

1. The first proof that this number is irrational is believed to have been produced by Hippasus, a student of Pythagoras, but it was thrown overboard by the Pythagoreans. Also known as Pythagoras' constant, it is the geometric mean of one-half and four. It is also equal to the secant of forty-five degrees, which means it is the length of the hypotenuse of a right triangle whose two legs each measure one unit. For 10 points, identify this number, approximately equal to 1.414, and the only solution to the equation " x squared minus two equals zero."

ANSWER: **square root of 2** [or **radical 2**]

025-09-1-15101

2. ?In a memoir, this author writes of forgetting the lines of an Easter poem and her Uncle Willie's encounter with the Ku Klux Klan. That memoir ends with this author at age sixteen, in San Francisco, giving birth to her son Guy. This author also writes that she stopped speaking after her reporting of a rape led to Mr. Freeman's fatal beating and her own return to Stamps, Arkansas. For 10 points, name this author, who read her poem "On the Pulse of Morning" at Bill Clinton's inauguration, and wrote the autobiography *I Know Why the Caged Bird Sings*.

ANSWER: Maya **Angelou** [or Marguerite **Johnson**]

019-09-1-15102

3. Along with magnesium, a member of this group of elements is found in Grignard reagents. One of these elements is frequently used to detect starch, in the presence of which that element turns dark blue. This group also contains the last naturally occurring element to be discovered. That element is the only one of the group to not naturally occur in diatomic form. For 10 points, give the name for group seventeen elements, which include astatine, iodine, and chlorine.

ANSWER: **halogens** [or Group **17** before mentioned; or Group **7a**]

022-09-1-15103

4. This politician was in power when the Beveridge Report was published, and his loss in the following election allowed for the creation of the National Health Service. This leader came up with the plan for the failed invasion at Gallipoli, and he was also responsible for choosing to fire bomb Dresden. This man traveled on the HMS *Prince of Wales* before agreeing to the Atlantic Charter. For 10 points, name this man who served twice in the role of British Prime Minister, with his first time occurring during World War II.

ANSWER: Winston Leonard Spencer **Churchill**

023-09-1-15104

5. One character in this novel cries after the horse Frou-Frou breaks its back during a race against Gladiator. One scene in this novel sees the forceful eviction of Veslovsk. In another, the wife of the philandering Stiva encourages the match between the shy Konstantin Levin and Kitty. This novel opens with the line "Happy families are all alike" and sees the title character abandon her family, despite an "evil omen," for the horseman Vronsky. For 10 points, name this novel whose protagonist commits suicide by jumping in front of a train, written by Leo Tolstoy.

ANSWER: **Anna Karenina**

032-09-1-15105

6. Free-particle solutions to the Schrodinger equation are eigenstates of this quantity's namesake operator. For massless objects, this quantity is equal to the energy over the speed of light. The change in this quantity is known as impulse, and it is conserved in both inelastic and elastic collisions. The original formulation of Newton's Second Law states that its first derivative is equal to force. For 10 points, identify this product of mass and velocity, denoted p .

ANSWER: linear **momentum**

022-09-1-15106

7. In Islamic tradition, this man convinced God to lessen the number of required daily prayers from fifty to five. This man died on Mount Nebo after tending the flocks of Jethro and marrying Zipporah. This man's brother had a staff that turned into a snake and ordered the construction of the Golden Calf. This man's sister Miriam floated him down the Nile in a basket, well before he encountered the burning bush. For 10 points, name this man who retrieved the Ten Commandments after freeing the Hebrews from Egypt and leading them through the desert.

ANSWER: **Moses** [or **Musa**]

015-09-1-15107

8. One man who performed this action claimed he was "a Stalwart of the Stalwarts" after committing this act in the Baltimore and Potomac Railroad Station. Another performer of this action received medical assistance from Samuel Mudd and interrupted a performance of *Our American Cousin*. One performance of this action led to the creation of the Warren Commission. For 10 points, name this action most recently committed from a book depository in Dallas, which made famous such men as Charles Guiteau, John Wilkes Booth, and Lee Harvey Oswald.

ANSWER: presidential **assassinations** [or presidential **assassins**; or equivalents; or **assassinating** James A. Garfield before "Samuel Mudd"]

023-09-1-15108

9. One composer died working in this country after conducting his *Te Deum* led to him smashing his foot with a stick. A native of this country depicted a train in his composition *Pacific 231* and was a member of the group "The Six." Another native of this country, who mentored The Six, wrote *Three Gymnopedies*. For 10 points, name this home country of Jean-Baptiste Lully, Arthur Honegger, and Erik Satie.

ANSWER: **France**

027-09-1-15109

10. One character in this work runs to a stream to wash away a kiss from her father; that character also refuses to recite the catechism to Governor Bellingham. Another character in this work, who claims to have spent a year living with Indians, appears shortly after the preface titled "The Custom House." After giving a sermon on Election Day, one character reveals a stigma on his chest and dies after confessing to fathering Pearl. For 10 points, name this novel centering on Roger Chillingworth, Arthur Dimmesdale, and Hester Prynne, a work of Nathaniel Hawthorne.

ANSWER: *The **Scarlet Letter***

029-09-1-15110

11. Despite recovering from a stroke, Secretary of the Treasury William Crawford finished third in this election. John Calhoun dropped out of this race to run unopposed for the vice presidency. Fourth-place candidate Henry Clay allegedly swung this election in the House of Representatives in exchange for being appointed Secretary of State. For 10 points, name this election in which a "corrupt bargain" supposedly stole the presidency from Andrew Jackson, which resulted in a victory for John Quincy Adams.

ANSWER: **1824** Presidential Election [or equivalents]

003-09-1-15111

12. Properties about these structures can be proven in Hoare logic using their namesake invariants and guards. Transformations of them include interchange, fusion, and fission. A common programming error involving them is the “fence post” error. A conditional test, a counting variable, and incrementing code can be used to make the “for” variety of these, and an inaccessible exit condition results in an infinite one of these. For 10 points, name these iterative structures in programs that execute the same instructions until a certain condition is reached.

ANSWER: **loops** [prompt on **iterators**]

001-09-1-15112

13. In a sequel to this movie, Jason Alexander voices an incompetent robber who resurrects this movie's chief villain. Songs in this movie include "One Step Ahead," which plays while the protagonist is being chased by guards. The female lead in this movie has a pet tiger, while the villain has a wisecracking red parrot. This movie's most notable song is "A Whole New World," which plays during a romantic magic carpet ride. For 10 points, name this Disney animated movie in which a Robin Williams-voiced genie helps the title robber.

ANSWER: **Aladdin**

021-09-1-15113

14. WRITE MORE QUESTIONS, Particularly a RMP-Philosophy Tossup

00--20-15114

15. Germany's Maastricht Formation contains fossils from this geologic period, which saw the split of Africa and South America. It is geologically significant both for the large amounts of chalk formed during this period and for a layer of iridium known as the K-T boundary, which is believed to have been deposited by an asteroid. This period also saw diversification of dinosaur species, including the spawning of *Tyrannosaurus rex*. For 10 points, name this final period of the Mesozoic Era, whose end saw the mass extinction of the dinosaurs.

ANSWER: **Cretaceous** Period

025-09-1-15115

1A. What last epoch of the Quaternary period is the smallest geologic time period that extends to the present?

ANSWER: holocene epoch

1B. A manslaughter investigation is currently underway for Conrad Murray, the personal physician of what late artist and "King of Pop?"

ANSWER: Michael Joseph Jackson

2A. This critic analyzed *Shelley's Myth-making* and surveyed all of Shakespeare's major plays. Name this Yale University literary critic who defined the "Western Canon" of literature.

ANSWER: Harold Bloom

2B. When an action carries the opposite effect of its intention, the situational form of this device is used. Name this literary device whose verbal form is often expressed through sarcasm.

ANSWER: irony

3A. This artist's first single was "Tim McGraw." Name this up-and-coming pop-country artist whose 2008 album *Fearless* contains her hit single "Love Story."

ANSWER: Taylor Alison Swift

3B. This director's latest series stars Eliza Dushku as the "active" Echo. Name this director whose series include *Dollhouse*, *Firefly*, and *Buffy the Vampire Slayer*.

ANSWER: Joseph Hill "Joss" Whedon

4A. This is a 10-second calculation question. Add: $527.1 + 97.55$.

ANSWER: 624.65

4B. This is a 10-second calculation question. What number, when tripled and increased by two, gives fourteen?

ANSWER: 4

5A. This language has the inceptive and pending modal particles and contains four different tones. Name this language spoken in much of Northern China, with more speakers than Cantonese.

ANSWER: Mandarin Chinese

5B. What proto-Impressionist painter of *Olympia* was rejected from the official Paris Salon, leading to his exhibiting *Luncheon on the Grass* at the so-called "Salon des Refusés" (salon deh REF-yoo-say) instead?

ANSWER: Edouard Manet [do not accept "Monet"]

6A. This is a 20-second calculation question. What is the slope of a line parallel to the line $4x - 2y = 9$?

ANSWER: 2

6B. This is a 20-second calculation question. The width of a rectangle is three feet longer than twice its length. If the perimeter of the rectangle is 119 feet, find the width of the rectangle.

ANSWER: **17** feet

7A. The city of Rotterdam is near the delta of this river. Name this river which originates in Switzerland and flows through the German cities of Mainz (MINES), Bonn, and Cologne (cuh-LOAN-yuh).

ANSWER: **Rhine** River

7B. This structure secretes neurokinin B to protect itself from immune response. Name this organ that forms to provide a growing fetus with necessary oxygen and nutrients from its mother.

ANSWER: **placenta**

8A. Widespread voter fraud in this country was reported by Dr. Abdullah Abdullah, one of the men running for president here. Name this country whose 2009 elections will probably be won again by Hamid Karzai, and were boycotted by the Taliban.

ANSWER: Islamic Republic of **Afghanistan**

8B. This man formulated the correspondance principle in quantum physics. Name this Danish physicist who names a "radius" and a model of the atom with discrete orbits.

ANSWER: Niels Henrik David **Bohr**

9A. This is a 30-second calculation question. If we roll one standard six-sided die and one six-sided die with sides marked 1, 1, 2, 2, 3, 3, what is the expected value of the sum of the two rolls?

ANSWER: **5.5**

9B. This is a 30-second calculation question. What is the period of the function $y = 7 \sin (3x+7)$?

ANSWER: **120 degrees** [or **2 pi/3** radians]

10A. One of these objects is located at the center of the Crab Nebula, where it emits synchrotron radiation. Name this kind of magnetized neutron star that is known for spinning very quickly and emitting signals at regular intervals.

ANSWER: **pulsar**

10B. Omaha and Wichita were the cities chosen as the starting point for his "small world experiment." Name this psychologist, whose experiment on obedience to authority involved a "shock box."

ANSWER: Stanley **Milgram**

1. One writer from this country wrote about Hothead and Glasses, who wait at the *Bus Stop*, and about four aspects named "I," "You," "He," and "She," who travel to *Soul Mountain*. One hundred five men and three women are the protagonists of a classic from this country called *All Men are Brothers* or *Water Margin*. Another classic, which concerns a character born with a jade in his mouth, is *The Dream of the Red Chamber*. For 10 points, Cao Cao and Liu Bei appear in *The Romance of the Three Kingdoms*, which takes place after the fall of Han Dynasty in what nation?

ANSWER: People's Republic of China

022-09-1-15117

2. This president's election slogan promised a "full dinner pail" to American workers, and his presidential campaign was run by Marc Hanna. This president signed the Dingley tariff years after authoring his own tariff during his tenure as Chairman of the House Ways and Means Committee. This president started a war that led to the acquisition of Guam and Puerto Rico. For 10 points, name this President who twice defeated William Jennings Bryan in elections, and whose assassination by Leon Czolgosz in 1901 led to his succession by Theodore Roosevelt.

ANSWER: William McKinley, Jr.

021-09-1-15118

3. This god's lover Leucothoe (LOO-cah-THO-ee) was burned alive for coupling with him. This god was the father, with the Oceanid Perse, of the Minotaur's mother Pasiphae (PASS-ih-fay). This deity's son Phaeton incurred his wrath for stealing his chariot and scorching the earth. For 10 points, name this god who drove his chariot across the sky daily, fulfilling his duty as the Greek sun god.

ANSWER: Helios [or Helius]

026-09-1-15119

4. Ernst Munch used the pressure flow hypothesis to explain movement of substances in this tissue. This tissue is composed of companion cells, which aid elongated cells with nuclei, the sieve-tube members. Movement in this tissue is bidirectional, but always goes from sugar sources to sugar sinks. It is formed on the outside of the vascular cambium, and transports food throughout a plant. For 10 points, name this tissue of vascular plants, which is contrasted with xylem.

ANSWER: phloem

036-09-1-15120

5. Places sacred to this religion include the Well of Zamzam and the Cave of Hira. The winged horse Buraq features in the Night Journey, an event central to the history of this religion. One branch of this religion was followed by the poet Rumi and consists of the mystic whirling dervishes. The chief split in this religion occurred during the "First Fitna," when one group supported Ali as the fourth "rightly guided" Caliph. For 10 points, name this religion in which adherents can be Sufi, Shi'ite, or Suni.

ANSWER: Islam

015-09-1-15121

6. This nation's first Prime Minister, Saad Zaghlul, was overthrown in 1952 by the Free Officers Movement. This modern nation's capital was the capital of the Fatimid dynasty. This country's ancient city of Luxor contains its Valley of the Kings. Following Alexander the Great's conquest of this nation, the Ptolemaic dynasty was installed. This nation's rulers have included Gamal Nasser and Anwar Sadat. For 10 points, name this nation which fought the Six-Day War with Israel, and whose unsuccessful invasion by Napoleon culminated in the Battle of the Nile.

ANSWER: Arab Republic of **Egypt** [or Jumhuriyah **Misr** al-'Arabiyah]

022-09-1-15122

7. Early in this work, the protagonist discovers that "Alexander, Bartholomew, Abraham, Tobias, and Roger" are "dead and buried." In one scene in this novel, Pumblechook badgers another character into lying about the presence of an enormous coach in a house. One character says that "suffering has been stronger than all other teaching" after enduring a marriage to Drummle. That character, Estella, is revealed to be the daughter of a convict. After receiving money from Mr. Jaggers, the protagonist discovers that the criminal Abel Magwich has been his benefactor, rather than Miss Havisham. For 10 points, name this novel about Pip Pirrip, by Charles Dickens.

ANSWER: **Great Expectations**

032-09-1-15123

8. This document's ninth section provided for a council of 25 members to ensure cooperation. This document was called void by the Fourth Lateran Council, although Pope Innocent III forced one signer of this document to appoint Stephen Langton to a position of power. Langton helped organize the unrest which led to this document's predecessor, the Articles of the Barons. For 10 points, name this document that guaranteed some basic liberties, which was signed by King John at Runnymede in 1215.

ANSWER: **Magna Carta** [or **Great Charter**]

023-09-1-15124

9. This novel's protagonist empties a spittoon on a man whom he confuses for a person that gives him false letters of recommendation after being expelled from a college. After listening to Homer Barbee, he is mistaken for Rinehart and ends up fighting with Lucius Brockway. Ending with a riot in Harlem because of Tod Clifton's death, this novel contains a "Battle Royal" scene. For 10 points, name this book that features Brother Jack of the Brotherhood, written by Ralph Ellison.

ANSWER: **Invisible Man**

033-09-1-15125

10. This city's central business district includes the neighborhood of Circular Quay (KEY), and popular beaches in this city include Manly and Bondi. This city surrounds the harbor of Port Jackson, which is spanned by the world's widest bridge. Another landmark in this city is a building located next to the Royal Botanic Gardens on Bennelong Point that was designed by Jørn Utzon, this city's namesake Opera House. For 10 points, name this capital of New South Wales, which is the largest city in Australia.

ANSWER: **Sydney**

038-09-1-15126

11. Late in this phase of the cell cycle, its namesake promoting complex directs degradation of cyclins. The second part of this phase requires ATP for motors to move the spindle poles apart. It is initiated by the unlinking of sister chromatids (CROW-muh-tidz). For 10 points, name this phase of mitosis, in which chromosomes are pulled toward opposite ends of the cell, which precedes telophase and follows metaphase.

ANSWER: **anaphase**

003-09-1-15127

12. This nation was victorious in the War of the Pacific, defeating Peru and Bolivia. This nation's war for independence from Spain saw a victory at the Battle of Chacabuco, due partly to the cavalry of Supreme Dictator Bernardo O'Higgins. A 1973 coup d'etat in this country, supported by the U.S. government, overthrew the socialist regime in favor of a military junta. This nation's current president is Michelle Bachelet. For 10 points, name this South American country formerly led by Salvador Allende [AH-yend-ay] and Augusto Pinochet [PEE-no-CHET], whose capital is Santiago.

ANSWER: Republic of Chile [or República de Chile]

025-09-1-15128

13. This author wrote of Jerry, Slim, and Sweetwater and their relationships with Sue Murdock in *At Heaven's Gate*. He supported racial integration by publishing a set of interviews with civil rights leaders in *Who Speaks for the Negro?* In a novel by this man, Adam Stanton shoots the Boss after his sister, Anne, has an affair, while Jack Burden reports on the political rise of a southern governor. For 10 points, name this author who used Huey Long as inspiration for Willie Stark in *All the King's Men*.

ANSWER: Robert Penn Warren

036-09-1-15129

14. One monarch of this name was forced to accept the resignation of John Carteret. That monarch of this name was the last king of his nation to lead troops into battle, doing so at the Battle of Dettingen. Another ruler of this name helped boost stock in the South Sea Company after becoming governor of that entity. The fourth ruler of this name became regent following his father's descent into madness. For 10 points, give the shared name of these British monarchs of the Hanoverian Dynasty, the third of whom reigned during the American Revolution.

ANSWER: George [accept George II before "South Sea Company" is read]

030-09-1-15130

15. This author addresses "the awful shadow of some unseen Power" in his "Hymn to Intellectual Beauty." One poem by this author states that the central figure "beacons from the abode where the Eternal are." In addition to writing that elegy for Keats, "Adonais," this author describes the "harmonious madness" of a figure in a poem which opens "Hail to thee, blithe spirit." This author of "To a Skylark" penned the line "if Winter comes, can Spring be far behind?" in his "Ode to the West Wind." For 10 points, name this author of "Ozymandias," who was married to the novelist Mary.

ANSWER: Percy Bysshe Shelley

032-09-1-15131

1. The sea god worshipped in this myth system owned a pair of jewels that controlled the tides. This mythology believes that a red-skinned deity created thunder with a ring of drums. After vomiting up a meal, their food goddess was killed by their lunar deity. This myth system includes a storm deity that slew an eight-headed dragon and threw a flayed horse into the hall of his sister, the sun goddess, causing her to hide in a cave. For 10 points, identify this myth system whose deities, known as *kami*, included Raijin, Tsukuyomi, Susano-o, and Amaterasu.

ANSWER: Japanese mythology [or Shinto mythology]

029-09-1-15132

2. This painting contains a closed, dark, shop, whose upper windows have their blinds halfway down. This painting contains two large condiment dispensers on a container, behind which lies a man in a white hat and white uniform. The central building of this painting contains an advertisement for five cent Phillies cigars, and other figures in this painting include a woman in red and two identical men with hats and navy blue suits. Painted by the artist of *Chop Suey* and *Automat*, for 10 points, name this Edward Hopper painting depicting a lonely diner.

ANSWER: Nighthawks

024-09-1-15133

3. This organism was used to prove the semiconservative reproduction of DNA by Meselsohn and Stahl. Though it is not *Shigella*, types of this organism carry Shiga toxins. Lederberg and Tatum studied the F-plasmid of this organism to describe conjugation. This organism produces much of the Vitamin K2 in the large intestine, and it is an indicator species for fecal coliform. For 10 points, name this species of bacteria, a model organism whose malignant strains cause food poisoning.

ANSWER: Escherichia coli

036-09-1-15134

4. The namesake of this statement nearly succeeded in developing the Haber process, before impurities caused an explosion. In one case of this statement, the solubility of a salt is decreased if the solution already contains one of the salt's ions; this is known as the common-ion effect. This principle allows one to predict the direction of a reaction based on the ratio of the reaction quotient to the equilibrium constant. For 10 points, name this principle, stating that a system in equilibrium will react to stress in a way that counteracts the stress, named after a French chemist.

ANSWER: Le Chatelier's principle

003-09-1-15135

5. This author wrote the "Venetian Epigrams" and the "Roman Elegies" and in two novels, described the "Journeyman Years" and "Apprenticeship" of Wilhelm Meister. In one work by this author, the title resident of Wahlheim falls for a woman engaged to the much older Albert, whose two pistols he later borrows to kill himself. In another novel by this author, a sleeping potion dispatches Gretchen's mother and a poodle transforms into a character who makes the title character sign a contract with a drop of blood. For 10 points, name this German author of *The Sorrows of Young Werther*, who wrote about Mephistopheles's manipulation of *Faust*.

ANSWER: Johann Wolfgang von Goethe (GERR-tuh)

022-09-1-15136