



1. One king with this name suppressed Cade's Rebellion. This name was held by a king who put down a rebellion led by Perkin Warbeck. The king who was the son of John of Gaunt had this name. Another king with this name was killed by Francois Ravaillac (ra-va-YAK). A French king of this name protected Huguenots with the Edict of Nantes (NONT). For 10 points, give this shared first name of the first Tudor monarch and his son, the latter of whom ended up having six wives.

ANSWER: **Henry** [or **Henry** IV of England; or **Henry** VI; or **Henry** VII; or **Henry** VIII; or **Henry** of Navarre; or **Henry** IV of France]

149-12-54-08101

2. One character in this poem visits the Cave of Spleen, and during a trip in this work, characters play the card game Ombre. One character in this work owns the dog Shock and, until she finds "an earthly lover lurking at her heart," is protected by Ariel. Ariel is one of the many Sylphs that protect the protagonist of this poem, including one that is cut in half by a pair of scissors. For 10 points, name this mock epic by Alexander Pope in which a strand of Belinda's hair is stolen.

ANSWER: "The **Rape of the Lock**"

002-12-54-08102

3. This leader gave full funeral rites to the general Tiberius (tye-BEER-ee-us) Sempronius Gracchus after Gracchus was killed in an ambush by this man's general Hanno. This man used fog to ambush an army under Gaius Flaminius (fluh-MIN-ee-us) in the Battle of Lake Trasimene (TRAZ-ih-mean). A crescent-shaped formation helped this man win another battle against the Romans at Cannae (CAN-eye). For 10 points, name this leader who crossed the Alps with his elephants during his time fighting in the Second Punic War for Carthage.

ANSWER: **Hannibal** Barca

023-12-54-08103

4. One character in this work is driven to murderous rage by a setting of the creation story, and this work's first word, *hwaet* (HWET), has been alternatively translated as "hark" and "so." In this work, a mortally wounded king demands that the treasure he won be laid before him by Wiglaf (WIG-lahf). This poem is the subject of J. R. R. Tolkien's essay "The Monsters and the Critics," and its protagonist defends Heorot (HAY-or-oat), the mead-hall of Hrothgar. For 10 points, name this Anglo-Saxon epic whose title hero slays Grendel.

ANSWER: **Beowulf**

014-12-54-08104

5. Dallas Abbott's discovery of the Burckle structure led to the hypothesis that one of these phenomena indirectly created the Fernambosy (fer-nam-BOE-see) Chevron on Madagascar. These phenomena are responsible for the production of tektites. The moon's formation was probably a result of one of these phenomena. An iridium-rich layer of soil gave rise to the hypothesis that one of these caused the K-T extinction. For 10 points, name these events, one of which is thought to have caused the extinction of the dinosaurs.

ANSWER: meteorite **impact events** [or **meteorite impacts**; accept any answer that indicates that a **body** is **colliding with the Earth**; accept meteor, meteoroid, comet, asteroid, bolide and other synonyms in place of meteorite or body]

066-12-54-08105

6. In one play by this man, the mutual killing of Lodowick and Mathias is arranged by the father of their beloved Abigall. That play ends with the title merchant boiled in his own cauldron. In another play by this creator of Barabas, the title character asks, "Was this the face that launched a thousand ships?" when he sees Helen of Troy. That scholar employs the boy Wagner and sells his soul to Mephistopheles (meh-fis-TOH-fell-eez). For 10 points, name this Elizabethan playwright of *The Jew of Malta* and *Doctor Faustus*.

ANSWER: Christopher **Marlowe**

014-12-54-08106

7. This actress appeared in *Talladega Nights: The Ballad of Ricky Bobby* as the title character's mother. This actress, who played Joyce on the 2005-2009 seasons of *The L Word*, also plays the psychiatrist Linda Freeman on *Two and a Half Men*. This woman's character on another show is assisted by a teenager with Down Syndrome named Becky. She voiced the mermaid Neptuna in the animated short "Small Fry." For 10 points, name this actress who portrays the villainous Cheerios coach Sue Sylvester on *Glee*.

ANSWER: Jane **Lynch**

105-12-54-08107

8. This character's surname is thought to reference a type of membrane that surrounds the head of a newborn baby. This character recoils when his old English teacher, Mr. Antolini, puts his hand on his forehead, which he interprets as a sexual advance. He carries around a baseball glove belonging to his dead brother Allie. Shortly before the novel he appears in ends, he happily watches his sister Phoebe riding a carousel. For 10 points, name this phony-hating protagonist of J. D. Salinger's *The Catcher in the Rye*.

ANSWER: **Holden** Caulfield [or Holden **Caulfield**]

080-12-54-08108

9. Bands of "Boomers" pushed for the settlement of this state's territory, whose population increased dramatically in a massive "Land Rush" on April 22, 1889. Timothy McVeigh bombed the Alfred P. Murrah building in this state's capital. The "sooners" seized land in this future state before it was open to settlement. Territory that became this state was the destination of the Trail of Tears. For 10 points, name this former Indian Territory that is now a panhandled Southern state.

ANSWER: **Oklahoma**

080-12-54-08109

10. A limestone column that extends vertically from Phang Nga (FONG NWAH) Bay in this country is known as "James Bond Island." Between that bay and the Andaman Sea lies this country's resort of Phuket (FOO-ket). It is bordered to the west by Myanmar, to the north and east by Laos, and to the southeast by Cambodia. For 10 points, name this Southeast Asian country which is ruled by the Chakri Dynasty of kings named Rama, who live in a palace in Bangkok.

ANSWER: Kingdom of **Thailand** [or Ratcha Anachak **Thai**]

130-12-54-08110

11. In this mythology's creation story, two gods used a jeweled spear to stir the ocean, and dropped land off the end of the spear. Afterwards, the god of fire in this system burned his mother to death during birth, causing Izanagi (iz-uh-NAH-gee) to journey to Yomi. In another story from this mythology, a dance and a mirror were used to lure the sun goddess out of a cave. For 10 points, identify this myth system which worships Amaterasu (ah-mah-ter-AH-soo) and Raijin (RYE-jin).

ANSWER: **Shintoism** [or **Japanese** mythology]

019-12-54-08111

12. The leader of this event dictated his "Confessions" in prison to Thomas R. Gray. This event was led by a non-Native American man called "the Prophet," who claimed that a solar eclipse was a sign from god for action. In response to this event, a law was passed forbidding masters to teach their slaves to read. It began with the murder of the family of Joseph Travis, and resulted in the deaths of sixty whites in Southampton. For 10 points, name this 1831 slave rebellion in Virginia.

ANSWER: Nat **Turner's Rebellion** [or Nathaniel **Turner's Rebellion**; or the **Southampton Insurrection** before "Southampton" is read]

080-12-54-08112

13. Robert McFarlane attempted suicide due to his role in this event. This event violated the Boland Amendment. It was investigated by the Tower Commission, which implicated Oliver North and Caspar Weinberger (WINE-burg-err) but did not conclusively find that the sitting president was aware. This event resulted in National Security Advisor John Poindexter being convicted of a felony. For 10 points, name this Reagan-era event in which weapons were sold to a hostile Middle Eastern country to fund Nicaraguan rebels.

ANSWER: **Iran-Contra** Affair [or **Contragate**; or **Irangate**]

080-12-54-08113

14. Demand is plotted against this quantity on an Engel curve. Demand for inferior goods decreases when this quantity increases. The Lorenz curve plots the percentage of this quantity against the percentage of households. A consumer's purchasing power is determined by this quantity and the prices of goods. For 10 points, name this quantity, roughly defined as the amount of money a given consumer makes.

ANSWER: household **income**

080-12-54-08114

15. The Ixtoc I Oil Spill occurred in waters near this country, which is home to the archaeological site of Monte Alban. Tiburon Island is found in one body of water mostly enclosed by this country, at whose outlet lies Cabo San Lucas. The Bay of Campeche's (com-PAY-chayz) shores are owned by this country, as is the majority of a peninsula that contains the state of Quintana Roo. For 10 points, name this country that owns most of the Yucatan Peninsula and several Aztec ruins.

ANSWER: **Mexico** [or **United Mexican States**; or **Estados Unidos Mexicanos**]

040-12-54-08115



1A. What volcano in the Cascades is the tallest mountain in Oregon?

ANSWER: Mount **Hood**

1B. What programming paradigm, used in languages like Java and Python, focuses on packaging variables with their methods?

ANSWER: **object-oriented** programming

2A. Theodore Roosevelt negotiated the Treaty of Portsmouth that ended a war between Russia and what other country in 1905?

ANSWER: **Japan** [or **Nihon**-koku; or **Nippon**-koku]

2B. What artist of *Daughters of Revolution* is better known for a double portrait of his sister and dentist called *American Gothic*?

ANSWER: Grant DeVolson **Wood**

3A. This is a 10-second calculation question. What is the fifth term in the arithmetic sequence with first term -1 and difference 8?

ANSWER: **31**

3B. This is a 10-second calculation question. If the scores on Maggie's first five tests are 78, 82, 90, 93, and 84, what score must she receive on her sixth test to have a median test score of 85?

ANSWER: **86**

4A. Holy Roman Emperor Charles VI issued the Pragmatic Sanction of 1713 so that what daughter of his could gain the Austrian throne after Charles's death?

ANSWER: **Maria Theresa** Walburga Amalia Christina [or **Maria Theresia**]

4B. What Southeast Asian language uses the same word for “green” and “blue” and is written only in the Latin alphabet, with nine diacritical markings for stress and tone?

ANSWER: **Vietnamese** [or **tieng Viet**]

5A. On what instrument, also played by Thelonious (teh-LOE-nee-uhs) Monk and Herbie Hancock, did Duke Ellington compose *Black and Tan Fantasy* and *Mood Indigo*?

ANSWER: **piano**forte

5B. This is a 20-second calculation question. A right cylinder of radius r and height h is completely filled with water. If the water is then poured into a cylinder of radius $2r$, what is the new height of the water level, in terms of h ?

ANSWER: **$h/4$**

6A. This is a 20-second calculation question. A box contains blue and red balls. If there are eight times as many blue balls as red balls, and you draw two balls with replacement, what is the probability both are blue? Express your answer as a reduced fraction.

ANSWER: **$64/81$**

6B. What English poet wrote the pastoral elegy “Lycidas” (LIH-sid-us) and the epic *Paradise Lost*?

ANSWER: John **Milton**

7A. What chart-loving former economist replaced Silvio Berlusconi as Italy's Prime Minister in late 2011?

ANSWER: Mario **Monti**

7B. What astronomer from Egypt created a model for the universe used throughout medieval Europe in his *Almagest*?

ANSWER: Claudius **Ptolemy** (puh-TALL-uh-mee) [or Claudius **Ptolemaeus**]

8A. What government department, whose name Rick Perry failed to remember, made a multimillion-dollar loan to the collapsed "green" company Solyndra?

ANSWER: United States Department of **Energy**

8B. Which bishop argued in favor of the Christian God immediately after the sack of Rome in his tome *City of God*, and wrote the classic Christian autobiography *Confessions*?

ANSWER: Saint **Augustine** of Hippo

9A. What architect of Tokyo's Imperial Hotel also built Fallingwater for Edgar Kaufmann near Mill Run, Pennsylvania?

ANSWER: Frank Lloyd **Wright**

9B. What astronomical object discovered in 2005 forced the reclassification of Pluto as a dwarf planet?

ANSWER: **Eris**

10A. This is a 30-second calculation question. Find the point of intersection between the line given by the equation $y = 3x + 2$ and the line, perpendicular to the first, passing through the point (3,2). Express both the x- and y-coordinates as decimals to the tenths place.

ANSWER: **(0.3, 2.9)**

10B. This is a 30-second calculation question. On the interval theta greater than or equal to 0 degrees and less than 360 degrees, find all theta satisfying: $\sin 2\theta + \sin \theta = 0$.

ANSWER: **{0 degrees, 120 degrees, 180 degrees, 240 degrees}**_ [do not accept or prompt on partial answer]



1. One song by this artist asks the listener, “When will you realize [the title city] waits for you?” In another, this singer tries to convince Virginia to cast aside her Catholic upbringing. Those songs, “Vienna” and “Only the Good Die Young,” are found on his album *The Stranger*. In one of his songs, he has “a pretty good crowd for a Saturday.” That song has a chorus that implores him to “sing us a song tonight,” as well as a harmonica solo. For 10 points, name this singer of “Piano Man.”

ANSWER: William Martin "Billy" **Joel**

132-12-54-08117

2. The iron cathode of a Downs Cell produces this element by reducing its cation (CAT-eye-on). Lamps powered by vapors of this element, visible at about 590 nanometers, have replaced mercury vapor lamps. This element's cation is pumped outside of a cell while potassium is pumped inside a cell to produce a voltage gradient. This element's hydroxide is a highly-corrosive substance called lye. For 10 points, name this element that forms table salt with chlorine.

ANSWER: **sodium** [prompt on **Na**]

080-12-54-08118

3. The protagonist of this work visits such locations as the Emyrean (ehm-PEER-ee-ehn) and the Primum Mobile (PREE-mum MOE-bih-lay). After being pursued by a lion, a leopard, and a she-wolf, the protagonist of this work eventually meets the lovers Paolo (POW-loe) and Francesca (fran-CHESS-kuh). Earlier, he joins a procession of poets while in Limbo. The protagonist is guided by Beatrice for the last portion of his journey instead of Virgil. For 10 points, name this three-part epic consisting of *Paradiso*, *Purgatorio*, and *Inferno*, a work by Dante Alighieri.

ANSWER: *The **Divine Comedy*** [or *La **Divina Commedia***; prompt on ***Inferno***; prompt on ***Purgatorio***; prompt on ***Paradiso***]

014-12-54-08119

4. One attempt to verify this theory is LIGO (LIE-go), which detects a certain type of waves. This theory explains the Lense-Thirring (LENS-THEER-ing) effect, which is frame dragging around massive objects. Pound and Rebka confirmed this theory’s prediction of gravitational redshift, and it predicts that massive objects bend light in a form of lensing. This theory describes gravity as the curvature of space-time. For 10 points, name this theory that followed Einstein’s theory of special relativity.

ANSWER: theory of **general relativity** [or **general** theory of **relativity**; or **GR**; prompt on **relativity**]

149-12-54-08120

5. In one novel by this author, the protagonist joins the Thanatopsis Club after being convinced to move to Gopher Prairie. This author detailed the rise of the "Minute Men" to power in the United States in another novel. This author of *It Can't Happen Here* wrote a novel whose title character is a real estate salesman married to Myra. That character secretly condones the marriage of his son Ted. For 10 points, identify this American author of *Main Street* and *Babbitt*.

ANSWER: Harry Sinclair **Lewis**

002-12-54-08121

6. When a telescope is limited by this effect, its angular resolution is equal to one point two two times the wavelength of light over the aperture. When this effect is caused by a crystal it is known as the Bragg form of this effect. This effect's namesake grating (GREAT-ing) equation states that d times the sin (SIGN) of the maximum angle equals m times wavelength. This effect caused interference in Young's double slit experiment. For 10 points, name this apparent bending of a wave as it passes through a small opening.

ANSWER: **diffraction**

149-12-54-08122

7. Witnesses in this case included Detective Mark Fuhrman, who was convicted of perjury as a result, and surfer bum Kato Kaelin, who had lived in the defendant's guest house. The defendant in this case hired a "dream team" of lawyers led by Johnnie Cochran. In 2007, the defendant from this case wrote a controversial book about the crime entitled *If I Did It*. For 10 points, name this case, which ruled a famous football player not guilty of murdering his wife Nicole.

ANSWER: the **O.J. Simpson** Trial [or the O.J. **Simpson** Trial; or *People of the State of California v. Orenthal Jay Simpson*; or obvious equivalents]

080-12-54-08123

8. The "heat shock" variety of these entities is a subset of the "chaperone" type of these molecules, which are tagged for destruction by the attachment of ubiquitin (yoo-BIH-kwih-tin). Denaturing undoes the tertiary and quaternary structure which these molecules gain from folding, and they contain carbon-nitrogen linkages called peptide bonds. They are synthesized at the ribosome. For 10 points, name these biological molecules composed of amino acids, a key nutrient besides fats and carbohydrates.

ANSWER: **proteins** [prompt on **polypeptides**]

104-12-54-08124

9. Oliver Wendell Holmes referred to a speech by this man as the "Intellectual Declaration of Independence." That speech described the title figure as "man thinking." This author of "The American Scholar" wrote on the relation of man to God in "The Over-Soul." An essay by this author claims that "a foolish consistency is the hobgoblin of little minds" and urges the reader to "trust thyself." For 10 points, name this transcendentalist author of the essay "Self-Reliance" who was a friend of Henry David Thoreau.

ANSWER: Ralph Waldo **Emerson**

002-12-54-08125

10. One member of this phylum was used by Robert T. Paine as the first example of a keystone species. That member is *Pisaster ochraceus* (pih-SAHS-turr oh-KRAH-see-us). Another member of this phylum creates namesake "barrens" by devouring all the kelp in an area when they are not kept in check by sea otters. Members of this phylum use madreporites (mah-dreh-PORE-ites) to filter water for their water vascular systems. Members of this phylum exhibits bilateral symmetry as larvae, but pentaradial symmetry as adults. For 10 points, name this marine phylum that includes sea cucumbers and starfish.

ANSWER: **echinoderms** (ee-KIE-noh-derms) [or **Echinodermata**]

066-12-54-08126

11. This composer wrote a tribute to a Danish author in the style of a French suite, while his only concerto was the *Piano Concerto in A Minor*. This composer of the *Holberg* ("HOLE"-berg) *Suite* also wrote "Watchman's Song," "Wedding Day at Troldhaugen" (TROHLD-"how"-gehn), and other *Lyric Pieces* for piano. One orchestral suite by this man starts with "Morning Mood." For 10 points, name this Norwegian who wrote incidental music like "Solveig's ("SOLE"-vayg's) Song" and "In the Hall of the Mountain King" for *Peer Gynt* ("PEAR" GIHNT).

ANSWER: Edvard **Grieg** (GREGG)

140-12-54-08127

12. The number of theoretical plates required for this process is calculated by the Fenske equation. The simple form of this process is ineffective for azeotropes (AY-zee-oh-tropes), and the fractional form of this process must be employed when the compounds in question have close boiling points. In this process, a mixture is separated into its various chemical components based on differences in volatility. For 10 points, name this chemical process often employed in petroleum refineries.

ANSWER: **distillation** [or fractional **distillation**]

080-12-54-08128

13. In one of this author's stories, the title character dies when she drinks an antidote prepared by Professor Baglioni (bal-YO-knee) and given to her by the student Giovanni. This author of "Rappaccini's Daughter" described a man who observes his wife Faith at a Witches' Sabbath in his story "Young Goodman Brown." This author also described Chillingworth's torment of Reverend Dimmesdale, who fathers an illegitimate child with Hester Prynne, who wears the title object. For 10 points, name this American novelist of *The Scarlet Letter*.

ANSWER: Nathaniel **Hawthorne**

014-12-54-08129

14. Along with addition, one type of this operation is used to find the divergence of a function. Under certain conditions, requisite values returned by this operation are defined by Rolle's theorem and the mean value theorem. This operation equals zero at a critical point and performing it on x to the n power returns n times x to the n minus one power. This operation gives the slope of the line tangent to a curve. For 10 points, name this operation from calculus whose reverse is used in integration.

ANSWER: **differentiation** [or taking a **derivative**; or partial **differentiation**; or taking a partial **derivative**]

014-12-54-08130

15. In one of this man's plays, a dog puts another dog on trial for stealing a piece of cheese, and Bdelycleon (bi-de-"LIE"-clee-on) imprisons his father Philocleon (fill-AH-klee-on) to cure his addiction to the law courts. Cloudcuckooland features in another play by this author of *The Wasps*. He also wrote a play in which the women of Sparta and Athens withhold sex from their husbands so that they stop the Peloponnesian War. For 10 points, name this comic Athenian playwright of *The Birds* and *Lysistrata* (LIE-sih-STRAH-tuh).

ANSWER: **Aristophanes** (air-ih-STAHF-uh-nees)

080-12-54-08131



1. This is the color of the Hoescht (HOASH) stain when it binds to DNA. Fehling's A solution is this color. One compound named after this color is used to treat heavy metal poisoning by cesium and thallium. Irises of this color are caused by Tyndall (TIN-dull) scattering, which also causes smoke to appear this color when light is passed through it. Cyanide got its name because it appeared as this color. For 10 points, name this color that red litmus paper turns under basic conditions.

ANSWER: **blue**

066-12-54-08132

2. This President signed the Hepburn Act, which let the Interstate Commerce Commission set maximum railroad rates, and the Pure Food and Drug Act as part of his Square Deal. This man was shot by John Schrank when he was campaigning for the election of 1912, during which he promoted "New Nationalism" with the Bull Moose Party. This President used his bully pulpit to bust trusts such as Standard Oil. For 10 points, name this man who became President after the 1901 death of William McKinley.

ANSWER: **Theodore Roosevelt** [or **Teddy Roosevelt**; or **TR**; prompt on **Roosevelt**]

135-12-54-08133

3. In the Homeric epics, this deity is called "cow-eyed." Jason lost his sandal while carrying this deity across a river. This deity tricked Semele (SEH-muh-lee) into asking to see Zeus in his divine form, which incinerated her. This deity decorated the peacock with the eyes of her slain servant Argus. She was jealous of her husband's numerous human mistresses, such as Io. For 10 points, name this queen of the gods, the wife and sister of Zeus.

ANSWER: **Hera** [or **Juno**]

080-12-54-08134

4. One character in this novel attempts to break up a fight between Dick Sterrett and Coode in Mrs. Turner's restaurant. That character plays checkers with the protagonist before taking her away from Eatonville. After a hurricane, the protagonist is forced to shoot her third husband when he is driven mad by rabies. In this novel, the protagonist marries Logan Killicks, Jody Starks, and Tea Cake. For 10 points, name this novel about Janie Crawford written by Zora Neale Hurston.

ANSWER: ***Their Eyes Were Watching God***

014-12-54-08135

5. The ABC model of these structures' genetic development was derived studying the model organism *Arabidopsis* (uh-rab-ih-DAH-p-sis). A calyx of sepals is found at the lower end of these objects, whose parts generally come in multiples of three in monocots (MAH-noh-cots). Angiosperms (AN-gee-oh-sperms) are defined by these objects' presence, and their filaments, tipped by anthers, compose their stamen. Once these object's pistils are pollinated they can grow into fruit. For 10 points, name these radially-symmetric, colorful plant parts with petals.

ANSWER: **flowers** (prompt on **plant**s before angiosperms)

104-12-54-08136

This is a calculation question. Rugs are sold for \$10 per square foot. If James opts to buy a circular rug with diameter 2 feet versus a square rug with sides of 2 feet, how much money does he save? Round to the nearest dime.

ANSWER: **\$8.60** [or **860 cents**]

104-12-54-08137

What artistic movement was popularized by writers such as Andre Breton (breh-TONE) and paintings such as *The Hallucinogenic Toreador* (TORR-ay-uh-dore)?

ANSWER: **surrealism**

104-12-54-08137