



1. In 1378, this city's class of wool carders called the ciompi (CHOM-pee) revolted. Pope Sixtus IV backed the Pazzi family in their attempt to assume power in this city. Charles VIII of France's invasion allowed the religious fanatic Girolamo Savonarola to come to power in this city and institute the bonfire of the vanities. For much of the Renaissance, this city was led by bankers and art patrons like Cosimo and Lorenzo the Magnificent. For 15 points, name this Italian city ruled by the Medici.

ANSWER: **Florence** [or **Firenze**]

015-12-85-02101

BONUS: What misfolded proteins cause conditions such as mad cow disease and kuru when their misfolded state propagates, creating holes in the brain?

ANSWER: **prions**

104-12-85-0210-1

2. This artist's collaborations with the singer and model Nico included his film *Chelsea Girls*. He coined the expression "15 minutes of fame." Most of his work was completed at a New York City studio called The Factory. He designed the banana that graces the cover the debut Velvet Underground album. He used a repetitive silk screen process for his colorful pictures of Marilyn Monroe. For 15 points, name this American pop artist known for his paintings of Campbell's soup cans.

ANSWER: Andy **Warhol**

015-12-85-02102

BONUS: Which American President controversially fired over 11,000 striking air traffic controllers and temporarily banned them from all federal service jobs?

ANSWER: Ronald Wilson **Reagan**

052-12-85-0210-1

3. A naïve derivation of the entropy of these substances shows that it is negative infinity at absolute zero, but that result can be corrected by deriving the Sackur-Tetrode equation. These substances have a compressibility factor of one. The dimensionless heat capacity of these substances is equal to either $3/2$ or $5/2$ depending on whether they are monatomic or diatomic. These substances have very small molecules and no attractive or repulsive forces between molecules, and generally follow the kinetic-molecular theory. For 15 points, name these substances governed by a namesake equation of state written $P V$ equals $n R T$.

ANSWER: **ideal gas**

048-12-85-02103

BONUS: The title character of what Edward Arlington Robinson poem "went home and put a bullet through his head"?

ANSWER: Richard **Cory** [or **Richard** Cory]

015-12-85-0210-1

4. One performer on this instrument collaborated with trumpeter Dizzy Gillespie to record the piece "Ko-Ko," one of the first bebop recordings. That performer on this instrument also composed "Billie's Bounce" and "Ornithology," and was nicknamed "Bird." A later performer on this instrument recorded such albums as *A Love Supreme* and *My Favorite Things*. For 15 points, name this instrument played by Charlie Parker and John Coltrane, a woodwind whose most common varieties are tenor and alto.

ANSWER: **saxophone** [or **sax**]

014-12-85-02104

BONUS: What city's *favelas* have been the target of a "pacification program" in preparation for the 2016 Olympics?

ANSWER: **Rio** de Janeiro, Brazil

080-12-85-0210-1

5. In one story from this book of the Bible, Simeon and Levi sack Shechem in retaliation against the rape of their sister Dinah. This book also contains the image of a ladder to heaven that is seen by Jacob in a dream. It tells the story of the Tower of Babel and the destruction of Sodom and Gomorrah. Other stories relayed in this book include Joseph's interpretations of the Pharaoh's dreams and the flooding of the Earth. For 15 points, name this Biblical book which opens with the creation of the world.

ANSWER: Book of **Genesis**

015-12-85-02105

BONUS: Identify the Romantic American art movement represented by such landscape painters as Frederic Edwin Church and Thomas Cole.

ANSWER: **Hudson River** School

014-12-85-0210-1

6. One test of this organ outputs peaks called QRS complexes between a P-wave and a T-wave. Some of its collagen-heavy chordae tendineae (COR-die ten-DEE-nay-eye) connect to its tricuspid valve. This organ's sinoatrial (SIGH-no-AY-tree-ul) node generates signals for its Purkinje fibers, which conduct electrical impulses through it. One of its two atriums connects to the left ventricle, where fluid is pushed through to the aorta. For 15 points, name this organ revived by a defibrillator, which pumps blood.

ANSWER: the **heart**

104-12-85-02106

BONUS: Halogens have the largest value for what quantity equal to the amount of energy given off when an electron is added to a neutral atom?

ANSWER: **electron affinity**

079-12-85-0210-1

7. In one experiment, this thinker showed that individuals were less likely to mail misplaced envelopes addressed to controversial organizations than those addressed to individuals. He provided evidence that the average path length between two people in the worldwide social network was six people in his "small world" experiment. In another of his experiments, a participant designated a "teacher" was instructed to deliver electric shocks to a "learner." For 15 points, name this psychologist who conducted a series of experiments on obedience to authority.

ANSWER: Stanley **Milgram**

014-12-85-02107

BONUS: The Plain of Jars archaeological site is found in what country, the homeland to most of the Hmong [MUNG] ethnic group?

ANSWER: **Laos**

019-12-85-0210-1

8. Four methyl groups are attached to this element in a compound used as a standard for chemical shift calibration in NMR. This element is doped with boron in p-type devices. The most common rock-forming minerals contain this element. A hydrated dioxide of this element forms the cell walls of diatoms. An extremely purified form of this element is used in integrated circuits and semiconductors. This second-lightest of the metalloids has a valence of four. For 15 points, name this element found in quartz, which gives its name to a hi-tech "valley" in California.

ANSWER: **silicon** [or **Si**]

020-12-85-02108

BONUS: Elie Wiesel (ELL-ee vee-ZELL) recounted his experiences in the Auschwitz and Buchenwald concentration camps in what autobiographical book?

ANSWER: Night [or *La Nuit*]

014-12-85-0210-1

9. This man used a stealthy night climb to take the Sogdian Rock, where he met his future wife Roxana. He commanded a cavalry unit known as the Companions. At the age of eighteen, he led forces over the Athenians and Persians at the Battle of Chaeronea, a victory for his father, Philip II. This general, who was tutored by Aristotle, defeated the Persians at the battles of Issus and Gaugamela. For 15 points, name this Macedonian who died at the age of 32 after conquering much of the known world.

ANSWER: Alexander the Great [or Alexander III of Macedonia ; prompt on Alexander]

015-12-85-02109

BONUS: This is a 30-second calculation question. Given the 3 equations $x + y + z = 5$, $2x + y - z = 3$, and $x + 2y = 1$, solve for z.

ANSWER: 11/4 [or 2.75]

080-12-85-0210-1

10. One of these procedures divides a list into n sublists of one element and then merges them. Tony Hoare developed one of these procedures which recursively divides a structure around a pivot value. That one is a divide-and-conquer algorithm aptly named "quick." One of the first examples of these algorithms compares every bordering pair of elements and switches them if necessary; that is the bubble type. For 15 points, name these algorithms used to order lists.

ANSWER: sorting algorithms

121-12-85-02110

BONUS: What hero killed the Hydra with the help of his nephew Iolaus (ee-OH-lay-us)?

ANSWER: Heracles [or Hercules]

015-12-85-0210-1

11. The states of this empire participated in ritual battles called Flower Wars. This empire was consolidated with two alliances arranged under the rule of Itzcoatl (ITS-coh-AW-tul). After the death of one of their rulers, the people of this empire successfully drove invaders from their capital in "La Noche Triste." This empire had its capital at Tenochtitlan (TEN-ok-TEET-lan) and was led by Montezuma. For 15 points, name this Mesoamerican empire conquered by the Spanish under Hernan Cortes.

ANSWER: Aztec Empire

014-12-85-02111

BONUS: What current Governor of Massachusetts declared "It's time for Democrats to grow a backbone" in his speech at the Democratic National Convention?

ANSWER: Deval Laurdine Patrick

080-12-85-0210-1

12. This author declared "I decline to accept the end of man" in his Nobel Prize acceptance speech. One of his novels follows the pregnant teenager Lena Grove and the racially confused Joe Christmas. This author frequently wrote about the Snopes and Sartoris families, and set many of his works in Yoknapatawpha (YAHK-nuh-puh-TAW-fuh) County. Quentin Compson narrates this author's novel about the rise and fall of Thomas Sutpen's plantation. For 15 points, name this author of *Absalom, Absalom!* and *The Sound and the Fury*.

ANSWER: William Faulkner [or William Cuthbert Faulkner]

015-12-85-02112

BONUS: This is a 30-second calculation question. Consider a circle of radius 3 with a trapezoid inscribed inside. If one of the trapezoid's bases is the diameter, the other base has length 4, and the legs of the trapezoid each form an angle of 30 degrees with the diameter, what area of the circle is not covered by the trapezoid?

ANSWER: **9 pi - 5 root 3** [or **19.6**]

080-12-85-0210-1

13. This character's friend is bemused to notice that he only puts on his boots in private. He slips out of Father Mapple's sermon on Jonah, and consults his small idol named Yojo. Believing himself to be dying of fever, this character builds himself a coffin that is later used as a life raft. The Quakers Bildad and Peleg offer him a large chunk of the *Pequod's* earnings because of his skill. For 15 points, name this tattooed harpooner, a friend of Ishmael in *Moby-Dick*.

ANSWER: **Queequeg**

015-12-85-02113

BONUS: This is a 20-second calculation question. If a right triangle has one side of length 9 and a hypotenuse of length 15, what is the length of the remaining side?

ANSWER: **12**

080-12-85-0210-1

14. As Vice President, this man engaged in the "kitchen debate" with Khrushchev. He defended his integrity in the "Checkers" speech, which was named for his daughter's dog. This man lost the 1960 presidential election to John F. Kennedy. As President, he spoke of a "silent majority" and worked with Henry Kissinger. This man declared, "I am not a crook," despite refusing to release a series of tapes. For 15 points, name this President who was forced to resign after the Watergate Scandal.

ANSWER: Richard Milhous **Nixon**

015-12-85-02114

BONUS: In 2012, both Kristen Stewart and Julia Roberts starred in film versions of what classic fairytale, which was also the first full-length Disney animated feature?

ANSWER: **Snow White** and the Seven Dwarves

052-12-85-0210-1

15. This poet wrote of a desire to "live alone in the bee-loud glade" in a poem in which the speaker hears the title entity "in the deep heart's core." In another of his poems, the speaker expresses the desire to become a mechanical golden bird in the title city. This poet of "The Lake Isle of Innisfree," also wrote the poems that provided the titles of the novels *No Country for Old Men* and *Things Fall Apart*. For 15 points, name this Irish poet of "Sailing to Byzantium" and "The Second Coming."

ANSWER: William Butler **Yeats**

014-12-85-02115

BONUS: On what British ship did Charles Darwin serve as a naturalist, allowing him to make many key scientific observations?

ANSWER: HMS **Beagle**

052-12-85-0210-1

16. One location in this state is said to be where the "Spirit of the Above-World," Skell, resides, according to the stories of the Klamath Tribes. One figure in this state opposed the damming of the Tuolumne River and Hetch Hetchy Valley. That man worked here as an environmental activist and was named John Muir. This state is home to Mount Shasta and the largest tree on Earth, the General Sherman. For 15 points, name this western state whose tallest point is Mount Whitney, a peak in the Sequoia National Park.

ANSWER: **California**

052-12-85-02116

BONUS: What American artist of *Lavender Mist* was known for dripping paint onto his canvases?

ANSWER: Jackson **Pollock**

015-12-85-0210-1

17. One religious leader in this country was executed by order of Amir Kabir after prophesying "the one who God shall make manifest." That man founded a religion in this country that venerates *The Book of Certitude*. This country was ruled for a millennium by followers of a religion that believes in the evil Angra Mainyu and the good god Ahura Mazda. For 15 points, name this homeland of Bahai and Zoroastrianism, which is now the world's largest Shia Muslim country and is ruled by Shia ayatollahs.

ANSWER: Islamic Republic of **Iran** [or Jomhuri-ye Eslami-ye **Iran**; or **Persian Empire**]

019-12-85-02117

BONUS: The Mercalli scale is used to measure the effects and intensity of what types of natural events?

ANSWER: **earthquakes**

052-12-85-0210-1

18. In three-dimensional systems, one value in this law is replaced by a tensor with 81 coefficients. The square root of the proportionality constant in this law divided by the mass gives the natural frequency of the system it describes. This law only holds below the yield point, and integrating it gives an expression for potential energy, which is minimal at zero displacement. For 15 points, name this law, which relates the displacement of a spring to the force applied.

ANSWER: **Hooke's** law

048-12-85-02118

BONUS: The tallest peak in the United States, Mount McKinley, is located in what national park which serves as the alternate name for the mountain?

ANSWER: **Denali** National Park and Preserve

052-12-85-0210-1

19. One work by this poet describes how "moving through a mirror clear...shadows of the world appear" to the title character, who sets herself adrift in a boat and dies after seeing Sir Lancelot. Another of his poems asks, "Was not a man dismayed?" at an ill-conceived order given to a group who "came through the jaws of Death, back from the mouth of Hell, all that was left of them, left of six hundred." For 15 points, name this Victorian poet of "The Lady of Shalott" and "The Charge of the Light Brigade."

ANSWER: Alfred, Lord **Tennyson**

014-12-85-02119

BONUS: Identify the branch of languages that includes Hebrew and Arabic.

ANSWER: **Semitic** languages [prompt on **Afro-Asiatic** languages]

080-12-85-0210-1

20. One novel written in this language includes a blank chapter suggesting the death of the protagonist entitled, "Vanished into the Clouds." One female writer in this language provided extensive records of medieval court life in *The Pillow Book*. A 20th-century novelist in this language wrote a tetralogy called *The Sea of Fertility* and described a disturbed acolyte who burns down the title structure in *The Temple of the Golden Pavilion*. For 15 points, name this language used by Lady Murasaki (mur-uh-SAH-kee) and Yukio Mishima.

ANSWER: **Japanese** [or **Nihongo**]

014-12-85-02120

BONUS: This is a 20-second calculation question. If three identical fair coins are flipped, what is the probability that all three coins will land showing the same face?

ANSWER: **one fourth** [or **0.25**; or **one quarter**; or **25 percent**]

174-12-85-0210-1

21. This was the third single from the *Wild Ones* album and is accompanied by a video which uses split screen to show beach scenes from Acapulco. This song, which knocked "Call Me Maybe" out of the #1 spot on the Billboard chart, exclaims "my Bugatti the same road" and asks "who done paved the road wider?" For 15 points, name this 2012 hit which advocates doing the title action "while you work," and contains a pursed lips-produced melody created by Flo Rida.

ANSWER: "**Whistle**"

019-12-85-02121

BONUS: What grandson of Queen Victoria and last emperor of Germany was forced into exile in the Netherlands following Germany's defeat in World War I?

ANSWER: **Wilhelm II** [or **William II**; or **Friedrich Wilhelm Viktor Albert**; prompt on **Wilhelm**; prompt on **William**]

030-12-85-0210-1

22. One character in this novel barely catches a clock after knocking it off a mantle. That character is told "you always look so cool." The narrator of this novel has been mulling on advice his father gave him in his "younger and more vulnerable years." Its title character is shot in his swimming pool by George Wilson after Myrtle is killed by a yellow car. The title character of this novel invites Nick Carraway to some of the lavish East Egg parties he has thrown to impress Daisy Buchanan. For 15 points, name this novel by F. Scott Fitzgerald.

ANSWER: *The **Great Gatsby***

015-12-85-02122

BONUS: This is a 30-second calculation question. A red hat contains three green and one blue candies. A white hat contains three green and three blue candies. A hat is chosen at random, and then a candy is chosen at random from that hat. If the candy is green, then express as the simplest fraction the probability that the hat chosen was red.

ANSWER: **3/5** [or **0.6**; or numerical equivalents]

020-12-85-0210-1

23. This founder of the newspaper *The Commoner* resigned from his last government post after the *Lusitania* sinking made war seem inevitable. This man was called to Tennessee to defend the Butler Act. Called the "Boy Orator of the Platte" for his Nebraska origins, this man faced off against Clarence Darrow in the Scopes Monkey Trial. For 15 points, name this populist and Democrat who lost in three presidential elections and gave the "Cross of Gold" speech.

ANSWER: William Jennings **Bryan**

104-12-85-02123

BONUS: What is the most populous city in Oregon?

ANSWER: **Portland**

080-12-85-0210-1

24. The Japanese noun "sunahama" is often translated as this English word, though it is more common in Japanese to use a word that literally refers to another place, the metonym "umi," to refer to these things. Many Romance languages trace their word for this place to a Latin noun meaning "stripe." In Russian, this place is called a "plyazh" (PLOSH), and it is "la plage" (PLOJ) in French and "la playa" (PLIE-uh) in Spanish. For 15 points, identify this place which might be found near "la mer" or "the sea."

ANSWER: "**beach**"

019-12-85-02124

BONUS: What Jane Austen novel focuses on Willoughby's interactions with the emotional Marianne and her sister Elinor Dashwood?

ANSWER: **Sense and Sensibility**

104-12-85-0210-1

25. In lesser-noted parts of this election, John Lehman took the seat of Van Wanggaard, and Mahlon Mitchell failed to unseat Rebecca Kleefisch. After a primary challenge by Kathleen Falk, Tom Barrett lost by seven points in this election, which resolved the same issue that sparked a March 2011 occupation of the state capitol. A proposed restriction in collective bargaining rights by public employees was the major issue in, for 15 points, what June 2012 election in which Scott Walker retained his governorship?

ANSWER: 2012 **Wisconsin recall** election [or **recall** election of Scott **Walker** until "Scott Walker" is read; prompt on **recall** election; prompt on Wisconsin **gubernatorial** election; prompt on Wisconsin **governor's** election]

019-12-85-02125

BONUS: Name the logical fallacy in which a proposition relies on an implicit, unsupported premise as proof of its own truth.

ANSWER: **begging the question** [or word forms; or **petitio principii**; or **hysteron proteron**]

020-12-85-0210-1



26. This god is the father of a being who runs a court of justice at Glitnir. His death was avenged by Vali, who grew to adulthood in one day to slay this god's murderer. This god owns a hall named Breidablik. At his funeral, his wife, Nanna, threw herself on the funeral pyre. This being was killed by his own brother, the blind Hoder. This god would have been released from the underworld, but Loki disguised himself as a giantess and refused to cry. For 15 points, name this Norse god killed by the one object that could slay him, mistletoe.

ANSWER: **Balder**

052-12-85-02126

BONUS: This is a 30-second calculation question. Name all the quadrants where sine of two times x is positive.

ANSWER: **first** and **third** quadrants [or Quadrants **I** and **III**; accept either order]

174-12-85-0210-1

27. A malfunction in one protein found in these organelles results in Pompe's disease. They were discovered in 1949 by Christian de Duve after he homogenized animal cells in an ultracentrifuge. These objects form as vesicles budding from the Golgi network fuse with endosomes. Since these organelles can release destructive enzymes into the cytoplasm, they are sometimes referred to as "suicide sacs." For 15 points, name these organelles in animal cells which break down waste materials.

ANSWER: **lysosomes**

052-12-85-02127