

1. This man created an astrologer who predicts the kidnapping of an wealthy heir named Harry Bertram. In one of his novels, Tressilian is rejected in favor of Robert Dudley by Amy Robsart. He also wrote of George Robertson, who kills Captain Porteous and marries Effie Deans. Another of his characters marries Rose Bradwardine after escaping arrest for participating in the Jacobite Rebellion. Those novels by this man are *Guy Mannering*, *Kenilworth*, *The Heart of Midlothian*, and *Waverley*. For 10 points, name this Scottish author of *Ivanhoe*.

ANSWER: Sir Walter **Scott**

079-11-25-02101

2. The dihedral angles between these compounds can be represented using a Ramachandran plot and they are bound to enzymes called aaRS. They were created in an experiment that passed sparks through a flask containing water, methane, ammonia and hydrogen and are represented by a three nucleotide long codon. tRNA is so named because it transfer these compounds to the ribosome. These compounds were created in the Miller-Urey experiment and their only achiral member is glycine. For 10 points, name this group of compounds that form the building blocks of proteins.

ANSWER: **amino acids**

064-11-25-02102

3. This poetic form was used by Samuel Daniel in his collection *Delia*. Pablo Neruda wrote a collection of one hundred of them. This form is also used in a novel by Vikram Seth, *The Golden Gate*, which makes use of the type named for Pushkin. Typically, this type of poem contains a turn from a problem to a resolution, known as the *volta*. Sequences of this type of poem in English include Sidney's *Astrophel and Stella* and a work by Shakespeare. For 10 points, name this fourteen-line verse form.

ANSWER: **sonnets**

024-11-25-02103

4. A particle known as X(3872) may consist of four of these particles, an unstable type of which is known as the "sea" variety. Experiments involving deep inelastic scattering provided the first significant evidence of their existence, and the Eightfold Way model was a predecessor of a model involving these particles. Due to color confinement, they cannot exist in isolation, but only in the form of hadrons. For 10 points, name these particles which come in six flavors, including charm and bottom.

ANSWER: **quarks**

024-11-25-02104

5. A fundamental disagreement between Keynesian and monetarist economics is the question of what this value is for the LM curve; for Keynesians it is very high, but for monetarists it is nearly zero. The "arc" kind of this quantity eliminates biases caused by the choice of the start point in the traditional formula for the "cross" kind of it, which measures the relationship between one good's price and the demand for a second good. Goods which one cannot live without have a low value of this quantity. For 10 points, identify this economic quantity that measures how much some curve, such as demand, can change in response to various conditions.

ANSWER: **elasticity**

019-11-25-02105

6. This practice was forbidden by the First Council of Braga due to association with the Priscillianists, but Rastafarian I-tal is generally considered to mandate this practice. A passage in Isaiah claims that lions will adopt this practice, and some claim they did in the Garden of Eden. This practice is widespread among Hindu sects such as Vaishnava (VAISH-nuh-vuh) and Bhakti Yoga (BAK-tee), and all Jains follow this practice due to their concept of ahimsa, or nonviolence towards all living things. For 10 points, name this practice encouraged by many religions, in which one does not eat meat.

ANSWER: vegetarianism

082-11-25-02106

7. Immediately after this event, one participant ended up on Aylmer Francis Robinson's island, where he was killed. This event resulted in the removal of Hub Kimmel from command. The McCollum memo has been interpreted to show the U.S. welcomed this event. The signal to begin this event was "Climb Mount Niitaka," and success was communicated with "Tora! Tora! Tora!" This event destroyed the ships *Utah*, *Oklahoma*, and *Arizona*. For 10 points, name this event that took place on December 7, 1941, and helped initiate U.S. involvement in World War II.

ANSWER: attack on Pearl Harbor [or Japanese attacking Hawaii; or Hawaii Operation; or Operation Z]

052-11-25-02107

8. One character in this book has a nightmare about feeling something under her like "a piece of cool silk dragged across my legs." At the end of this novel, a character sports new false teeth and has surprisingly gotten remarried. A character in this novel is actually the son of the Reverend Whitfield. One chapter in this work simply consists of Vardaman saying "My mother is a fish." Characters in this novel include Dewey Dell, who tries to get an abortion, and Darl, who tries to burn his mother's coffin. For 10 points, name this William Faulkner novel about the attempt to bury Addie Bundren.

ANSWER: As I Lay Dying

052-11-25-02108

9. In one role, this actor is found in an apartment under the name Tom Felton married to Mila Kunis's character Whippit. In addition to playing Taste Tripplehorn in *Date Night*, this actor appeared in a series of movies playing a character who provides tritium to an Alfred Molina-played scientist, whose attempts at sustained fusion lead to that scientist becoming Doc Ock. For 10 points, name this American actor who came to prominence in film by playing the son of the Green Goblin and friend of Mary Jane and Peter Parker named Harry Osborn in *Spider-Man*.

ANSWER: James Edward Franco

079-11-25-02109

10. The solution for one type of this system approximates the Hamiltonian as the product of an operator and its Hermitian conjugate. The ground state energy for one type of this system equals $\hbar \omega$ over two, via the solution to the Schrodinger equation. Another type of this system involves a second-order differential equation, which gives the solution that the position is a sinusoidal function of time. For 10 points, the pendulum and mass-on-a-spring are types of what system that comes in "quantum" and "simple" types?

ANSWER: harmonic oscillator [or quantum harmonic oscillator; or simple harmonic oscillator]

003-11-25-02110

11. A response to one of this man's works contains the lines, "When faith is lost, when honor dies, the man is dead!" That work is John Greenleaf Whittier's "Ichabod." He is the namesake of Jim Smiley's pet jumping frog in a Mark Twain story. In another story, he talks about how man was "tricked and trapped and bamboozled" while defending Jabez Stone in front of a jury of the damned. For 10 points, name this orator who bests the Devil in a Stephen Vincent Benet story.

ANSWER: Daniel **Webster**

003-11-25-02111

12. This site of the Sinus of Valsalva can become more and more attached to a nearby structure in a process called overriding. Overriding of this structure occurs in a fourfold affliction called the Tetralogy of Fallot. Many sufferers of Turner Syndrome see a narrowing of this structure, which may develop an aneurysm as a result of Marfan Syndrome. Near the navel, the iliac arteries split from it. Also the origin of the coronary arteries, it carries blood away from the left ventricle. For 10 points, name this largest blood vessel of the body.

ANSWER: **aorta** [prompt on "heart" until "nearby structure" is read]

079-11-25-02112

13. This group fought a series of battles known as the Musket Wars. They built hillforts known as *pa*, and are divided into tribes known as *iwi*. They nearly wiped out the pacifist Moriori, a group living on the Chatham Islands. Large amounts of this group's land were confiscated during the 1860s. This group signed an 1840 treaty drafted by William Hobson which gave Britain sovereignty over their country called the Treaty of Waitangi. For 10 points, name this indigenous people of New Zealand.

ANSWER: **Maori**

024-11-25-02113

14. Isothermal compressibility is a second derivative of this quantity and surface tension is equal to the change in this with respect to the change in surface area. This is equal to the sum over all the components of a system of the product of moles and chemical potential. Unlike a similar quantity, it does account for pressure and volume. E raised to the ratio of this to the negative product of RT gives the equilibrium constant. It is equal to the enthalpy minus the product of temperature and pressure. For 10 points, name this type of energy that is decreased in a spontaneous process.

ANSWER: **Gibbs** Free Energy

001-11-25-02114

15. Some of this battle's victorious commanders were Augustino Barbarigo (aw-goos-TEEN-oh bar-bar-EE-go) and Andrea Doria (AN-dree-uh DOR-ee-uh). The Real (RAY-awl) was the winning ship of this battle, which was preceded by the siege of Famagusta (fah-muh-GOO-stuh). During it, Miguel de Cervantes had his left arm amputated after being injured while serving on one of the many galleys. Fought in the Gulf of Patras, it saw Don John of Austria lead the Holy League to victory over Ali Pasha. For 10 points, name this 1571 naval battle that helped prevent Ottoman expansion into Europe.

ANSWER: Battle of **Lepanto**

079-11-25-02115

1A. What current Secretary of Defense was a hold-over from the George W. Bush administration?

ANSWER: Robert Michael **Gates**

1B. What oratorio by Georg Frideric Handel supposedly caused King George II to rise during its "Hallelujah Chorus"?

ANSWER: **Messiah**

2A. What piece of computer software translates source code from a high level language into machine-language?

ANSWER: **compiler**

2B. Name this band who sang about a "teenage wasteland" in "Baba O'Riley" and included a french horn in their rock opera *Tommy*.

ANSWER: The **Who**

3A. This is a 10-second calculation question. What is the radius of a sphere with volume $32/3 \pi$?

ANSWER: **2**

3B. This is a 10-second calculation question. What is quantity $6a - 5b$ end quantity squared?

ANSWER: **$36a^2 - 60ab + 25b^2$**

4A. What Greek letter is used to denote the fine structure constant in physics and a helical secondary structure in proteins?

ANSWER: **alpha**

4B. Name this executive order issued by Abraham Lincoln in 1863, which freed all the slaves in the Confederacy, but not yet in the border states.

ANSWER: **Emancipation Proclamation**

5A. This is a 20-second calculation question. What is the solution to the system of equations $2x - y = 12$ and $6x - 2y = 30$?

ANSWER: **$x = 3$** and **$y = -6$**

5B. This is a 20-second calculation question. In simplest terms, what is the sample variance of the set $\{2, 8, 11\}$?

ANSWER: **21**

6A. What author chronicled the decline of a family in *Buddenbrooks* and the demise of a writer in *Death in Venice*?

ANSWER: Thomas **Mann**

6B. What head coach of the New York Jets football team proclaimed his team's playoff game against Peyton Manning's Colts was "personal"?

ANSWER: Rex **Ryan**

7A. This is a 30-second calculation question. Johnny Lightning has 6 pictures of ibises and 14 pictures of tigerlilies. If Johnny Lightning selects three pictures at random without replacement, what is the probability of him choosing first two pictures of ibises and then a picture of a tigerlily? Express your answer in simplest terms.

ANSWER: **7/114**

7B. This is a 30-second calculation question. What is the slant height of a cone with radius 20 and height 21? It may help to think of a cone as a right triangle rotated about an axis.

ANSWER: 29 [prompt on square root of 841]

8A. The Doma Cathedral is found in what city that sits on the Western Dvina River and is the capital of Latvia?

ANSWER: Riga

8B. What language, notable for its lack of diphthongs, and the language in which the poem "The History of Tambuka" was written, is spoken by several million people mostly along the coast of eastern Africa?

ANSWER: Swahili

9A. What painting by Andrew Wyeth depicts a woman lying on the ground and crawling towards a house?

ANSWER: Christina's World

9B. What California peak, named for its state geologist, is the highest peak in the lower 48 states?

ANSWER: Mount Whitney

10A. What Egyptian man served from 1997 to 2009 as the head of the International Atomic Energy Agency and was briefly placed under house arrest during the 2011 Egyptian Revolution?

ANSWER: Mohamed ElBaradei

10B. What German scientist proposed the 1912 theory of continental drift, which not accepted until years later?

ANSWER: Alfred Wegener

1. According to Fubini's theorem, the order in which this operation is performed does not matter. The surface variety forms the basis of the divergence theorem, while the line form of this operation can be calculated with Green's theorem. If one of their bounds is positive or negative infinity, they are known as improper. Depending on whether or not their endpoints are defined, they can be either definite or indefinite, and they can be approximated using Riemann's sum. For 10 points, name this operation in calculus which can be used to find the area under a curve.

ANSWER: **integration** [or equivalents such as taking an **integral**]

064-11-25-02117

2. One member of this family suffers from guilt over not getting a doctor for his wife's appendicitis. A fight over a box of Cracker Jacks leads another member of this family to reveal that her older brother killed a man. The car enthusiast in this family becomes engaged to Aggie Wainwright at the end of the novel in which they appear. For 10 points, Uncle John, Ruthie, and Al are members of what family at the center of *The Grapes of Wrath*?

ANSWER: **Joads**

003-11-25-02118

3. An ionized form of this element produces solar absorption lines called the H and K lines. Its hydroxide is used as a flocculant and is part of a solution which is used to test for the presence of carbon dioxide. Its chloride is a byproduct of the Solvay process. Ions of this element are stored in the sarcoplasmic reticulum and play a role in muscle contraction. Its oxide is sometimes known as quicklime. For 10 points, name this element which is a component of bones and teeth.

ANSWER: **calcium**

024-11-25-02119

4. The title character of this opera sings the aria "Ritorna Vincitor" (REE-tore-nah VEEN-see-tore) in act 1. "O terra, addio" (OH TAHR-ahd-DEE-oh) is performed by the title character and her lover as they are entombed together while still alive. The title character sings about her homeland in "O Patria Mia." Ramfis, the high priest, blesses the impending wedding of Amneris in this opera. The title character is condemned to death for choosing to love Radames. For 10 points, name this opera by Giuseppe Verdi about an Ethiopian princess who is captured by the Egyptians.

ANSWER: **Aïda** (eye-EE-duh)

027-11-25-02120

5. The decision *Loewe v. Lawlor* extended the provisions of one of them to unions. Another one of them was modified by the Celler-Kefauver and Robinson-Patman Acts, the latter of which prohibits price-freezing. The most notable one was passed in 1890 and sponsored by an Ohio Senator to prevent unfair business combinations such as the one Standard Oil was planning. For 10 points, identify these acts named for Clayton and Sherman that prevent monopolies.

ANSWER: **antitrust** acts [**trust-busting** acts; or **competition** laws; accept "laws" for "acts"; or **Sherman Antitrust** Act before mentioned; or **Clayton** Antitrust Act before mentioned; prompt on **Sherman** Act before mentioned]

079-11-25-02121

6. This substance is dissolved in zinc chloride in a reagent used for classifying alcohols named for Lucas. With a zinc amalgam, it participates in the reduction of ketones to alkanes in the Clemmenson Reduction. It is mixed with nitric acid to make aqua regia. Though it is highly corrosive to skin, this acid, also called muriatic acid, is often used by high school students in classroom titration labs. It lowers the pH of stomach contents as a major component of gastric acid. For 10 points, name this strong acid symbolized HCl.

ANSWER: **hydrochloric acid** [or **spirits of salt**; accept **muriatic acid** before mentioned; accept **HCl** before mentioned]

079-11-25-02122

7. This work's speaker states that he does not covet gold, "but if it be a sin to covet honour / I am the most offending soul alive." The speaker of this work beseeches his cousin Westmoreland to "wish not one man more!" This speech predicts that certain men shall "hold their manhoods cheap" while others will strip their sleeves and show their scars. This speech, whose speaker has earlier cried "Once more unto the breach," contains the line "We few, we happy few, we band of brothers." For 10 points, name this speech delivered before the Battle of Agincourt by Shakespeare's Henry V.

ANSWER: "**St. Crispin's Day**" Speech [prompt on **Henry V** before it is read]

080-11-25-02123

8. This figure fought off Rhoikos (ROI-kohs) and Hylaios ("HIGH"-lie-ohs), two centaurs who tried to rape her. This daughter of Iasius ("I"-ay-see-us) fathered Parthenopaeus (par-thuh-noh-PEE-us), one of the Seven Against Thebes. After having sex in Cybele's (SIB-uh-lee's) temple, she is turned into a lion. Raised by a she-bear, this figure loses a footrace after three apples are thrown at her by her opponent Hippomenes (hi-POM-uh-nee-z). She also helps Meleager (mel-ee-ay-JER) kill the Calydonian (KAL-i-don-ee-uhn) Boar. For 10 points, name this only female Argonaut.

ANSWER: **Atalanta**

079-11-25-02124

9. This man invented the current balance and a notable compass for the British Navy. He estimated the Earth to be at most forty million years old and helped in the design and laying of transatlantic telegraph cables. This baron co-discovered the effect by which gases grow cooler as they expand; he co-names that effect with James Joule. He also names a scale in which zero degrees is equal to negative 273 degrees Celsius. For 10 points, name this Irish scientist who names a temperature scale that includes absolute zero.

ANSWER: Lord **Kelvin** [or William Thomson, 1st Baron **Kelvin**; or William **Thomson**, 1st Baron Kelvin]

079-11-25-02125

10. The third act of this play ends with a woman flinging her pen and proclaiming "Oh, men! Men! Men!" In the first act of this play, a character is accused of being a police informer because he is taking notes on people's actions in Covent Garden. This play ends with a character laughing about the supposed marriage of Freddy Eynsford Hill. The central action of this play begins when Colonel Pickering makes a bet with an expert in phonetics. For 10 points, name this George Bernard Shaw play about Professor Henry Higgins making flower girl Eliza Doolittle into a lady.

ANSWER: **Pygmalion**: *A Romance in Five Acts*

052-11-25-02126

11. Patients with McArdle's disease lack the enzymes needed to break down this material. The synthesis of this material makes use of a compound called UDPG along with an enzyme that creates branches along its linear framework; thus this material contains both 1,4 and 1,6 alpha glycosidic bonds. Marathon runners "hit the wall" when they deplete their supply of this material which is the animal analogue of plant starch. For 10 points, name this polymer of glucose found in the human body which is broken down by the hormone glucagon.

ANSWER: **glycogen**

064-11-25-02127

12. In defiance of the bishop of Constance, this man married Anna Reinhart. Under this man's rule, Felix Manz was executed for his Anabaptist beliefs. He was succeeded by Heinrich Bullinger after he was killed by Catholics while serving as a chaplain during the Second Kappel War. This author of *On The True and False Religion* argued that Christ was not present in the Eucharist during his debate with Luther at the Marburg Colloquy (CALL-uh-kwee). For 10 points, name this Swiss Protestant who led the church of Zurich.

ANSWER: Huldrych **Zwingli** [or Ulrich **Zwingli**]

079-11-25-02128

13. Along with Ansel Adams, this artist worked at Manzanar during World War II, and of this artist's notable works shows Japanese children pledging allegiance to the flag prior to being interned. This artist depicted a huddled group of men, with one looking away, clasping his hands, and standing by an empty cup. This artist of "The White Angel Breadline" produced a photograph depicting Florence Owens Thompson, who worriedly sits with her children after fleeing the Dust Bowl. For 10 points, name this photographer, best known for her image "Migrant Mother."

ANSWER: Dorothea **Lange**

052-11-25-02129

14. This founder of *The Stylus* journal condemns "the poem written for the poem's sake" in an essay that attacks epics entitled "The Poetic Principle." Similarities to Dickens's *Barnaby Rudge* led James Russel Lowell to decry one of this man's poems as "three-fifths genius / two-fifths pure fudge." This man wrote an essay called "The Philosophy of Composition" about that poem, in which he explains the "unity of impression" created by a "pallid bust of Pallas" and the repetition of the word "nevermore." For 10 points, name this author of "The Raven."

ANSWER: Edgar Allan **Poe**

079-11-25-02130

15. In one election, this man attacked Helen Gahagan Douglas by calling her "the pink lady." At the American National Exhibition in Moscow, this man engaged in the "Kitchen Debate" with Nikita Khrushchev. After losing a governor's race to Pat Brown, this politician erroneously said the press wouldn't have him to kick around anymore. In another election, this man defended his use of a slush fund with the "Checkers" speech. For 10 points, name this former Vice President under Eisenhower, who lost the presidency to John F. Kennedy in 1960, but eventually was elected president in 1968.

ANSWER: Richard Milhous **Nixon**

052-11-25-02131

1. Jessica Mitford wrote “the American way of” this, which was a bestselling investigation into a certain industry. According to another writer, one instance of this happening “utterly transforms the modern text” and leads to “the birth of the reader.” A phenomenon which often ensues from this event was described in a book on this occurrence and its process, which outlines a five-stage model including bargaining and acceptance. For 10 points, Elizabeth Kubler-Ross’s five stages of grief often follow what event, which is studied by thanatologists and coroners?

ANSWER: death [or dying or other word forms]

019-11-25-02132

2. In some versions of this figure's story, he dies when a blood vessel bursts in his brain. The most famous exploit of this figure is said to have taken place near Big Bend Tunnel, and some scholars claim that that exploit took place in Talcott, Virginia. This figure is said to have challenged the owner of the railroad for which he works to a contest, and won the contest by defeating a steam-powered hammer in a race. For 10 points, name this "steel-driving man" of American folklore.

ANSWER: John Henry

024-11-25-02133

3. This author created Charles Morel, a violinist who is patronized by Baron de Charlus. This man also created the composer Vinteuil (VIN-toy), who is favored by Gilberte’s (JEEL-bairt) mother Odette de Crecy. Those characters appear in a novel with sections such as “Sodom and Gomorrah,” “The Sweet Cheat Gone,” and “The Guermantes (GAIR-mant’s) Way.” That novel by this man consists of the memories of the narrator as sparked by the sight of a tea-soaked madeleine cake. For 10 points, name this French author of *Remembrance of Things Past*.

ANSWER: Marcel Proust (PROOST)

079-11-25-02134

4. This leader said "We are with Europe, but not of it" in refusing to join the European Coal and Steel Community. This man attempted to attach the slogan "Keep England White" to his political party. During his ministry, this man had to deal with the beginning of the Mau Mau uprising. This man was both succeeded and preceded by Clement Attlee in his most notable position. In Fulton, Missouri, this man gave the "Iron Curtain" speech. During wartime, he proclaimed "we shall fight on the beaches...we shall never surrender." For 10 points, name this British Prime Minister during World War II.

ANSWER: Winston Leonard Spencer Churchill

052-11-25-02135

5. One character in this play, Joe Mott, insists that someday he will re-open his casino. Two characters in this play fought on opposite sides in the Boer War, and the owner of the central establishment of this work has not left it since his wife died, and promises to walk around the block for his birthday. Late in Act I, Hickey enters, claiming he will rid the other characters of their “pipe dreams,” and eventually confesses to shooting his wife. The action of this play takes place in Harry Hope’s Saloon. For 10 points, name this play by Eugene O’Neill.

ANSWER: *The Iceman Cometh*

002-11-25-02136

This is a calculation question. In simplest terms, what is the area of a square inscribed in a circle of radius 4?

ANSWER: 32

002-11-25-02137

What 48 bit addresses are given to interfaces in Ethernet and other similar network schemes.

ANSWER: **MAC** address[or **Media Access Control** address]

002-11-25-02137