

1. These units are the site of dosage compensation. If an extra one of them is present, the extra undergoes lyonization to form an inactive Barr body. The lack or alteration of one causes Turner's Syndrome, while an extraneous one causes Klinefelter's Syndrome. Autism frequently results from a "fragile" one. They are home to the allele for color-blindness. For 10 points, name this larger of the two sex chromosomes that, in males, joins the Y.

ANSWER: X chromosome

079-10-22-01101

2. This author included character sketches of an old soldier and a stout gentleman, among others, in his book *Bracebridge Hall*. His time in Spain inspired his collection *Tales of the Alhambra*. He used the pseudonym of Geoffrey Crayon to write a story in which Katrina Van Tassel's suitors include Brom Bones and Ichabod Crane, as well as a story whose title character sleeps in the Catskills for twenty years. For 10 points, name this author of "The Legend of Sleepy Hollow" and "Rip Van Winkle."

ANSWER: Washington Irving

024-10-22-01102

3. In August 2010 this man demanded four billion euros to stop immigration from his country. This man gave five hundred Italian models a copy of his *Green Book*, the Koran, and a lecture. He demanded an investigation into JFK's assassination in a rambling speech to the UN, and brings an elaborate tent with him on all his foreign trips. After being visited by Nelson Mandela, he reluctantly agreed to hand over the Lockerbie bombers. For 10 points, name this autocratic ruler of Libya.

ANSWER: Muammar Abu Minyar al-Gaddafi [or Muammar Abu Minyar al-Qaddafi]

015-10-22-01103

4. This author wrote an essay about the demise of the social novel, entitled "Perchance to Dream." He also translated Frank Wedekind's *Spring Awakening* into English. His most recent novel, about Patty and Walter Berglund, is entitled *Freedom*. He is best known for a novel, about the family of the Parkinson's sufferer Alfred Lambert, which was selected for Oprah's Book Club. For 10 points, name this author of *The Corrections*.

ANSWER: Jonathan Franzen

024-10-22-01104

5. A southwestern state of this country takes its name from the former Oyo Empire. Port Harcourt is the center of this nation's petroleum industry, which drew criticism following the death of Ken Saro-Wiwa. The Igbo are an ethnic group in the southeastern portion of this country, which attempted to secede and form the nation of Biafra. Along with Niger, Cameroon, and Chad, this nation borders Lake Chad. For 10 points, name this most populous nation of Africa, with such cities as its capital, Abuja, and the port Lagos.

ANSWER: Federal Republic of Nigeria

064-10-22-01105

6. One solo by this man was immediately followed by the best-known solo of Jess Stacy and was played over a tom-tom accompaniment by Gene Krupa. In addition to Krupa, Teddy Wilson and Lionel Hampton were part of this man's namesake Quartet, one of the first integrated groups in jazz. This man's concert at Carnegie Hall culminated in the tune "Sing, Sing, Sing." For 10 points, name this "Patriarch of the Clarinet" and "King of Swing."

ANSWER: Benjamin David "Benny" Goodman

003-10-22-01106

7. This ruler sent Corbulo to conquer Armenia and sent Vespasian to defeat the first Judean revolt. His reign saw revolts led by Vindex, Galba, and the Icenii (aye-SEH-nee) tribe under the British queen Boudica (boo-DIK-uh). Piso led a conspiracy to kill this husband of Poppaea. This ruler murdered his mother Agrippina the Elder. In 64 CE, this successor of Claudius allegedly committed an act of arson. For 10 points, name this Roman Emperor who "fiddled while Rome burned."

ANSWER: **Nero** Claudius Caesar Augustus Germanicus [or **Nero** Claudius Drusus Germanicus; or **Lucius** Domitius Ahenobarbus]

079-10-22-01107

8. The title of one of these works translates to "Daredevils of Sassoun," while another tells the story of Nare Maghann Konate and is titled after his son Sundiata. Another example of this type of work includes narration by Vasco da Gama and was written by Luis Vaz de Camoes (cah-MOYZ), and is called *The Lusiads*. One of these works from Finland features Vainamoinen (VIE-nuh-MOY-nen) and is called the *Kalevala*. For 10 points, name this type of poem, examples of which include *Gilgamesh*, *Beowulf*, and Homer's *Odyssey*.

ANSWER: **epic** poems [or national **epics**]

081-10-22-01108

9. This man's illegitimate son was the last Loyalist governor of New Jersey. He founded the American Philosophical Society as well as the Union Fire Company, a volunteer fire department. He was appointed the first United States Postmaster General in 1775. This publisher of *Poor Richard's Almanack* was Pennsylvania's delegate at the Second Continental Congress. For 10 points, name this Founding Father who invented bifocals and the lightning rod.

ANSWER: Benjamin **Franklin**

024-10-22-01109

10. This ruler was in power during an uprising in the Kazan region known as Pugachev's Rebellion. This ruler led the coup against Peter III and was in power during all three partitions of Poland. One advisor to this ruler supposedly ordered the construction of fake villages to impress her during a national tour. This ruler was advised by Grigory Potemkin and embraced the writings of such men as Denis Diderot and Voltaire. For 10 points, name this enlightened empress of Russia.

ANSWER: **Catherine II** of Russia [or **Catherine the Great**; or **Yekaterina Alekseyevna**; or **Yekaterina Velikaya**; prompt on **Catherine**; prompt on **Yekaterina**]

064-10-22-01110

11. This quantity, at constant volume, is equal to the partial derivative of internal energy with respect to temperature. For a metal, it is equal to three times the gas constant, according to the Dulong-Petit (pet-EE) law. Heat can be written as mass times temperature times this quantity, which, for water, is about 4.18 joules per gram per Kelvin. For 10 points, name this quantity, which is typically denoted with a capital C, and is the amount of heat needed to raise a substance's temperature by one degree.

ANSWER: **specific heat** capacity [or specific **heat capacity**; or **molar heat capacity**; prompt on **C** before it is read]

064-10-22-01111

12. This thinker promoted a methodology which used four "ideal types." He defined the state as an entity which held a "monopoly on the legitimate use of violence" in his "Politics As A Vocation." This sociologist also claimed that economic growth in America and northern Europe was indebted to a Calvinist theology which promoted hard work and material gain. For 10 points, name this author of *The Protestant Ethic and the Spirit of Capitalism*.

ANSWER: Maximilian Carl Emil **Weber** (VAY-burr)

082-10-22-01112

13. This athlete is the subject of an essay by David Foster Wallace which describes watching him play as a "religious experience." With Stanislas Wawrinka, he won gold in the men's doubles at the 2008 Olympics. He has had a lengthy rivalry with Lleyton Hewitt, whom he defeated in the 2004 US Open. In 2007, he won three of the four Grand Slam tournaments, losing the French Open to another of his rivals, Rafael Nadal. For 10 points, name this Swiss tennis player.

ANSWER: Roger **Federer**

024-10-22-01113

14. This actor portrayed William of Baskerville in *The Name of the Rose*. He played Jimmy Malone, a police officer who works with Prohibition agent Eliot Ness, in *The Untouchables*. He also played John Mason, an escapee of Alcatraz prison, in *The Rock*. This actor played the leading role in *Never Say Never Say Again*, reprising a role he had earlier played in *Thunderball*, *Dr. No*, and *Goldfinger*. For 10 points, name this Scottish actor who played James Bond throughout the 1960s.

ANSWER: Sean **Connery**

064-10-22-01114

15. This man led a successful raid of New London at the Battle of Groton Heights. Although he performed well serving alongside Horatio Gates at the Battle of Saratoga, internal disputes led Gates to strip this man of his leadership post during the battle. Those disputes helped lead this man to collaborate with Major Andre in a failed plot to bring about the surrender of West Point. For 10 points, name this American commander of the Revolutionary War, whose name has become synonymous with "traitor."

ANSWER: Benedict **Arnold**

064-10-22-01115

1A. Which lake, containing Wizard Island and formed from the remnants of Mount Mazama, is the deepest lake in the United States?

ANSWER: **Crater Lake**

1B. Name the group of numbers that can be represented by scalar multiples of the square root of negative one and is symbolized by the letter "i."

ANSWER: **imaginary** numbers

2A. Name the town south of Jerusalem where the lines of Jesse and King David begin, which is also the birthplace of Jesus Christ.

ANSWER: **Bethlehem**

2B. Name the letter that is the SI prefix symbol for 10⁻¹² ("10 to the negative twelfth"), the symbol for momentum, and the symbol for the 15th element, phosphorus.

ANSWER: **p**

3A. This is a 10-second computation question. What is the surface area of a cube with side length 3?

ANSWER: **54** square units

3B. This is a 10-second computation question. What is the mean of the list 92.1, 44.4, 28, 144, 7?

ANSWER: **63.1**

4A. What quantity was first quantitatively measured by Ole Romer, is used to define the length of a meter, and is symbolized "c?"

ANSWER: **speed of light**

4B. Name the basic economic quantity, found in Hicksian and Walrasian types, that is downward-sloping on a graph with quantity on the x-axis and price on the y-axis.

ANSWER: **demand**

5A. This is a 20-second computation question. What is the period, in radians, of the function "sine of 2x times cosine of 0.25 x?"

ANSWER: **8 pi** radians

5B. This is a 20-second computation question. If a lottery jackpot is 75 million dollars and the chance of winning the jackpot is 1 in five billion, what is the expected winnings of a given ticket? Assume the ticket is free and there are no other prizes.

ANSWER: **0.015 dollars** [or **1.5 cents**]

6A. What Middle-Eastern country controversially won the bid to host the 2022 FIFA World Cup?

ANSWER: State of **Qatar** [or Dawlat **Qatar**]

6B. Name the data structure which has a "priority" variety and takes out objects in the order they were received.

ANSWER: **queue** ("Q")

7A. This is a 30-second computation question. Find the real root of $x^5 + 2x^4 + x^3 + x^2 + 2x + 1$.

ANSWER: $x = -1$

7B. This is a 30-second computation question. Find the positive real root of $x^5 + 2x^2 - 4x - 4$.

ANSWER: $x =$ square **root** of **2**

8A. In Spanish, which past tense is used to convey a completed action, in contrast to the imperfect?

ANSWER: **preterite** [or **pretérito**]

8B. What author penned *Heart of a Dog* and also wrote about the Devil's visit to Soviet-era Moscow in his *The Master and Margarita*?

ANSWER: Mikhail **Bulgakov**

9A. What member of the Hudson River School painted a smoke-producing volcano in *Cotapaxi* and a waterfall in the jungle in *Heart of the Andes*?

ANSWER: Frederic Edwin **Church**

9B. Which country saw Juan Bosch elected in 1963 after 25 years of dictatorship rule by Rafael Trujillo?

ANSWER: **Dominican Republic** [or **República Dominicana**]

10A. What quantity can be interpreted as the measure of an object's resistance to changes in rotation or the rotational analog of mass?

ANSWER: mass **moment of inertia** [or **rotational inertia**]

10B. What animal is the subject of a 1936 essay by George Orwell in which that animal is shot by a police officer in Burma?

ANSWER: **elephant**

1. This quantity's SI unit is found using the von Klitzing constant of the quantum Hall effect. In high-frequency AC circuits, this quantity is increased via the skin effect. It is inversely proportional to the cross-sectional area of its namesake component. Values of it add directly when its namesake components are arranged in series. It equals voltage divided by current, according to Ohm's Law. For 10 points, name this measure of an object's opposition to electrical current.

ANSWER: electrical **resistance** [or **resistor**s; do not accept or prompt on "resistivity"]

079-10-22-01117

2. A series of this city's Victorian houses were the first designated "Painted Ladies." A rotunda, lagoon, and colonnade comprise this city's Palace of Fine Arts, built for the 1915 Panama-Pacific Exposition. This city's tallest building is the glass pyramid-topped Transamerica Tower, and its Lombard Street contains a steep section with many hairpin turns. Another landmark in this city was the largest suspension bridge from 1937 to 1964 and is painted orange. For 10 points, name this site of the Golden Gate Bridge.

ANSWER: **San Francisco**

015-10-22-01118

3. One of these figures, Phoebe, was the mother of Leto. One of them named Mnemosyne (neh-MAZ-uh-nee) was the personification of memory and the mother of Clio, Calliope, and the other Muses. One of them named Oceanus was the father of three thousand namesake children. Tethys and Iapetus (YAHP-eh-tus) were other examples of these figures, one of whom was chained to a rock where an eagle ate his liver. For 10 points, Prometheus, Cronus, and Rhea are examples of what giant deities who fought with the Olympians?

ANSWER: **Titans**

015-10-22-01119

4. This man was given a namesake "Land Grant" near Tallahassee during an 1824 to 1825 grand tour of the United States. He earned the nickname "the Hero of Two Worlds" partially because of his minimal losses during a retreat from Barren Hill. This man was instrumental in trapping Cornwallis at Yorktown after being wounded at Brandywine and securing a six thousand man expeditionary force from France. For 10 points, name this French marquis who aided the Americans in the Revolutionary War.

ANSWER: Marie Joseph Paul Yves Roch Gilbert du Motier, marquis de **Lafayette**

015-10-22-01120

5. This molecule directly inhibits pyruvate kinase. It can be converted into a molecule which is used in signal transduction, a second messenger known as cyclic AMP. It is generated by oxidative phosphorylation (FOS-for-ih-LAY-shun) in the electron transport chain using its namesake synthase. Theoretically, one glucose produces 36 of these molecules during cellular respiration. For 10 points, name this energy-carrying molecule which contains three phosphate groups.

ANSWER: **ATP** [or **adenosine triphosphate**]

024-10-22-01121

6. At a dinner party in this novel, the protagonist produces two flowers he obtained while walking towards the Palace of Green Porcelain. Earlier, the protagonist believes that the title object is hidden in a statue of a sphinx by a race of ape-like creatures that live underground. Those creatures, the Morlocks, are contrasted with Weena and the rest of the Eloi in this novel, which begins with a discussion of the fourth dimension. For 10 points, name this novel by H.G. Wells, in which the protagonist travels to the future.

ANSWER: *The* **Time Machine**

083-10-22-01122

7. Like Rachmaninoff, he used the twenty-fourth caprice for his *Variations on a Theme of Paganini*. He used the drinking song "Gaudeamus Igitur" (GOW-day-ey-mus EE-gih-tour) as the basis for a work written upon receiving an honorary degree from Breslau, his *Academic Festival Overture*. This longtime friend of Clara Schumann composed a *German Requiem* seven years before premiering a symphony nicknamed "Beethoven's Tenth." For 10 points, name this German composer, who also wrote a notable lullaby.

ANSWER: Johannes **Brahms**

003-10-22-01123

8. In this battle, the Confederates on Corinth Road hoped to force the Union enemy into a swamp called Owl Creek. The Union lost the Sunken Road after Benjain Prentiss was unable to hold the Hornet's Nest, but the Confederates retreated after Buell came with Union reinforcements. Albert Sidney Johnston was killed during this battle, sometimes called Pittsburg Landing. The victorious general Ulysses S. Grant followed the Confederates to Vicksburg. For 10 points, name this Civil War battle fought in Tennessee.

ANSWER: Battle of **Shiloh** [or Battle of **Pittsburg Landing** before it is read]

079-10-22-01124

9. This artist sings "I hope you hang yourself with your H&M scarf" in a controversial song about an ex-boyfriend. She tells the addressee to "own the night like the Fourth of July" in the third single from her most recent album, "Firework." That album also includes a song about "a place where the grass is really greener," featuring Snoop Dogg and celebrating girls who are "unforgettable" and "undeniable." For 10 points, name this singer of "I Kissed a Girl" and "California Gurls."

ANSWER: Katy **Perry** [or Katheryn Elizabeth **Hudson**]

024-10-22-01125

10. One form of this procedure is used to find trace amounts of moisture in a sample and is named for Karl Fischer. EDTA is often used in the complexometric form of this procedure. This procedure's namesake curve can be used to determine the acid dissociation constant. In the acid-base type of this procedure, indicators such as methyl orange are used to find the equivalence point. For 10 points, name this procedure which is used to find the concentration of a reagent.

ANSWER: **titration** [or **volumetric analysis**]

024-10-22-01126

11. This author wrote a play whose main character decides to allow a ship called *The Indian Girl* to go to sea, despite its unseaworthiness. In addition to *The Pillars of Society*, he wrote a play whose title character is Halvard Solness, *The Master Builder*. He is better known for a play in which Hedvig commits suicide rather than kill the title bird, and one in which Nora leaves her husband Torvald. For 10 points, name this Norwegian playwright of *The Wild Duck* and *A Doll's House*.

ANSWER: Henrik **Ibsen**

024-10-22-01127

12. The Mayaguez incident occurred during the presidency of this man, who developed an economic policy called "whip inflation now." Before serving under Bush, Donald Rumsfeld served as Chief of Staff and Secretary of Defense under this man. Vietnam was completely taken over by the North during his presidency. For 10 points, name this man who became Vice President following the resignation of Spiro Agnew and granted a pardon to his predecessor Richard Nixon.

ANSWER: Gerald Rudolph **Ford** [or Leslie Lynch **King**]

064-10-22-01128

13. This quantity is the intensive variable added to internal energy when calculating enthalpy. Fugacity gives a real-world representation of this quantity, which is divided by density in the incompressible equation of Bernoulli's Principle. It is directly proportional to temperature by Gay-Lussac's Law. Measured in pascals, it is, according to Boyle's Law, inversely proportional to volume. For 10 points, name this force per unit area whose atmospheric type is measured by a barometer.

ANSWER: **pressure**

079-10-22-01129

14. This figure killed a centaur who tricked his wife into giving him a supposed love potion which was actually poison. His last wife was Hebe, whom he married after his apotheosis. His feats include strangling two snakes sent by Hera to kill him, and capturing a deer sacred to Artemis. As penance for killing his children and his wife Megara, he became the slave of Eurystheus (yur-ISS-thee-us), who tasked him with capturing Cerberus and killing the Nemean lion. For 10 points, name this hero who performed twelve labors.

ANSWER: **Heracles** [or **Hercules** before "Artemis" is read; do not accept "Hercules" after "Artemis" is read]

024-10-22-01130

15. This novel's third chapter concerns a turtle which is flipped over while crossing a highway. In this novel, Rose of Sharon gives her milk to a starving man and the Christ figure Jim Casy is killed while agitating for better conditions for migrant workers. The central family of this novel includes the dimwitted Noah and the ex-convict Tom. For 10 points, name this Depression era novel about the Joad family's travels from Oklahoma to California, a work of John Steinbeck.

ANSWER: *The **Grapes of Wrath***

015-10-22-01131

1. This substance is divided by the USDA into orders such as mollisol and entisol. Created via pedogenesis, this substance has layers described by the sequence O-A-B-C-R that are called horizons. Greater-than-average amounts of humus (HYOO-muhs) are found in one type of it called loam. Its texture is determined by how much silt, sand, and clay it contains. For 10 points, name this collection of organic materials and broken rock in which you might pot a plant.

ANSWER: soil [or earth; or dirt]

079-10-22-01132

2. The main characters of this short story contemplate changing the card in the vestibule from reading “Dillinger” to simply “D.” Madame Sofronie gives one of the main characters twenty dollars. That character then buys a chain for her husband’s golden watch, and later receives a set of tortoise shell combs. Ironically, those items were purchased with the money obtained after Jim sold his watch and Della sold her long hair. For 10 points, name this short story by O. Henry.

ANSWER: “The Gift of the Magi”

083-10-22-01133

3. The protagonist of this novel fantasizes about Gerty McDowell, and maintains a correspondence with Martha Clifford using the pseudonym of Henry Flower. One character in this novel asks for the key to a Martello tower. That character is Buck Mulligan, the roommate of Stephen Dedalus. It ends with a stream-of-consciousness soliloquy by Molly, the wife of Leopold Bloom, who wanders around Dublin. For 10 points, name this novel by James Joyce whose structure is based on *The Odyssey*.

ANSWER: Ulysses

024-10-22-01134

4. One work described by this alliterative term begins with the main character visiting the Ambassador Theater on the eve of the March on the Pentagon. In addition to Norman Mailer’s *The Armies of the Night*, this term describes a work whose author learns about Perry Smith and Dick Hickock’s murder of the Clutter family of Kansas. That work is Truman Capote’s *In Cold Blood*. For 10 points, name this genre of books whose authors use the techniques of fiction and journalism to depict real-life events.

ANSWER: nonfiction novels [prompt on nonfiction; prompt on literary journalism; do not accept “historical fiction”]

079-10-22-01135

5. In one step of this process, the enzyme succinate (SOOK-sih-nate) dehydrogenase catalyzes the reaction of succinate to fumarate. The buildup to this process involves the conversion of pyruvate to acetyl (aa-SEE-til) coenzyme A; the acetyl coenzyme A is involved in a series of steps which sees the regeneration of oxaloacetate (OX-al-oh-AA-see-tate) and the synthesis of two equivalents of carbon dioxide. For 10 points, name this metabolic process, sometimes referred to as the citric acid cycle.

ANSWER: Svent-Gyorgyi-Krebs cycle [or tricarboxylic acid cycle; or citric acid cycle before it is read]

064-10-22-01136

This is a calculation question. What are the non-ninety degree angles of a right triangle with sides of length 2, 2 times square root of 3 and 4?

ANSWER: 30 degrees and 60 degrees [or pi/6 radians and pi/3 radians]

064-10-22-01137

What dramatic device is a quick comment by a character, for the benefit of the audience, which the other characters on stage are understood not to hear?

ANSWER: **aside**

064-10-22-01137