



1. This event was ended prematurely when Christina Maslach, who later married its organizer, objected to what was going on. Conducted in the basement of Jordan Hall, this event featured a man emulating a character from the film *Cool Hand Luke*, earning him the inaccurate nickname "John Wayne." Of the twenty-four participants, twelve were named guards and quickly began physically abusing the others. For 10 points, name this 1971 Philip Zimbardo experiment testing the abuse of power, which took place at a California university.

ANSWER: **Stanford prison** experiment

052-13-96-06101

2. The subject of one of this man's poems pours "thy full heart in profuse strains of unpremeditated art." A poem by this author describes how he "met a traveler from an antique land" who told him where "two vast and trunkless legs of stone stand in the desert." This poet proclaimed "hail to thee, Blithe spirit!" in his poem "To a Skylark." In a poem by this author, the inscription "Look on my works, ye mighty, and despair" appears on the pedestal of a statue of Ramses the Great. For 10 points, name this British poet of "Ozymandias."

ANSWER: Percy Bysshe **Shelley**

186-13-96-06102

3. Histamine is secreted in this organ by enterochromaffin (en-TARE-oh-kroh-MAFF-in)-like cells. A valve at the bottom of this organ is called the pyloric sphincter. A bacteria localized to it uses chemotaxis (kee-moh-TAK-sis) to burrow into the mucus lining the wall of this organ, which expands using rugae (ROO-guy). That bacteria, *H. pylori*, increases the prevalence of peptic ulcers in this organ. For 10 points, identify this organ which sends chyme (KIME) to the small intestine after receiving it from the esophagus.

ANSWER: **stomach**

239-13-96-06103

4. The final section of this novel takes place on Easter Sunday, when Luster upsets his ward by driving a carriage the wrong way. This novel opens by describing a golf match with the line "Through the fence, between the curling flower spaces, I could see them hitting." In this novel, Dalton Ames impregnates the ill-fated Caddy. This novel has three first-person narrators, namely the brothers Benjy, Quentin, and Jason Compson. For 10 points, name this William Faulkner novel titled after a quote from *Macbeth*.

ANSWER: *The* **Sound and the Fury**

080-13-96-06104

5. This painting was originally dismissed as a "hodgepodge of body parts that any four-year-old could have painted." On the bottom of this painting, a dying man holds in his right hand a flower and a broken sword, below a woman who pokes her head out a window and holds out a lamp. This painting originally shown at the Paris Exposition in 1937 depicts a bird, a bull, and a screaming horse. For 10 points, name this painting inspired by the German bombing of a town during the Spanish Civil War, painted by Pablo Picasso.

ANSWER: **Guernica**

023-13-96-06105

6. Johannes Brahms's third piece in this genre repeatedly references the "fate" motif of Beethoven's Fifth Symphony. Frederic Chopin wrote a piece in this genre whose third movement is a famous funeral march. Ludwig van Beethoven's pieces in this genre include the difficult "Appassionata" and one titled "quasi una fantasia" nicknamed for the moonlight on Lake Lucerne. For 10 points, name these pieces for a solo keyboard instrument traditionally contrasted with rhythm-dominated toccatas.

ANSWER: **piano sonatas** [prompt on **sonatas**]

080-13-96-06106

7. The protagonist of this story is the author of an epic about Frederick the Great and has a vision of Socrates's dialogue with Phaedrus under a tree. A writer in this story eats overripe strawberries shortly before watching Jashu push his sickly companion down into the sand. In this story, the writer Gustav von Aschenbach succumbs to a cholera outbreak in a city where he lingers to admire the fourteen-year-old Tadzio. For 10 points, name this Thomas Mann novella set in a northern Italian city.

ANSWER: ***Death in Venice*** [or ***Der Tod in Venedig***]

080-13-96-06107

8. The Euler-Mascheroni (OY-lur mash-uh-ROH-nee) constant is the limit of the difference between this function and the harmonic series. The coefficients of its Taylor series centered at one are the terms of the alternating harmonic sequence. Its derivative is "one over x". The value of this function applied to a product of numbers equals the sum of this function applied to each number separately. Its base is approximately 2.718. For 10 points, name this function inverse to the exponential function.

ANSWER: **natural logarithm** [or **base-e logarithm**]

121-13-96-06108

9. This object is used in a 1995 film by Chase Meridian, who is chastised for confusing it with a "beeper." In an earlier film, it is displayed at a press conference in response to Alexander Knox's question "how do we call him?" At the end of a later film, this object is shown being destroyed with an axe under the words "condemn me, set the dogs on me." In a 2005 film, this object is first conceived when Carmine Falcone (fal-COH-nee) is tied to a searchlight prior to the arrival of police. For 10 points, name this device which projects an image onto the clouds in *The Dark Knight*.

ANSWER: the **Bat-signal**

019-13-96-06109

10. This city is the headquarters of the organization that administers Earthwatch, an environmental information clearinghouse among governments. This home of the United Nations Environment Program is five miles north of a national park with the same name that includes an "animal orphanage." This city receives water from the Sasumua (sah-suh-MOO-uh) Dam, which dams the Tana River. At least sixty-seven people were killed in this city's Westgate Mall by al-Shabab gunmen in 2013. For 10 points, name this capital city of Kenya.

ANSWER: **Nairobi**

030-13-96-06110

11. On this exact date, a president gave a speech containing a last minute line about "inevitable triumph" added by Harry Hopkins. A vote taken on this day featured a sole dissent from Jeannette Rankin and passed 388 to 1 in the House of Representatives. On this day, a speaker noted that American forces had been attacked on Wake Island. That speech begins by noting the previous day "will live in infamy." For 10 points, give the exact date of the United States declaration of war on Japan in World War II, which occurred the day after the Pearl Harbor attacks.

ANSWER: **December 8, 1941** [prompt on partial answer]

052-13-96-06111

12. This poem describes "a gaze blank and pitiless as the sun" belonging to "a vast image out of Spiritus Mundi." This poem describes a "blood-dimmed tide" covering the world and opens, "Turning and turning in the widening gyre, the falcon cannot hear the falconer." This poem concludes by asking "what rough beast, its hour come round at last, slouches towards Bethlehem to be born?" For 10 points, name this apocalyptic poem by William Butler Yeats.

ANSWER: "The **Second Coming**"

014-13-96-06112

13. These objects are slowed by viscous drag in a dashpot. They are described by a second-order differential equation with characteristic frequency equal to the square root of  $k$  over  $m$ . A mass hanging from one of them will be displaced by a distance of  $m g$  over  $k$ . The restoring force on these objects is proportional to the displacement in their total length according to Hooke's law, making them harmonic oscillators. For 10 points, name these metal coils that store energy by being stretched or compressed.

ANSWER: **springs** [prompt on simple **harmonic oscillator**s until it is read]

132-13-96-06113

14. Eusebius (yoo-SAY-bee-uss) claimed that this man was predicting the birth of Christ with his description of a child bringing a new Golden Age in his fourth *Eclogue*. The protagonist of one of his poems considers letting his enemy live when he sees Turnus wearing the belt of Pallas. In that poem by this man, a queen immolates herself after the protagonist leaves her, right after she swears Carthage and the city he will found will be future enemies. For 10 points, name this author of the *Aeneid* (uh-NEE-id).

ANSWER: **Vergil** [or Publius **Vergilius** Maro]

121-13-96-06114

15. These things originate in source regions that are flat and have light surface winds. These things are designated with a combination of a small c or small m, for continental or marine, and a big P or big T, for polar and tropical. On surface weather maps, transition zones between them are marked by lines with equally spaced triangles, semicircles, or a combination of both and are called fronts. For 10 points, name these large bodies of air that have a consistent temperature and moisture content.

ANSWER: **air masses**

066-13-96-06115



1A. "A Perfect Day for Bananafish" is part of what reclusive author's collection *Nine Stories*?

ANSWER: J. D. **Salinger**

1B. Santiago catches a giant marlin which is eaten by sharks in what novella by Ernest Hemingway?

ANSWER: *The **Old Man and the Sea***

2A. What Charles Dickens novel features such characters as Fagin and the Artful Dodger?

ANSWER: ***Oliver Twist***

2B. What young outfielder for the Angels has finished second in American League MVP voting for two consecutive years?

ANSWER: Mike **Trout**

3A. This is a 20-second calculation question. Two trees in a park are 25 feet and 40 feet tall, respectively. When the smaller tree casts a shadow ten feet long, how long of a shadow does the taller tree cast?

ANSWER: **16** feet

3B. This is a 20-second calculation question. The variance of a non-uniform data sample is ten times its standard deviation. What is the variance?

ANSWER: **100**

4A. Millikan's oil drop experiment successfully measured the mass and charge of what particle?

ANSWER: **electron**

4B. The Schrödinger equation is most easily solved for an atom of what element, which undergoes fusion via the proton-proton chain in stars?

ANSWER: **hydrogen**

5A. What rule states that the limit of the ratio of two functions is equal to the ratio of the derivatives of those functions?

ANSWER: **L'Hopital's** (LOW-pea-tahl's) rule

5B. What "Generalissimo" led Spain from 1939 until his death in 1975 after winning the Spanish Civil War?

ANSWER: Francisco **Franco** y Bahamonde

6A. What ancient civilization's history is divided into an Old Kingdom, Middle Kingdom, and New Kingdom?

ANSWER: **Egypt**

6B. What artist superimposed the images of two people in his sketch of proportions known as the *Vitruvian Man*?

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

7A. What term describes narratives in which the surface characters and events are extended metaphors with a second meaning, as seen in *The Pilgrim's Progress*?

ANSWER: **allegory**

7B. What American city has neighborhoods called Bernal Heights, the Castro, Fisherman's Wharf, Haight-Ashbury, and the Tenderloin?

ANSWER: **San Francisco**

8A. What city is the site of the Kennedy Center and of a famous 1939 concert given by Marian Anderson?

ANSWER: **Washington** D.C. [or Washington **D.C.**, or the **District of Columbia**]

8B. What 1813 battle, also known as the Battle of the Nations, pitted Napoleon Bonaparte's alliance against Russia, Austria, Prussia, and Sweden?

ANSWER: Battle of **Leipzig**

9A. What process in computer science is accomplished using algorithms called “shell,” “bubble,” and “radix”?

ANSWER: **sorting**

9B. In 2013, Barack Obama nominated Janet Yellen to replace what departing Chairman of the Federal Reserve?

ANSWER: Ben **Bernanke**

10A. This is a 30-second calculation question. A 120 degree angle in a triangle is formed by two sides measuring 5 feet and 10 feet. In simplest radical form, what is the length, in feet, of the third side?

ANSWER: **5** times the square **root** of **7** [or **5 root 7**]

10B. This is a 30-second calculation question. If  $f(x)$  ["f of x"] equals  $4x+3$  and  $g(x)$  equals  $2x^2 - 5$ , find  $f$  composed with  $g$ ; that is, find  $f$  of  $g$  of  $x$ .

ANSWER:  **$8x^2 - 17$**



1. A king of this name attempted to divide his kingdom through the *Ordinatio Imperii* (or-din-AH-tee-oh imp-AIR-ee-ee). Three sons of that king with this name later split up the kingdom by the Treaty of Verdun. This name was held by a king who was captured in the Battle of Fariskur (FAH-riss-kor) and died in Tunisia after starting a second expedition towards the Holy Land. This name belonged to a monarch who led the Seventh and Eighth Crusades and was the only French king to be canonized. For 10 points, identify this name belonging to a French saint and seventeen other French kings.

ANSWER: **Louis** [or **Louis I**; or **Louis IX**]

023-13-96-06117

2. As a wind god, he was shown with a mask with two tubes, and he was sometimes identified as the planet Venus. He had a dog-headed companion named Xolotl (shuh-LOT-ul) who descended into Mictlan to gather the bones of the dead. He was the god of the morning and evening star. One of this god's personalites was known as Ehecatl (eh-heh-COT-ul). This god's rival was Tezcatlipoca (tez-CAT-lee-POE-kuh), and he was exiled on a raft made of snakes. For 10 points, name this feathered serpent god of Aztec mythology.

ANSWER: **Quetzalcoatl**

030-13-96-06118

3. This party was blamed for a riot in Bath, Maine, and the related tarring and feathering of John Bapst. One of its Vice-Presidential nominees was the nephew of Andrew Jackson. This party contained many members from the Order of the Star Spangled Banner. This third party nominated Millard Fillmore for the Presidency in 1856, and its colloquial name refers to how its mostly anti-German and Irish members were supposed to deny being in this party. For 10 points, name this anti-Catholic, nativist political party in the 1850s.

ANSWER: **Know Nothing** Party [or Native **American** Party]

052-13-96-06119

4. The sixth holder of this office was prophesied to take power after his mother saw a ring of flames around his head. Another of these people sent the Horatii brothers to duel the Curiatii (COO-ree-AH-tee-ee) to resolve a war with Alba Longa. The seventh and last of these people was overthrown by Lucius Junius Brutus after his son committed the rape of Lucretia. For 10 points, identify this office held by seven legendary men, the first of whom was Remus's twin Romulus.

ANSWER: **Kings of Rome** [or **Roman kings**, etc.; prompt on partial answer]

019-13-96-06120

5. Thomas Graham is considered the inventor of this procedure. In injured patients, the indications for this procedure are summarized with the handy mnemonic AEIOU, and more chronic indications include a low GFR. A variant of this procedure is run through the peritoneal cavity. In general, this procedure uses a solution rich in bicarbonate, potassium, and calcium and removes creatinine and urea in the blood through a semipermeable membrane. For 10 points, name this procedure in which a large machine is used to replace the function of a kidney.

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

020-13-96-06121

6. At a meeting after this event, Rose Schneiderman said she would be a traitor to those who died if she tried "to talk good fellowship." This event prompted the formation of a safety committee chaired by Frances Perkins, which proposed a fifty-four-hour work week, a proposal welcomed by Tammany Hall head Al Smith. After it was revealed that the stairs and exits had been locked by the owners during this incident, unions such as the International Ladies Garment Workers Union fought for improved labor conditions. For 10 points, name this deadly 1911 fire in a New York City factory.

ANSWER: **Triangle Shirtwaist** Factory fire

052-13-96-06122

7. The Grandfather geysir field is located in this region. The Very Large Telescope is located in the Paranal (pah-rah-NAHL) Observatory in this region. The few mammal species native to this area include a variety of grey fox, Darwin's leaf-eared mice, and the viscacha (vees-CAH-chuh). Owing to El Nino, the southern portion of this desert annually flowers between September and November. This desert is rich in copper and nitrate deposits, the latter of which sparked the War of the Pacific. For 10 points, name this driest hot desert in the world, located to the west of the Andes.

ANSWER: **Atacama** Desert

020-13-96-06123

8. This scientist was the doctoral advisor for Urey (YUR-ee) when he discovered deuterium. Earlier, this scientist synthesized pure deuterium oxide, or heavy water. This man names a class of compounds that activate the Friedel-Crafts reactions and include boron trifluoride and aluminum trichloride. This man, who coined the term "photon," devised a representation of bonds within molecules by using either lines or dots to indicate pairs of electrons. For 10 points, name this scientist who classified acids as electron pair acceptors.

ANSWER: Gilbert Newton **Lewis**

239-13-96-06124

9. A woman in this play listens to a recording of the Varsouviana that always ends with a gunshot, reminding her of the suicide of her closeted gay husband, Allan Grey. This play is set in the Elysian Fields, where a woman recently arrived from Laurel enters into a relationship with Mitch. In this play, a Southern aristocrat who has lost her plantation, Belle Reve, is disgusted to find her sister Stella married to a "brute." For 10 points, name this Tennessee Williams play about Blanche DuBois's conflicts with Stanley Kowalski.

ANSWER: A **Streetcar Named Desire**

080-13-96-06125

10. Along with gap genes, which set the boundaries of these things, and pair-rule genes, genes named for and controlling the polarity of these things help define the *Drosophila* embryo. In leeches, these things each receive a set number of cells from five lineages of teleoblast cells. A phylum defined by having these things includes the classes Polychaeta (pah-lee-KITE-uh) and Oligochaeta (ah-lee-goh-KITE-uh) and has two parapodia and the same set of organs in each of them. For 10 points, name these repeating units of an organism's anatomy, which annelids possess.

ANSWER: **segments**

048-13-96-06126

11. In October 2013, it was announced that this gaming console, running on the Orbis operating system, would cost nearly two thousand dollars in Brazil. Exclusive launch titles for this console included one in which collecting relics unlocks different versions of the title character named Knack, as well as the first person shooter *Killzone: Shadow Fall*. The DualShock controller for this console comes with a "share" button for uploading videos or screenshots. For 10 points, name this gaming console released in 2013 that is produced by Sony and is a rival of the Wii U and the Xbox One.

ANSWER: **Playstation 4** [or **PS4**; do not accept or prompt on "Playstation"]

023-13-96-06127

12. The second item on this list is "samudaya" (sah-moo-DIE-uh), which is later elucidated to include killing, lying, stealing, and other forms of "attachment." This list begins with "dukkha" (DOO-kuh) and ends with "magga." These tenets were revealed at Sarnath and are recorded in the text *The Setting in Motion of the Wheel of Dharma*, and they constituted the first sermon given after the enlightenment under the Bodhi tree. The last of these beliefs says that the Eightfold Path is the way to reach nirvana. For 10 points, identify this set of core beliefs of Buddhism.

ANSWER: **Four Noble Truths** [or **Chattari-ariya-saccani**; or **Chatvari-arya-satyani**]

019-13-96-06128

13. By Classical times, the rarely seen imperative mood of this tense was used chiefly to write wide-ranging rules in legal documents. In the third conjugation, the indicative active form of this tense is created by removing "E-R-E" from the second principal part and adding "-am," (AHM) "-es," (ACE) "-et," (ATE) "-emus," (AIM-us) "-etis," (ATE-iss) "-ent" endings. In first and second conjugation, it ends with "bo," "bis," "bit," "bimus," "bitis," or "bunt." For 10 points, identify this Latin verb tense used to indicate actions that will be in progress after the present time.

ANSWER: Latin **future** tense [do not accept "future perfect"]

019-13-96-06129

14. This country's Dynamo Stadium has been the locus of protests, and several unofficial gangs known as "titushki" have attacked political opponents here. The Pravy Sektor is an extreme nationalist group in this country that opposes closer ties with Europe. Government restrictions on demonstrations in this country have been defied with mass demonstrations in the Maidan (my-DON). This country's prime minister is Mykola Azarov, and its current president is Viktor Yanukovich. For 10 points, name this country that has seen mass protests in its capital city of Kiev.

ANSWER: **Ukraine**

030-13-96-06130

15. This compound is a byproduct in the production of the soda ash in the LeBlanc process, which is subsequently removed through the Deacon process. Ethylene and this compound are reacted to form the monomer in PVC. An older name for this compound is muriatic acid. A solution of this compound and nitric acid can dissolve gold and platinum. Gastrin stimulates this compound's secretion in the body. For 10 points, identify this acid found naturally in the stomach that has formula H Cl.

ANSWER: **hydrochloric** acid [or **H Cl** until it is read; or **muriatic acid** until is read]

239-13-96-06131



1. The losing candidate in this election had reportedly sent the "cipher dispatches" offering bribes. That losing candidate in this election had fought the Canal Ring as a reformist governor of New York. After this election, Justice Joseph Bradley replaced David Davis as the ostensibly nonpartisan member of a commission. To resolve this election, Republicans agreed to end Reconstruction to receive disputed electoral votes. For 10 points, name this Presidential election in which Samuel Tilden received more popular votes but still lost to Rutherford B. Hayes.

ANSWER: United States Presidential election of **1876**

052-13-96-06132

2. In a short story by this writer, townspeople trying to win forty thousand dollars of gold claim that Barclay Goodson told a gambler to "Go, and reform." This author wrote a novel in which nineteenth-century mechanic Hank Morgan predicts an eclipse to take over Camelot. This author of "The Man That Corrupted Hadleyburg" and *A Connecticut Yankee in King Arthur's Court* also created a rascal who floats down the Mississippi with the slave Jim. For 10 points, name this American author who created Huckleberry Finn and Tom Sawyer.

ANSWER: Mark **Twain** [or Samuel Langhorne **Clemens**]

080-13-96-06133

3. This poet defined "true wit" as "nature to advantage dressed: what oft was thought, but ne'er so well expressed." His *An Essay on Man* and *An Essay on Criticism* display his mastery of the heroic couplet. His most famous poem describes the Baron's theft of the title entity from Belinda with the aid of his scissors. For 10 points, name this epigrammatic eighteenth-century poet of the mock-epic *The Rape of the Lock*.

ANSWER: Alexander **Pope**

014-13-96-06134

4. The system described by this set of statements has a conserved quantity called the Laplace-Runge-Lenz vector. One of these statements holds that a body's areal velocity is constant, while another relates the square of the sidereal period to the cube of an ellipse's semimajor axis. Isaac Newton used calculus to rigorously prove these laws, which were based on examinations of data taken by Tycho Brahe. For 10 points, identify this set of three laws, named for a German astronomer, that describe how planets move.

ANSWER: **Kepler's** laws of planetary motion

132-13-96-06135

5. The Grotthuss mechanism explains how this particle can move quickly in aqueous solutions, called this particle's "mobility". This particle is predicted to decay in ten to the thirty six years, and the simplest form of NMR spectroscopy is named for this particle. The existence of this charged particle was shown by Rutherford's gold foil experiment. The Bronsted-Lowry definition of an acid is a molecule's ability to donate one of these particles. For 10 points, identify this positively charged particle found in the nucleus.

ANSWER: **proton** [or **protium**; or **H+**; or **positively charged hydrogen**; prompt on **hydrogen**]

239-13-96-06136

This is a calculation question. Between which two values of  $y$  is the graph of " $y$  equals four times cosine of  $x$ , minus 5" bounded?

ANSWER: **-9 and -1** [or **-1 and -9**]

What term describes light composed of only a single wavelength, meaning it cannot be separated into different colors?

ANSWER: **monochromatic**