix. James Christy discovered this object's largest moon, which is in synchronous orbit around it and therefore never rises or sets. That moon is about half the size of this Kuiper Belt object, which has consequently not "cleared its neighborhood." For 10 points, Charon is the largest satellite of what celestial body, which in 2006 was "demoted" to dwarf planet?

ANSWER: **Pluto**

142-11-44-03122

7. This author's characters include a doctor who stuffs his pockets with paper pills and a harness-maker who attempts to kill the inventor of a crop-setting machine. This creator of Hugh McVey in *Poor White* also wrote about a berry picker exiled for being accused of homosexuality named Wing Biddlebaum, and a reporter who becomes involved with his former teacher Kate Swift named George Willard. For 10 points, name this American novelist who created the title Midwestern town in *Winesburg, Ohio*.

ANSWER: Sherwood **Anderson**

014-11-44-03123

8. This city's Blount Island was the planned site of a dry dock for building floating nuclear power plants. A 1960 civil rights protest in this city led to "Ax Handle Saturday." This city contains the mouth of the St. Johns River. In 1968 this city voted to consolidate its government with that of Duval County, making it the largest city by area in the forty-eight contiguous states. For 10 points, what most populous city in Florida is named after the seventh U.S. President?

ANSWER: **Jacksonville**

003-11-44-03124

9. During this time period, the ruling dynasty increased its power by making all daimyo spend alternating years in the capital at the daimyo's expense. Yoshinubo was the last ruler of this family, which was forced from power during the Boshin War. Matthew Perry forced Japan to sign the Treaty of Kanagawa during this shogunate's reign. For 10 points, name this shogunate first ruled by Ieyasu (ee-AH-"sue") and ended by the Meiji Restoration.

ANSWER: **Tokugawa** Shogunate [or **Tokugawa** Bakufu; prompt on **Edo** Bakufu]

135-11-44-03125

10. Inspection of this data structure is a security mechanism implemented by the JVM to accommodate untrusted code. A data structure of this type is used to store information about subroutines of a process. That structure can be subject to an overflow when recursion is used and is prefixed by the word call. This data structure can be used to easily reverse the order of a set. The push and pop operations are performed on this data structure. For 10 points, name this last in first out data structure contrasted with a queue.

ANSWER: **stack**

066-11-44-03126

11. This actress plays a character who frequently hallucinates seeing a talking zebra and who is best friends with Stacy Hirano. In a 2011 film, this actress plays a character who replaces Amber Lee Adams in the Broadway show *A Girl's Best Friend*. The voice of Candace Flynn on *Phineas and Ferb*, this actress' best-known character has a hat-sporting brother played by Lucas Grabeel, with whom she sings the tune "Bop to the Top." For 10 points, name this actress who played Sharpay in the *High School Musical* series.

ANSWER: Ashley **Tisdale**

052-11-44-03127

12. One poem of this form describes how "so many things seem filled with the intent / to be lost that their loss is no disaster." This form exemplified by Elizabeth Bishop's "One Art" includes five tercets followed by a quatrain. This poetic form also uses two repeating rhymes and two refrains, one example of which is the line "Rage, rage against the dying of the light." For 10 points, name this form used by Dylan Thomas in "Do Not Go Gentle into that Good Night."

ANSWER: **villanelle**

105-11-44-03128

13. Ken Taylor helped six people escape from this event by issuing them Canadian passports, and Bruce Laingen sent a series of dispatches during this event. One attempt to end this crisis by Operation Eagle Claw resulted in a helicopter crashing in a sandstorm. It was partly perpetrated to distract from a new theocratic constitution. It lasted 444 days and ended on the day of Reagan's inauguration. For 10 points, name this crisis in which a group of American workers were held in the U.S. embassy in Tehran.

ANSWER: **Iran hostage** crisis

048-11-44-03129

14. This city was home to racketeer Whitey Bulger, and Quaker Mary Dyer was hanged in this city. Two different companies were granted charters to build a bridge in this city, resulting in the case Charles River Bridge v Warren Bridge. One incident in this city occurred when a mob was fired on in King Street and resulted in the deaths of Samuel Maverick, Samuel Gray, and Crispus Attucks. For 10 points, name this city that during the colonial era was the site of a Massacre in Massachusetts.

ANSWER: **Boston**

048-11-44-03130

15. This book's first chapter tells of the building of the "treasure-cities" Pithom and Raamses. One character in this book becomes her own son's wet-nurse; that son grows up to marry Jethro's daughter Zipporah. Later in this book, that character breaks some stone tablets when he sees that Aaron has built a golden calf. For 10 points, name this second book of the Torah, in which Moses speaks to God through a burning bush, leads his people out of Egypt, and receives the Ten Commandments.

ANSWER: Book of **Exodus** [or **Shemot**; or **Names**; do not accept or prompt on "Torah"]

142-11-44-03131



1. The derivative of one of these entities for a function is equal to one over the derivative of the function applied to one of these. One of these exists for a matrix only if the determinant is not zero, and one of these can only be found for a function if it passes the horizontal line test. For the natural logarithm, the exponential function is one of these objects. For 10 points, name these objects, which return an output of x when the input is y .

ANSWER: Inverses [or Inverse Functions]

080-11-44-03132

2. One location in this city features a gold-colored monument of a fist crushing an American fighter plane. Another location in this city was originally called the "Green Square" in a reference to the *Green Book*. This city saw a government change in Operation Mermaid Dawn, prompting one man to flee to the city of Sirte. Much bombing occurred at a compound in this city called Bab al-Azizia. For 10 points, name this city seized in August 2011 by anti-Gaddafi rebels, the largest city in Libya.

ANSWER: Tripoli

052-11-44-03133

3. This man employed the scout Bloody Knife. He instigated the Washita Massacre, in which Black Kettle was killed. This man was promoted to Brigadier General by Alfred Pleasonton during the Battle of Gettysburg. This man's expedition into the Black Hills triggered a gold rush. Marcus Reno and Frederick Banteen served under this man in one battle. This general was killed in a battle in which his forces were decimated by Crazy Horse and Sitting Bull. For 10 points, name this American general killed at the Battle of Little Bighorn.

ANSWER: George Armstrong Custer

048-11-44-03134

4. These entities create paternoster lakes, which occur in chains that end at a corrie. Corries can contain a bowl-shaped feature formed by these entities known as a cirque. They also form kettle lakes and undergo a process known as plucking, which is one way they create the debris known as a moraine. Their retreat is said to be caused by global warming and these entities are the largest source of freshwater. For 10 points, name these large masses of ice found on land.

ANSWER: glaciers

140-11-44-03135

5. Lyndon Johnson claimed it was better to have this man "inside the tent pissing out, than outside the tent pissing in." This man successfully argued in court for the deportation of Emma Goldman while serving as assistant to Arnold Palmer. Having established COINTELPRO, he proceeded to blackmail Martin Luther King with the information he kept in his secret files. Rumors have circulated that this man was a closeted homosexual fond of wearing dresses. For 10 points, name this man who served as head of the FBI for 50 years.

ANSWER: John Edgar Hoover

080-11-44-03136