

1. This city's upscale areas include Abu Nuwas Street and the Al-Mansur district. In the Middle Ages, this city was the home to the House of Wisdom, a major center of translation and science. This former capital of the Abassid Empire is divided in two by the Tigris River. Its current neighborhoods include the fortified Green Zone and a large slum known as Sadr City. For 10 points, name this former seat of power for Saddam Hussein, which remains the capital of Iraq.

ANSWER: Baghdad

019-09-7-05101

2. This man is the only three-term governor in California history, and he was Thomas Dewey's running mate in the 1948 Presidential election. Dwight Eisenhower referred to this man's appointment as his "biggest...fool mistake." This man chaired the committee that investigated the assassination of John F. Kennedy, while serving from 1953 to 1969 as Supreme Court Chief Justice. For 10 points, name this man, whose court issued landmark rulings such as *Miranda v. Arizona*.

ANSWER: Earl Warren

003-09-7-05102

3. One type of this construct can be used to determine the linear independence of a set of differentiable functions. That is the Wronskian (RON-ski-un) type of this function. The value of this is set to zero in order to solve the eigenvalue (EYE-gen-val-yoo) problem. A matrix is invertible if and only if this function of the matrix is nonzero. For 10 points, identify this function defined only for square matrices, which for a two-by-two matrix a, b, c, d is equal to a d minus b c.

ANSWER: determinants

029-09-7-05103

4. One queen from this family is believed to have ordered the Huguenot Gaspard de Coligny's (gahs-PARD day co-LIN-yeez) assassination. One Pope from this family refused to annul Henry VIII's first marriage. A woman from this family is blamed for the St. Bartholomew's Day massacre. A different Pope from this family was in power when Martin Luther began the Reformation. Savonarola was a monk who gained control of a city from this family. For 10 points, name this family that produced Clement VII, Leo X, and Lorenzo the Magnificent, and ruled Florence.

ANSWER: de Medicis

027-09-7-05104

5. This layer's strongest part contains cataclasite breccias and is called the brittle-ductile transition zone. Over three-quarters of one part of this layer of the earth is silicon and aluminum oxide. This layer is separated from the one below it by the Moho discontinuity, and it is one component of the lithosphere. Directly below this layer, convection in the asthenosphere breaks it up into tectonic plates. For 10 points, name this outermost layer of the Earth, that sits on top of the mantle.

ANSWER: the crust

022-09-7-05105

6. The pro-trade Walker Tariff was passed during the term of this President, who was asked to demonstrate the location of spilled blood by Abraham Lincoln's Spot Resolutions. After this man's ambassador John Slidell failed to negotiate a purchase, this President sent the army across the Nueces (new-EY-seys) to initiate a war. During his term, the U.S. annexed Texas and gained the Oregon Territory. For 10 points, name this dark horse President who fought with Mexico.

ANSWER: James Knox Polk

020-09-7-05106

7. This man composed a set of pieces depicting a gnome running on crooked legs and French women arguing at the "Market at Limoges." Ravel orchestrated this man's "Promenade" theme from that work, which includes "The Great Gate of Kiev." Another of this man's pieces includes an "Assembly of Witches" section and takes place on St. John's Night. For 10 points, name this member of the Russian Five, who composed *Pictures at an Exhibition* and *Night on Bald Mountain*.

ANSWER: Modest Petrovich **Mussorgsky**

030-09-7-05107

8. This modern definition of these groups was proposed by Ernst Mayr, who advocated the use of a "biological concept" of it. A "keystone" group of this type, such as *Pisaster*, is an indicator of the effect of pollution. Theodosius Dobzhansky (dobe-ZAN-ski) gave a genetic explanation for the creation of these divisions, focusing on how they are created by reproductive isolation. The process by which these groups form can be allopatric, sympatric, or peripatric. For 10 points, binomial nomenclature consists of genus along with what other taxonomic rank?

ANSWER: **species**

026-09-7-05108

9. The two primary forms of this religion are known as Rada and Petro. Its ceremonies include the kanzo and the taking of the ason, the latter of which involves ascending to the priesthood as either a mambo or a houngan (HOON-gahn). This religion reveres the crossroads as the intersection between the earthly and spirit worlds, and venerates Iwa (LO-uh) such as Ogoun (OH-"goon") and Legba. In this religion, nasty Iwa (LO-uh) can create zombies. For 10 points, name this religion, most popularly practiced in Haiti.

ANSWER: **voodoo** [or **voudon**]

003-09-7-05109

10. This author wrote, "Perfection is terrible, it cannot have children," in a poem that discusses pregnancy. Philomena Guinea provides financial support for the protagonist of this writer's only novel, in which a girl obsessed with the Rosenbergs undergoes psychiatric treatment with Dr. Nolan. This author of the poem "The Munich Mannequins" also wrote about "you do not do, you do not do" to open a poem about a man "with a Meinkampf look." For 10 points, name this American author who wrote the poem "Daddy" and the novel *The Bell Jar*.

ANSWER: Sylvia **Plath**

036-09-7-05110

11. The "turmoil" following this election was cited by Theodore Olson in his oral arguments in *Bush v. Gore*. During this election, the Illinois state legislature elected Supreme Court Justice David Davis to the Senate; Joseph Bradley, a Republican, took Davis's place on the fifteen-member commission that decided which candidate would get this election's disputed votes from South Carolina, Louisiana, Oregon, and Florida. For 10 points, name this election in which Samuel Tilden lost to the so-called "Rutherfraud B. Hayes."

ANSWER: Presidential Election of **1876**

003-09-7-05111

12. The approximation for the period of these objects must include an infinite expansion when dealing the large amplitude variety of this object. Chaotic systems can be displayed by setting a large one of these into motion. The period of the simple type of this object equals two pi times the square root of its length over gravity. One type of this object is used to show the rotation of the earth and is named for Foucault (foo-KOH). For 10 points, name this physical object often demonstrated using a swinging mass suspended by a string.

ANSWER: **pendulum**s [or large amplitude **pendulum**s; or double **pendulum**s; or simple **pendulum**s; or Foucault **pendulum**s]

023-09-7-05112

13. One of this artist's paintings shows three older women, one holding a teacup, in front of Emanuel Leutze's (LOYT-zuh's) *Washington Crossing the Delaware*. Another of his paintings depicts a man pushing back a red curtain to reveal Washington chopping down a cherry tree. This artist used his sister and dentist as models for another painting whose background shows a white house with a cathedral-like upper window. For 10 points, name this Iowa painter, who depicted a pitchfork-wielding farmer in *American Gothic*.

ANSWER: Grant DeVolson **Wood**

026-09-7-05113

14. This author created a woman who wears a brooch that says "Love conquers all" named Madame Eglentyne. He wrote about a dream of the Black Knight, representing John of Gaunt, titled *The Book of the Duchess*. This author wrote about Alison's courting by Absalom in a story told by the Miller and about pilgrims going to the shrine of Thomas Becket who meet at the Tabard Inn. Palomon and Arcite are the main characters in his "The Knight's Tale." For 10 points, name this author of *The Canterbury Tales*.

ANSWER: Geoffrey **Chaucer**

027-09-7-05114

15. This man created a confederation of Greek states called the Panhellenion. A cult dedicated to his young companion Antinous (AN-tin-ooce) arose after the youth's death. This emperor saw to the completion of a massive temple of Zeus begun centuries earlier, the Pantheon, after which he assumed the title Olympius. He put down the Bar Kokhba (bar COKE-buh) revolt in Judea after succeeding Trajan as emperor. For 10 points, name this Roman emperor who built a namesake wall in Northern Britain.

ANSWER: **Hadrian** [or **Adrian**; or Caesar Traianus **Hadrianus** Augustus; or Publius Aelius **Hadrianus**]

030-09-7-05115

1A. What city on the Sava River is the capital of Croatia?

ANSWER: Zagreb

1B. Name the French anthropologist who wrote *The Savage Mind* and pioneered structuralism in anthropology.

ANSWER: Claude Lévi-Strauss

2A. Name the Jane Austen novel that details the relationship between Anne Elliot and Frederick Wentworth.

ANSWER: Persuasion

2B. What Rockbridge County, Virginia native invented an automatic reaper that was said to "move the line of civilization westward by thirty miles a year?"

ANSWER: Cyrus Hall McCormick Sr.

3A. The preterite (PREH-tur-it) and imperfect are the two most common tenses used in Spanish to express what temporal relationship?

ANSWER: past tense

3B. Name the baseball franchise that signed Randy Wolf in the 2009 offseason to bolster a team that already features Yovani Gallardo (guy-YARD-oh) and Ryan Braun.

ANSWER: Milwaukee Brewers [or Milwaukee Brewers]

4A. This is a 10-second calculation question. Solve the equation $4x + 3 = 9x - 1$.

ANSWER: 4/5

4B. This is a 10-second calculation question. Divide 16.146 by 2.07.

ANSWER: 7.8

5A. Name the literary device in which a word or sequence of words is repeated at the beginning of multiple consecutive lines of poetry.

ANSWER: anaphora

5B. This substance is in the red blood cells of about eight-five percent of humans, and can cause a dangerous immune response if the blood is transfused to a person without this substance. Identify this protein which is named for its original discovery in a type of monkey.

ANSWER: Rh factor

6A. This is a 20-second calculation question. Solve the equation $x^2 - 11x = -30$.

ANSWER: $x =$ 5, 6 [both answers required]

6B. This is a 20-second calculation question. Find the radius of the sphere whose volume is six times its surface area.

ANSWER: **18**

7A. Name the law of thermodynamics that states that the entropy of the universe is always increasing.

ANSWER: the **Second** Law of Thermodynamics [or **two** or other specifications of the **second** law]

7B. Name the Harvard legal philosopher who is on leave to work in the Office of Information and Regulatory Affairs in the Obama administration.

ANSWER: Cass R. **Sunstein**

8A. Name the principle proposed by Nicolas Steno which states that older layers of sedimentary rock are found below younger ones.

ANSWER: law/principle of **superposition**

8B. Identify the novelist who created Dracula.

ANSWER: Abraham "Bram" **Stoker**

9A. This is a 30-second calculation question. What is the sample standard deviation of the numbers 5,3,3,2,1,8,6? Note that this is not the same as the population standard deviation. You do not need to simplify the radical.

ANSWER: **square root of 6**

9B. This is a 30-second calculation question. What is sixteen choose three times 3.5?

ANSWER: **1971.2**

10A. Name the rap singer who claims to want the money, cars, and clothes in "Successful" and also crooned "baby you my everything" in "Best I Ever Had."

ANSWER: **Drake** [or Aubrey **Graham**]

10B. *The Creation of Adam*, *The Great Flood*, and *The Last Judgment* are among the frescoes that were painted in the early sixteenth century in what building?

ANSWER: the **Sistine Chapel**

1. This value for a substance can be obtained using the Baumé scale or a hydrometer. For an ideal gas, it is equal to the ratio of the product of molar mass and pressure to the gas constant times temperature. It is symbolized by rho. Among the natural elements, osmium and iridium have the highest value of this. The difference in this between ice and water is why ice floats. For 10 points, name this ratio of mass to density, which, for water, is about one gram per milliliter.

ANSWER: density [or specific gravity]

001-09-7-05117

2. This composer used triplets of an arpeggiated C-sharp minor chord to open his “Sonata Quasi una Fantasia.” He composed a five movement symphony depicting a peasant reunion and a thunderstorm. He wrote a symphony that uses a repeated motif of G-G-G-E flat. He depicted “fate knocking at the door” in one symphony, and set Schiller’s poem “Ode to Joy” in another. This composer wrote the “Moonlight” sonata, as well as a fifth symphony in C minor, the “Pastoral” symphony, and the “Choral” symphony, his ninth. For 10 points, name this deaf composer.

ANSWER: Ludwig van Beethoven

027-09-7-05118

3. In a memoir of his imprisonment, this man described hearing the voices of the revolutionary Victor Banjo and his grandfather Adekunle Fajuyi (AH-day-KUN-lay fah-JOO-ye). That memoir is *The Man Died*. This man also wrote a play in which Elesin Oba strangles himself after seeing his dead son Olunde. That play is *Death and the King’s Horseman*. A play by this man set in Ilujinle (EE-loo-JIN-lay) sees Bale (BAH-lay) win the hand of Sidi. For 10 points, name this Nigerian playwright of *The Lion and the Jewel*.

ANSWER: Akinwande Oluwole Soyinka

030-09-7-05119

4. This system includes a protein whose great variety is guaranteed by V(D)J recombination. Those proteins are synthesized by cells of this system that have receptors IL-7 and CD19 and come in major forms like "plasma" and "memory." This system includes mast cells and granulocytes (GRAN-yoo-low-sites) that stain a characteristic brick-red, called eosinophils (ee-oh-SIN-uh-filz). Many cells of this system are transported through the lymph, and this system's cells include macrophages (MAK-row-fay-jez), as well as several types of B cells. For 10 points, name this system that contains white blood cells.

ANSWER: immune system [accept equivalents]

022-09-7-05120

5. The gradual end of slavery in this country was declared in the Law of the Free Womb. Soon afterwards, the Golden Law entirely ended slavery here. One president of this country committed suicide after implementing the "Estado Novo" and was named Getúlio Vargas (zhe-TOO-lee-oh VAHR-gahs). This country's first emperor was the expatriate Pedro I. For 10 points, name this country, that was discovered by Pedro Cabral for Portugal, and is the largest country in South America.

ANSWER: Federative Republic of Brazil [or Republica Federativa do Brasil]

023-09-7-05121

6. This woman was given flowers by the Horae (HOR-eye), gold necklaces by the Charities, and the ability to weave and sew by Athena. Her only child was a survivor of the catastrophic Flood named Phyrria (PEER-uh). This wife of Epimethius committed a notorious action that was conceived by Zeus as a punishment to mankind for accepting fire from Prometheus. That action left hope, even as the spirits of evil filled the world. For 10 points, identify this woman in Greek mythology, who removed the lid of a namesake "box."

ANSWER: **Pandora**

019-09-7-05122

7. In one story by this author, Azalea Adair is protected from her abusive husband by Uncle Caesar, an African-American carriage driver. That story by this man is "A Municipal Report." This author wrote a collection in response to Ward McAllister's claim that only four hundred people in New York City were worth noticing called *The Four Million*. He also wrote a story about Bill Driscoll and Sam Howard's kidnapping of an incorrigible child. For 10 points, name this American author of "The Gift of the Magi" and "The Ransom of Red Chief."

ANSWER: O. **Henry** [or William Sidney **Porter**]

030-09-7-05123

8. This person told a Fox News reporter that a certain campaign, which she would later become a paid spokeswoman for, was "not realistic at all." In December 2009, she filed a motion for sole custody of her son. Her ex-fiancé recently insisted on making that custody suit public, citing fears of this woman's mother. This woman ended her engagement to Levi Johnston shortly after the birth of the couple's son son Tripp. For 10 points, identify this eldest daughter of the former Governor of Alaska.

ANSWER: **Bristol Palin** [prompt on **Palin**; do not accept or prompt on "Sarah Palin"]

002-09-7-05124

9. A scar on this man's thigh from a wound suffered during a boar hunt leads his servant and childhood nurse Euryclea (you-RIH-klee-uh) to recognize him. Sacrifices of the sacred cattle of Helios led to a disaster, of which this man was the only survivor. He pretended to be named "no man" in order to blind the Cyclops Polyphemus (pall-uh-FEE-mus). This man's dog Argos died upon seeing him return from Troy after ten years to defeat his wife Penelope's suitors. For 10 points, name this king of Ithaca and hero of a namesake epic.

ANSWER: **Odysseus** [or **Ulysses**; or **Ulixes**]

032-09-7-05125

10. A revolt in favor of this man's half-brother Ivan V led this man to disband his country's largest military unit, the streltsy. This man led one side in a war that saw battles at Narva and Poltava. That war pitted him against Sweden and Charles XII and was called the Great Northern War. This ruler forced the boyars of his country to wear new clothes and shave their beards. For 10 points, name this man who built a "window to the west" in the city of St. Petersburg, and who greatly westernized Russia around the turn of the eighteenth century.

ANSWER: **Peter I** [or **Peter the Great**; or **Pyotr Veliky**; prompt on **Peter**]

023-09-7-05126

11. The singer of this song states, "life starts when the church ends." This song wishes that Bob Marley rests in peace, and the singer states he is "up at Bed-Stuy." This song is used as Derek Jeter's walkup music. The singer claims he is the "new Sinatra." Its title location is a "concrete jungle where dreams are made of." For 10 points, name this Jay-Z song featuring Alicia Keys with a chorus that states, "Let's hear it for New York."

ANSWER: **Empire State of Mind**

030-09-7-05127

12. A character in this novel goes to London to get a haircut, earning the ire of another character, who condemns the protagonist for scolding Miss Bates. This novel sees a woman from Bath marry Mr. Elton after he is rejected by the protagonist. Its protagonist tries to set up her best friend with Frank Churchill, who is secretly engaged to Jane Fairfax. This novel's protagonist, a friend of Harriet Smith, marries Mr. Knightley. For 10 points, name this novel about the matchmaking antics of the titular Miss Woodhouse, a work by Jane Austen.

ANSWER: Emma

058-09-7-05128

13. Software that create and maintain these things should ideally follow the ACID ("acid") paradigm. They are often implemented using B-plus trees; a simple implementation of one of them is a flat file. Different models of them include hierarchical and relational. They are often structured into tables, rows, and columns, which can be manipulated by languages such as SQL. For 10 points, name these organized collections of information, which are manipulated by programs such as Oracle and Microsoft Access.

ANSWER: database [or DBMS]

001-09-7-05129

14. This author created Rotpeter, a former circus ape who learns to talk, in "A Report to an Academy." Frieda's fiancée K is not able to take his job as a surveyor in this man's novel *The Castle*. Another protagonist of a work by this man is killed in a quarry for an unknown crime in *The Trial*. In one story by this author, a man who was trying to raise money to send his sister to the conservatory has apples thrown at him. For 10 points, name this author, who described Gregor Samsa's transformation into a bug in "The Metamorphosis."

ANSWER: Franz Kafka

019-09-7-05130

15. One ruler with this last name was assassinated by Operation Blue Star after advising Fakhruddin Ali Ahmed to declare a state of emergency. Another leader with this last name encouraged people to create khadi, or homespun clothing, and led a march to Dandi to protest a tax on salt. For 10 points, identify this surname shared by Indian Prime Minister Indira, and Mohandas, whose non-violent protests earned him the nickname "Mahatma."

ANSWER: Gandhi

004-09-7-05131

1. An important protein in these objects' membrane is glycoporphin. Those of camels are oddly shaped. Immature ones are called reticulocytes (reh-TICK-yoo-low-sites), and mature ones are called erythrocytes (uh-RITH-row-sites). Diseases that are manifested in these cells include HDN, thalassemia (thal-aa-SEE-mee-uh), and sickle cell anemia. In mammals, they do not have a nucleus, and they contain large quantities of hemoglobin. For 10 points, name these cells that transport oxygen throughout the body.
ANSWER: **red blood cells** [or **RBCs**; accept _erythrocytes before it is read]

001-09-7-05132

2. The first chapter of this book is entitled "A Fable for Tomorrow" and tells of a harmonious town suddenly hit with a "strange blight." A parody of this book is "The Desolate Year," which imagined a world where insects ran amok. That parody of this work was produced by the Monsanto Corporation, which, along with other companies, objected to this book's criticism of the pesticide DDT. For 10 points, name this landmark environmentalist book, written by Rachel Carson.

ANSWER: **Silent Spring**

052-09-7-05133

3. One of this man's novels discusses how only Edward Griffith realizes that Mr. Gray is John Paul Jones. This man created a character who settles down in Templeton with his blood-brother John. This author of *The Pilot* wrote about a man who encounters Judith and Hetty Hutter near Lake Glimmerglass. That character created by this author also rescues Cora and Alice Munro along with his friend Chingachgook. For 10 points, name this man who created Natty Bumppo in his novels *The Deerslayer* and *The Last of the Mohicans*.

ANSWER: James Fenimore **Cooper**

026-09-7-05134

4. This god threw himself onto a funeral pyre and then became the planet Venus. He mixed the bones from the previous four worlds with his own blood to create humanity. The twin brother of this god is a dog-faced lightning deity named Xolotl (SHO-lot-el). This god was once exiled by the "smoking mirror" Tezcatlipoca (TEZ-kat-lee-poe-kah). Because this god had light skin and a light beard, believers made the grave mistake of confusing this feathered serpent with Hernan Cortes (cor-TEZ). For 10 points, name this chief deity of the Aztecs.

ANSWER: **Quetzalcoatl** (ket-ZAL-co-ahh-tl)

004-09-7-05135

5. In light atoms, the spin and orbital types of this quantity are coupled by Russell-Saunders coupling. Clebsch-Gordan coefficients are used in the addition of this quantity. According to Noether's [NUH-ters] theorem, this quantity is conserved in rotationally invariant systems. The time derivative of this quantity is equal to torque. For 10 points, name this quantity that is symbolized L and is the rotational analogue of linear momentum.

ANSWER: **angular momentum** [do not accept or prompt on "momentum"]

024-09-7-05136