

1. Early work on this structure was supervised by Bishop Gundulf. Six ravens with clipped wings are kept here to ensure the safety of this building's country. In 1674, two skeletons believed to be those of princes were found in this structure. This building is guarded by yeomen in red and gold uniforms known as the Beefeaters. For 10 points, name this castle that houses the Crown Jewels of England, and which is where Thomas More and Sir Walter Raleigh were held before their execution.

ANSWER: **Tower of London**

080-11-25-06101

2. One method of developing a landscape named for these objects is to employ the random midpoint displacement algorithm. One of their original developers applied them to modeling the coastline of Britain. They are characterized by having a topological dimension less than their Hausdorff dimension, and some of them are named for Moore, Julia, and Koch. They exhibit some form of self-similarity. One of the most famous examples of these involves removing the central equilateral triangle from each equilateral triangle in a figure repeatedly, named the Sierpinski triangle. For 10 points, name these repeating geometric figures developed by Benoit Mandelbrot.

ANSWER: **fractals**

048-11-25-06102

3. The title character of one play by this writer says, "tomorrow we shall make something strong of this sorrow," after being disillusioned by the corruption of mayoral Candidate Wally O'Hara. That work is *The Sign in Sidney Brustein's Window*. In another play by this author, Mrs. Johnson's quoting of Booker T. Washington prompts Lena to call him a "fool." In that play, Karl Lindner tries to bribe the Younger family to stop them from moving into a white neighborhood in Chicago. For 10 points, name this writer of *To Be Young, Gifted, and Black* and *A Raisin in the Sun*.

ANSWER: Lorraine **Hansberry**

030-11-25-06103

4. Two scientists with this name derived a version of the Clausius-Mossotti formula which relates refractive index to polarizability. Another scientist with this name wrote a paper about his namesake "attractor" and gave one of the first descriptions of chaos theory. Another scientist with this name wrote "On Aggression" and performed an experiment in which he imprinted newborn geese upon himself. A physicist with this name derived a series of transforms within Minkowski space which take one relativistic reference frame to another. For 10 points, give the common last name of these scientists, with first names Ludvig, Konrad, and Hendrik.

ANSWER: **Lorenz** [or **Lorentz**]

048-11-25-06104

5. This man rejected Kant's "intuitionism" in favor of empirical observation in one work. He noted that it was "better to be Socrates dissatisfied than a fool satisfied" in arguing for the superiority of intellectual pleasures, like reading Wordsworth, over physical pleasures. This author of *A System of Logic* argued that the government should only take away a man's rights in order to prevent harm to another person in his *On Liberty*. He was influenced by the earlier work of Jeremy Bentham in formulating the "greatest-happiness principle." For 10 points, name this British Utilitarian philosopher.

ANSWER: John Stuart **Mill**

080-11-25-06105

6. In one essay by this man, an unnamed policeman in Burma is pressured by the natives to kill the title creature. In addition to "Shooting an Elephant," this man wrote a novel in which the protagonist is married to the absent Katharine and works with Ampleforth, and another novel in which Boxer is exploited before being sent to his death by Napoleon. The latter novel sees the implementation of a maxim that states "all" the title characters "are equal, but some are more equal than others." For 10 points, name this English author who wrote the dystopian *1984* and *Animal Farm*.

ANSWER: George **Orwell** [or Eric Arthur **Blair**]

081-11-25-06106

7. One of this group's members published the *Washington Globe* and attempted to help negotiate the end of the Civil War by organizing the Hampton Roads Peace Conference. Another man who worked with this group also served as Postmaster General and founded Gallaudet University, a school for the deaf. Those members of this body were Francis Blair and Amos Kendall. Nicholas Biddle lamented that this group "predominated over the parlor," and it was often consulted after the Peggy Eaton affair. For 10 points, name this informal group that advised President Andrew Jackson.

ANSWER: **Kitchen Cabinet** [do not accept "Andrew Jackson's Cabinet"]

030-11-25-06107

8. Post's problem deals with the existence of intermediate value's of this man's namesake degrees. This man's namesake tarpit refers to the inability to get past the equivalence of processing systems. His work on the *Entscheidungsproblem* lead to his notion of computable numbers. That work also lead to his discovery of the undecidability of the halting problem. The construct with which he's most associated has an infinite tape and is used as a model of computation. For 10 points, name this English computer scientist whose namesake test is designed to determine if humans can successfully mimic human behavior and the inventor of a namesake type of machine.

ANSWER: Alan **Turing**

081-11-25-06108

9. One musical set aboard a ship that departs from this country includes the songs "It's De-Lovely" and "I Get a Kick out of You." That work is *Anything Goes* by Cole Porter. *On the Town* by Leonard Bernstein is about sailors from this country. One person from this country goes to Paris in a Gershwin musical. One musical set in this country includes the song "You're the One That I Want" and is entitled *Grease*. For 10 points, name this country that is the home of composer George M. Cohan, who wrote the song "Yankee Doodle Boy," and where musicals are often performed on Broadway.

ANSWER: **U.S.A** [or **United States** of America; or **America**]

027-11-25-06109

10. When these structures are wounded, they are patched up by peroxisome-dense double membranous microbodies named for Woronin. The growth of these structures are controlled by organelles called Spitzenkorpers. These structures are made up of individual cells that are divided by septa. Yeasts are unicellular, and thus do not have these structures. For 10 points, name these branching filaments that collectively form the mycelium in fungi.

ANSWER: **hyphae** [or **mycelium** before stated]

026-11-25-06110

11. This writer began one poem describing the "various language" with which Nature speaks to those who hold "Communion with her visible forms." One of this author's poems asks the title creature why "dost thou pursue thy solitary way?" In another poem, this author instructed the reader "go not, like the quarry slave at night," instead urging the reader to "[lie] down to pleasant dreams." For 10 points, name this long-time *New York Evening Post* editor who wrote "To A Waterfall" and "Thanatopsis," an early American poet.

ANSWER: William Cullen **Bryant**

026-11-25-06111

12. This politician said that an IRS plan to make buying breast-feeding equipment a medical expense was part of creating a nanny state in the U.S. In one speech, this politician claimed that "we also know that the... founders ...worked tirelessly until slavery was no more in the United States." Another slipup for this politician allegedly occurred because of the presence of multiple cameras, which made her look to the side of the screen while delivering the Tea Party rebuttal to Obama's 2011 State of the Union. For 10 points, name this Minnesota Representative expected to run for president in 2012.

ANSWER: Michele Marie **Bachmann** [or Michele Marie **Amble**]

023-11-25-06112

13. One work by this man includes the characters Miriam and Donatello, who resembles the title figure. This author of *The Marble Faun* wrote a story which sees the title man and his wife Faith stumble upon a witches' meeting in the forest, and one in which Georgiana dies after Aylmer removes the title object. In addition to "Young Goodman Brown" and "The Birthmark," this man wrote a novel in which Hester Prynne becomes ostracized after being branded with the title emblem. For 10 points, name this author of *The Scarlet Letter*.

ANSWER: Nathaniel **Hawthorne**

081-11-25-06113

14. This country saw an effort to quell resentment towards the government by distributing 1,000 of its dollars to all of its families. The death of Ali Abdul Hadi Mushaimai occurred during a day of coordinated protests in this nation designed to occur ten years after the signing of its National Action Charter. The Al-Wefaq party officially joined the opposition groups in this country that has seen violence near its Roundabout Square and Monument. Governed by King Hamad ibn Isa Al Khalifa, for 10 points, name this Arab nation that has seen rioting in its capital Manama.

ANSWER: **Bahrain**

040-11-25-06114

15. The African-American Moses Sash participated in this event and received double the number of indictments as its other participants. It was put down on the orders of Governor James Bowdoin, who did so using forces under the command of William Shephard. The decisive battle at which this rebellion was put down occurred at the Springfield Armory. Many of its participants were captured at Petersham. A refusal to abide by a law allowing for the confiscation of farmers' properties led to, for 10 points, what rebellion that occurred in 1787 in Massachusetts?

ANSWER: **Shays'** Rebellion

040-11-25-06115

1A. Generals MacArthur and Ridgeway were American commanders during which conflict that saw battles at Inchon and Pusan and led to the establishment of a Demilitarized Zone?

ANSWER: **Korean** War

1B. What action is indicated by the verbs “springen” in German, “saltar” in Spanish, and “sauter” in French?

ANSWER: **jumping**

2A. Dingane, Mpande, and Cetshwayo were rulers of which African people who were armed by the British to fight against the Boers, leading to the battle of Dleke Hill?

ANSWER: **Zulus**

2B. Titled the same as its artist's second album, what song, released on February 11th, contains a repeated refrain that asks listeners to not be a drag and just be a queen?

ANSWER: **"Born This Way"**

3A. This is a 10-second calculation question. In simplest terms, what is the determinant of the matrix whose first row is [1 3] and whose second row is [2 7].

ANSWER: **1**

3B. This is a 10-second calculation question. If there are six black socks and six white socks in a drawer, what is the probability of drawing a matching pair?

ANSWER: **5/11**

4A. A leading suprematist, which Russian painter is remembered for his geometrically and chromatically themed works such as *Black Square* and *White on White*?

ANSWER: Kasimir **Malevich**

4B. What American architect collaborated with John Root on the Masonic Temple Building and the Flatiron Building in addition to overseeing the 1893 Columbia Exposition?

ANSWER: Daniel **Burnham**

5A. This is a 20-second calculation question. Find all solutions to the following equation: the quantity $x^2 + 4x + 3$, all over the quantity $3x^2 + 7x - 6$, equals 0.

ANSWER: $x =$ **-1** [do not accept any answer including "-3"]

5B. This is a 20-second calculation question. Find the 95 percent confidence interval for the population mean if the sample mean is 20 and the sample standard deviation is 10.

ANSWER: **(0,40)** ("0 to 40") [accept **(0.4,39.6)**]

6A. Originally developed to aid in determining whether ships' sails should be hoisted, what scale, commonly using ratings from a zero to a twelve, is used to measure the intensity of winds?

ANSWER: **Beaufort** Scale

6B. Styles of drama named noh and kabuki were developed in which nation whose playwright Zeami Motokiyo is known for works such as *The Feather Mantle* and *The Well Cradle*?

ANSWER: **Japan**

7A. This is a 30-second calculation question. The longest diagonal in a right rectangular prism measures 13 units. If the length, width, and height are all integers, what is the prism's volume?

ANSWER: **144**

7B. This is a 30-second calculation question. Find all values of x on the domain 0 to 2π , inclusive, that satisfy the equation $2 \sin^2 x + 5 \sin x - 3 = 0$.

ANSWER: $x = \frac{\pi}{6}$ and $x = \frac{5\pi}{6}$

8A. Name the leader of Czechoslovakia whose idea of "socialism with a human face" during the Prague Spring led to the Soviet invasion of his country and his removal from power.

ANSWER: Alexander **Dubcek**

8B. What British physicist discovered Argon and a namesake scattering, which explains why the sky is blue?

ANSWER: Lord William **Strutt** [or 3rd Baron **Rayleigh**]

9A. A "teacher" and a "learner" that would attempt to correctly identify word pairs was at the heart of which experiment, performed in Yale University, whose supposed purpose was to identify the effects of electric shocks on learning ability?

ANSWER: **Milgram** Experiment

9B. Gabrielle Anwar, Sharon Gless, and Jeffrey Donovan are among the stars of which television show known for its freeze frames and narration that centers on ex-spy Michael Weston?

ANSWER: **Burn Notice**

10A. What hypothetical particle is postulated to endow elementary subatomic particles with mass and is sometimes called the "God particle?"

ANSWER: **Higgs** boson [or **Higgs** particle]

10B. Recent troubles with alcohol and resisting arrest have repeatedly plagued Miguel Cabrera, a player for which baseball team that plays home games at Comerica Park?

ANSWER: **Detroit** Tigers [or Detroit **Tigers**]

1. This author wrote a play about a woman who lives for three hundred years, *The Makropulos Affair*. This writer told of Mr. Bondy's attempt to get the title characters to work on hydroengineering projects instead of the pearl-fishing industry in a play about intelligent amphibians found on an island near Sumatra. This author of *The War With the Newts* also wrote a play in which Marius, Sulla, and Radius are among the title mechanical people manufactured by the Rossum's Universal factory. For 10 points, name this Czech author who invented the word "robot" in his play *R.U.R.*.

ANSWER: Karel Capek (CHAH-peck)

026-11-25-06117

2. These compounds are transported by the AcrAB/TolC system. Genes such as neo whose products interact with these compounds are often used to positively select gene knockout mice cells. Several classes of these are degraded by Beta-lactamase and that class inhibits proper assembly of peptidoglycan. Another common mechanism for these substances is the inhibition of translation. Notable examples include tetracyclines and penicillin. For 10 points, name these compounds that are used to fight bacterial infections.

ANSWER: antibiotics

001-11-25-06118

3. In this work, the title character is entertained at Auerbach's Cellar, and is then taken to the Witch's Kitchen. The title character's frustration is expressed in this play's "Prologue in Heaven." Wagner works on creating a human being, the Homunculus, in this work. The title character drinks a potion that takes thirty years off of his life and seduces Gretchen, and he later has a son Euphorion with Helen of Troy. For 10 points each, name this play in which the title scholar gives his soul to Mephistopheles, a play by Johann Wolfgang von Goethe.

ANSWER: Faust

030-11-25-06119

4. Joel Garreau described recently-created examples of these things in his book *Edge [this]*, and William Whyte subtitled a book about these entities "Rediscovering the Center". One writer used the example of one named "obsidian" to claim they were older than agriculture, and showed how they drove import replacement in *The Economy of [this]*. That writer, Jane Jacobs, also argued against conventional renewal projects in *Death And Life Of Great American* these. Lewis Mumford also described these things "in history" For 10 points, give this term for large urban centers.

ANSWER: city

082-11-25-06120

5. These bodies form through a process that begins with ambipolar diffusion, which leads to cloud collapse. During the formation of these bodies, they go through the Hayashi and sometimes the Henyey track. The Pillars of Creation are a region in which many of these bodies form. These bodies can be grouped by population depending on their metallicity. Their life cycles follow the Main Sequence of the Hertzsprung-Russell diagram. For 10 points, name these bodies that include Alpha Centauri and the sun.

ANSWER: stars

026-11-25-06121

6. Works in this style required a chorus to sing a parodos and multiple stasima. This style may take its name from the goat skins worn by performers of dithyrambs. Book Six of Aristotle's *Poetics* defines it as "an imitation of an action that is serious, complete, and of a certain magnitude." In an annual contest, three of this type of play were presented along with a satyr play. For 10 points, name this style of Greek drama contrasted with comedy.

ANSWER: Greek **tragedy**

003-11-25-06122

7. Ernst Ising solved his own model of ferromagnetism for cases in which this measure was one, but Lars Onsager solved it for cases in which this measure is two. Minkowski space has a measure of four for this property. String theory and M-theory propose that several of them have "curled up" at a subatomic level. In relativity, the fourth one of them is time. For 10 points, name this minimum number of coordinates needed to describe each point within a space, which is three for a cube and two for a square.

ANSWER: **dimensions**

026-11-25-06123

8. This man composed a concerto in only two movements, linked by a cadenza, the second of which is a rondo based on Latin American themes. Another of this composer's works is a song cycle based on twelve Emily Dickinson poems. This man wrote a Clarinet Concerto to be played by Benny Goodman, and he incorporated the folk-song "El Palo Verde" into his *El Salon Mexico*. He composed music for a ballet that incorporates the Shaker hymn "Simple Gifts" and was choreographed by Martha Graham. For 10 points, name this American composer of *Appalachian Spring*.

ANSWER: Aaron **Copland**

080-11-25-06124

9. The *Blue Cliff Record* is a text of this school, which was brought to China in the 500s by Bodhidharma (bode-HEEN-harm-uh) and to the west in the 1900s by D.T. Suzuki. The Soto sect emphasizes seated meditation called *zazen*, while the Rinzai sect uses paradoxical riddles called *koans*. Descended from Mahayana sources, it is widespread in Japan and stresses the importance of wisdom in gaining enlightenment. For 10 points, name this school of Buddhism whose name is associated with calmness.

ANSWER: **Zen** Buddhism [or **Chan** Buddhism; prompt **Buddhism**; prompt **Mahayana** Buddhism]

079-11-25-06125

10. This quality is described as being both temporal, timeless, and a combination of the two, and its attributes of historicism let it avoid the trap of novelties being preferable to repetition. It is remarked as lamentable that this term has been linked to the science of archaeology. The essay that analyzes it concludes by recommending a move away from analyzing poets to analyzing their works. For 10 points, name this concept contrasted with the "Individual Talent" in a T. S. Eliot essay, a term referring to bygone practices.

ANSWER: "**Tradition** and the Individual Talent"

040-11-25-06126

11. The protagonist of this work is often disciplined by "The Tickler" of Mrs. Joe Gargery. This novel's protagonist is nicknamed "Handel" by a character who marries Clara Barley, Herbert Pocket. One character in this novel lives in Satis House and has not changed out of her wedding dress since being abandoned on her wedding day. That character from this novel is Miss Havisham. Abel Magwitch is the anonymous benefactor of this novel's main character, who is in love with Estella. For 10 points, name this novel by Charles Dickens about Pip.

ANSWER: Great Expectations

030-11-25-06127

12. GPR30 is a receptor primarily for this messenger. It is antagonized by tamoxifen. It is created by through the conversion of a similar compound by aromatase. Stilbestrol is an analogue of this. This is actually a class of hormones including estradiol. Along with progesterone, it is the most common substance used in hormone replacement therapy for post-menopausal women. It For 10 points, name these hormones associated with female reproductive traits.

ANSWER: estrogen [or estradiol before mentioned]

001-11-25-06128

13. The Union's victory in this battle depended on the actions of Prentiss and Wallace, who defended the "Hornet's Nest." It was fought after the opening of the Tennessee and Cumberland Rivers during the battles of Forts Henry and Donelson. Albert Sydney Johnston was killed at this battle, which turned after Don Carlos Buell's forces arrived on the second day. For 10 points, name this battle fought at Pittsburg Landing that was a major Civil War engagement in southwestern Tennessee.

ANSWER: Battle of Shiloh [or Battle of Pittsburg Landing before mentioned]

026-11-25-06129

14. The Fermi energy explains why electrons do not significantly contribute to this material property at high temperatures, and the Debye temperature appears in an equation that shows a cubic dependence of this property on temperature at low temperatures. At constant volume, the molar form of this property is equal to about twenty-five Joules per mole Kelvin by the Law of Dulong and Petit. For 10 points, name this material property typically defined as the amount of heat needed to raise the temperature of one gram of substance by one degree Celsius.

ANSWER: specific heat capacity [prompt on heat capacity until "gram"]

003-11-25-06130

15. One being associated with this entity is a son of Seven Macaw named Zipacna, while another figure associated with this was frequently depicted with a staff and is Serapis. Another deity of this location is the father of Horus who is said to preside over a ceremony in which a person's heart is weighed against a feather of Ma'at. Perhaps the most notable deity of this location is a possessor of the cap of invisibility, the brother of Zeus and Poseidon who is also associated with the dog Cerberus. For 10 points, name this region associated with the Egyptian Osiris and the Greek Hades.

ANSWER: the underworld [or gods of the underworld; or equivalents such as afterlife; prompt on death or word forms only before the word "location" is read; do not accept or prompt afterwards]

081-11-25-06131

1. The U.S. Geological Survey defines this body of water's northern boundary by three lines, one of which connects Fidalgo and McGlinn Islands, and another one of which follows Deception Pass. It borders the Kitsap Peninsula and is considered part of the Salish Sea. Admiralty Inlet connects it to the Strait of Juan de Fuca. Its namesake Naval Shipyard is in Bremerton, and the largest city on its shores is the seat of King County. For 10 points, Tacoma and Seattle are the largest cities on what sound in Washington state?

ANSWER: **Puget Sound** [or **Puget** Sound after it is mentioned]

003-11-25-06132

2. In organic chemistry, common reagents used in this kind of reaction include PCC and chromic acid, and this type of reaction converts KA-oil into adipic acid. Two of this kind of reaction are used in the Ostwald process for producing nitric acid from ammonia. In biochemistry, Vitamins C and E inhibit this kind of reaction, which can be caused by free radicals. For 10 points, name this type of reaction in which a reactant loses electrons, which is contrasted with reduction.

ANSWER: **oxidation**

003-11-25-06133

3. This man made Herod the Great Tetrarch of Galilee, and in Athens he was deified as New Dionysus. This man's wife Fulvia was given the heads of Rufus and Cicero following the proscription of 43 BCE. He led Julius Caesar's left wing at the Battle of Pharsalus. He later organized a mob that drove Caesar's assassins from Rome. This man suffered a defeat at the hands of Marcus Vipsanius Agrippa in the naval battle of Actium. For 10 points, name this member of the triumvirate who committed suicide following his and Cleopatra's defeat at the hands of Octavian.

ANSWER: Mark **Antony** [or Marcus **Antonius**]

030-11-25-06134

4. This city's Garden Ring is a series of roads which follow the path of sixteenth-century fortifications. Its subway system consists of eleven spoke lines connected by a 20-kilometer ring line, and some of its ornate stations are decorated with once-royal chandeliers. This city is home to a theater whose ballet company premiered *Spartacus* and a church whose many sanctuaries are each topped with onion domes. This home of the Bolshoi Ballet and St. Basil's Cathedral is centered on Red Square. For 10 points, name this home of the Kremlin and capital of Russia.

ANSWER: **Moscow**

082-11-25-06135

5. In one novel set in this state, the albino Dave is kidnapped in order to divine a gold lode, which is supposedly located in Ty Ty Walden's title estate. That novel is *God's Little Acre*, which, like *Tobacco Road*, was written by Erskine Caldwell. Another work set in this state sees the Misfit murder a quarreling family. That work set in this state is "A Good Man is Hard to Find" by Flannery O'Connor. For 10 points, name this Southern state that was the home of Scarlett O'Hara in Margaret Mitchell's *Gone With the Wind*.

ANSWER: **Georgia**

030-11-25-06136

This is a calculation question. What is tangent of pi over 6 times cosecant of pi over 4?

ANSWER: square **root** of **6 over 3** [or square **root** of **2/3**]

030-11-25-06137

What British author wrote *Decline and Fall* and *Brideshead Revisited*?

ANSWER: Evelyn St. John **Waugh**

030-11-25-06137