



1. This general was fooled by campfires and the sounds of digging into letting his opponent escape at Assunpink Creek. This man commanded light infantry under Howe during the Philadelphia campaign. He appointed Charles O'Hara as his representative, causing Washington to appoint Benjamin Lincoln as his representative. This man's victories at Camden and Guilford Courthouse could not save him from being trapped at Yorktown. For 15 points, name this British general who surrendered to George Washington.

ANSWER: Charles **Cornwallis**

015-12-85-07101

BONUS: What force, which is proportional to the square of an object's speed, is caused by a fluid resisting the movement of an object through it?

ANSWER: **drag** [prompt on **air resistance** or **fluid resistance**]

132-12-85-0710-1

2. The final section of this work lists Greek philosophy, demonology, and misinterpretation of Scripture as leading causes of a "kingdom of darkness" characterized by mass ignorance. This work theorizes the state of nature as a *bellum omnia contra omnes*, or "war of all against all," in which the life of man is "solitary, poor, nasty, brutish, and short." For 15 points, name this work of political theory advocating the benefits of absolute monarchies, a work of Thomas Hobbes.

ANSWER: **Leviathan**

014-12-85-07102

BONUS: What Southern city was the location of Fort Moultrie and of Denmark Vesey's failed slave rebellion?

ANSWER: **Charleston**

030-12-85-0710-1

3. This man's autobiography includes a list of "Thirteen Virtues" by which he lived his life. As a teenager, he published as Silence Dogood. This inventor of the lightning rod created a political cartoon depicting a severed snake and the caption "Join or Die." The first American ambassador to France, this man created a volunteer fire department and published *Poor Richard's Almanack* in his home city of Philadelphia. For 15 points, name this Founding Father who flew a kite in a storm.

ANSWER: Benjamin **Franklin**

015-12-85-07103

BONUS: What Norse god tricked Hodr (HOE-dur) into killing his brother Balder?

ANSWER: **Loki**

015-12-85-0710-1

4. An art museum in this city was built for the 1904 World's Fair and was constructed by Cass Gilbert in its neighborhood of Forest Park. The first major skyscraper was a ten-story red brick building in this city designed by Dankmar Adler and Louis Sullivan. This home of the Wainwright Building also contains the Jefferson National Expansion Memorial, which houses a steel structure in this city which, at 630 feet, is the tallest monument in the U.S. For 15 points, identify this Midwestern city which is home to Eero Saarinen's Gateway Arch.

ANSWER: **St. Louis**, Missouri

189-12-85-07104

BONUS: What system of electricity championed by Tesla in the current wars is contrasted with Edison's DC?

ANSWER: **alternating current** [or **AC**]

066-12-85-0710-1

5. In this story, a time before such modernizations as replacing traditional wooden chips with pieces of paper is recalled by Old Man Warner. Its publication caused an unprecedented number of cancelled subscriptions to *The New Yorker*. In this story, Tessie Hutchinson protests “it isn’t fair, it isn’t right” after drawing a paper marked with a black spot. For 15 points, name this short story in which a small town ritually stones an unlucky citizen written by Shirley Jackson.

ANSWER: “The **Lottery**”

015-12-85-07105

BONUS: What process with “allopatric” and “sympatric” forms allows new organisms to arise from reproductively-isolated populations?

ANSWER: **speciation**

104-12-85-0710-1

6. After being frightened by a certain discovery, the protagonist of this work digs an underground cave into which he herds his goats every night. Having become a successful plantation owner in Brazil, the protagonist departs on an ill-fated expedition to gather slaves. Not long after seeing a human footprint in the sand, the title character saves a man from a group of cannibals and bestows on him the name Friday. For 15 points, name this novel about an English castaway written by Daniel Defoe.

ANSWER: **Robinson Crusoe**

014-12-85-07106

BONUS: What Polish-born anthropologist analyzed the culture of the Trobriand islanders in his book *Argonauts of the Western Pacific*?

ANSWER: Bronislaw **Malinowski**

014-12-85-0710-1

7. The radius of gyration for one of these objects is equal to I over mass times radius, while two pi times the square root of I over mass times radius times the local gravitational acceleration is equal to the period for one of these objects, which Galileo believed was independent of starting point. One of these objects was used to show that the Earth rotates by Foucault. For 15 points, name these objects that are made up of a swinging mass at the end of a rope.

ANSWER: **pendulum**

149-12-85-07107

BONUS: What philosopher's tract *The Gay Science* contained his famous proclamation that “God is dead?”

ANSWER: Friedrich **Nietzsche**

014-12-85-0710-1

8. This man's command was taken over by Daniel Morgan when this man was wounded in the leg during the Battle of Quebec. This husband of Peggy Shippen was found to have collaborated with Major John Andre. He joined Ethan Allen and the Green Mountain Boys for the successful storming of Fort Ticonderoga. This man was given command of West Point in 1780, and he planned to use his position to turn the fort over to the British. For 15 points, name this infamous traitor of the American Revolution.

ANSWER: Benedict **Arnold**

015-12-85-07108

BONUS: In what state did Governor Scott Walker sign a law that ended collective bargaining rights for public employees?

ANSWER: **Wisconsin**

030-12-85-0710-1

9. This man was forced to flee his homeland because of a conflict with Pasquale Paoli. This man signed the Treaty of Tilsit with Alexander I, who later joined with Austria and Sweden to defeat this man at the Battle of Leipzig. After being exiled to the island of Elba, this man returned in a period known as the Hundred Days. He was defeated by Wellington and Bluecher at a battle in Belgium. For 15 points, name this French general and emperor who was exiled to Helena after losing at Waterloo.

ANSWER: **Napoleon** Bonaparte [or Napoleon **Bonaparte**; or **Napoleon I**]

015-12-85-07109

BONUS: This is a calculation question. What is the radius of the circle described by the equation $x^2 + y^2 + 6y = 7$?

ANSWER: **4**

080-12-85-0710-1

10. Some versions of this compound are distinguished by having a long phytyl side chain, and variations in its fluorescence properties are the subject of the Kautsky effect. Removing the central metal of this compound gives pheophytin. This compound, which typically contains a magnesium atom coordinated to a porphyrin ring, is present in the reaction centers of photosystems I and II of the chloroplast. For 15 points, name this pigment used to absorb light, that gives plants its green color.

ANSWER: **chlorophyll**

048-12-85-07110

BONUS: John Bonham is the late drummer of what band whose songs include “Houses of the Holy” and “Stairway to Heaven”?

ANSWER: **Led Zeppelin**

030-12-85-0710-1

11. The speaker of this poem prophesizes how “some hoary-headed swain” will say of him, “One morn I missed him on the custumed hill,” implying the speaker’s death. After defending the merits of a rural lifestyle, the speaker notes, “Some mute inglorious Milton here may rest, some Cromwell guiltless of his country’s blood.” In this poem’s first stanza, the world is left “to darkness and to me” as “the curfew tolls the knell of parting day” and the speaker sits in the title location. For 15 points, name this elegy by Thomas Gray.

ANSWER: **“Elegy Written in a Country Churchyard”**

014-12-85-07111

BONUS: These features typically occur at convergent boundaries and can be thought of as the counterpart to mid-ocean ridges. What are these narrow, deep depressions in the seabed that include the Marianas one?

ANSWER: oceanic **trenches**

066-12-85-0710-1

12. This composer used a *largo alla siciliana* tempo for “La Paix,” the third movement of a composition celebrating the end of the War of Austrian Succession. He also wrote three suites named for their use in a concert for George I on a barge on the Thames. This composer of *Music for the Royal Fireworks* and *Water Music* also wrote an oratorio featuring a famous “Hallelujah” Chorus. For 15 points, name this German-born British composer of *Messiah*.

ANSWER: George Frideric **Handel**

014-12-85-07112

BONUS: This is a 20-second calculation question. For a circle of radius 6, what is the area, in terms of pi, of a sector with a central angle of 30 degrees?

ANSWER: **3 pi** square units

197-12-85-0710-1

13. These regions can contain extremely flat, sea-like areas called ergs. Wind blowing through these regions can produce a 450 Hz signal that resembles "singing" or "booming." Plants like yuccas and agaves can thrive in these areas, where animals like kangaroo rats adapt by burrowing. The largest one on Earth is, by one definition, Antarctica, but more traditional examples include the Chilean Atacama. For 15 points, the African Sahara is an example of what class of arid region?

ANSWER: arid **deserts**

080-12-85-07113

BONUS: This is a 20-second calculation question. Express 270 degrees as radians with the simplest fraction.

ANSWER: **3pi/2** [or **three-halves pi**]

020-12-85-0710-1

14. The title character of this play ends one soliloquy by requesting, "Shine out, fair sun, till I have bought a glass, that I may see my shadow as I pass." That title character describes how "Our stern alarms" are "changed to merry meetings" in the soliloquy that opens the play, beginning, "Now is the winter of our discontent made glorious summer by this sun of York." For 15 points, name this Shakespearean history about a villainous king who dies after exclaiming, "A horse! A horse! My kingdom for a horse!"

ANSWER: **Richard III**

014-12-85-07114

BONUS: What Chilean poet wrote *Canto General* (hen-er-AHL) and *Twenty Love Poems and a Song of Despair*?

ANSWER: Pablo **Neruda** [or Neftali Ricardo **Reyes** Basoalto]

014-12-85-0710-1

15. An orbit with this shape requires a velocity of square root of 2 mu over r and is called an escape orbit. These shapes have eccentricity of one. This figure is defined as the locus of points equidistant from a focus and a directrix. When ignoring air resistance, this is the shape of the path of a projectile. When written as a function of x, the formula x equals negative b over two a gives the axis of symmetry for these figures. For 15 points, name this shape, an example of which is the graph of y equals x squared.

ANSWER: **parabola**

131-12-85-07115

BONUS: What Muslim dynasty ruled India for 200 years, starting in 1526 under Babur and reaching its greatest height under Akbar?

ANSWER: **Mughal** Dynasty

023-12-85-0710-1

16. Cadmus was forced to serve this god for eight years after killing a dragon. This god was wounded by Diomedes during the Trojan War. He was accompanied by Phobos and Deimos, who represent Fear and Terror. He was trapped in a golden net by Hephaestus while sleeping with Aphrodite. He is the Greek analog of the Roman god Mars. For 15 points, name this son of Zeus and Hera, the Greek god of war.

ANSWER: **Ares**

015-12-85-07116

BONUS: What national park, located mostly in Kentucky's Edmonson County, is named for the world's longest cave system?

ANSWER: **Mammoth Cave** National Park

019-12-85-0710-1

17. In one scene, this character is recognized by a scar on his thigh that he received during a boar hunt. While disguised, he is shown hospitality by the loyal swineherd Eumaeus (yoo-MAY-us). He uses the herb moly to subdue one opponent, and he is forced to live on Ogygia (oh-GIH-jee-uh) for several years with the nymph Calypso. Earlier, this character blinds the Cyclops Polyphemus (pahl-ee-FEE-mus), instigating Poseidon to attempt to stop him from returning home to Ithaca. For 15 points, name this title character of an epic poem by Homer.

ANSWER: **Odysseus**

014-12-85-07117

BONUS: What day of the week is known as "srehda" in Russian, "Re've'ee," in Hebrew, and "Mercoledì" in Italian?

ANSWER: **Wednesday**

019-12-85-0710-1

18. In one system, these files contain an ImageBase field along with a Sections Table. On a different platform, these files contain dot data and dot text sections. Types of these files include Mach-O and ELF. Dynamic linking allows these files to use shared libraries, such as a DLL. These files are created by a compiler. The headers of these files usually indicate the architecture platform on which they can be used. For 15 points, name these files containing instructions that can be run on a computer.

ANSWER: **executable** [or **exe**; or **programs**]

001-12-85-07118

BONUS: The failure of the POWERGRID corporation's Northern Region Grid in July 2012 led to the world's largest ever blackout in what country?

ANSWER: **India**

030-12-85-0710-1

19. In 2005, this man negotiated with Coca-Cola and Pepsi to remove high-calorie soft drinks from elementary schools, and he worked with George H.W. Bush in relief efforts after Hurricane Katrina. During the UN General Assembly, Barack Obama and Mitt Romney both attended the annual meeting of this man's Global Initiative. He gave the speech nominating Barack Obama at the 2012 DNC. For 15 points, name this philanthropist who served as the 42nd president of the United States.

ANSWER: William Jefferson **Clinton**

080-12-85-07119

BONUS: Benedict Cumberbatch stars as the title nicotine patch-wearing character on what British television series that also includes Detective Inspector Lestrade?

ANSWER: **Sherlock** [do not accept or prompt on "Sherlock Holmes"]

030-12-85-0710-1

20. The "a prime" term is added to this quantity in the van der Waals equation. The solubility of a gas in liquid is proportional to this quantity for the gas according to Henry's Law. The triple point is usually shown on a diagram plotting temperature against this quantity for a substance. For 15 points, name this physical quantity which is measured by a barometer in millimeters of mercury or Pascals.

ANSWER: **pressure** [accept more specific answers]

190-12-85-07120

BONUS: This is a 20-second calculation question. How many ways can you arrange 4 people in 3 chairs?

ANSWER: **24** [or **4 factorial**]

197-12-85-0710-1

21. The highest known naturally occurring concentration of this substance is in the Kakadu plum. One enzyme needed to synthesize this compound, L-GULO, is a pseudogene in humans but still active in bats. This substance is an electron donor for the enzyme dopamine beta hydroxylase. This compound is necessary for the hydroxylation of proline residues in collagen, and deficiency in this vitamin causes a disease in which ones gums bleed, called scurvy. For 15 points, name this vitamin present in citrus fruits.

ANSWER: Vitamin **C** [or **ascorbate** or **ascorbic acid** before mention]

048-12-85-07121

BONUS: Antonio Vivaldi composed what set of programmatic violin concerti representing various times of the year?

ANSWER: *The **Four Seasons*** [or *Le **Quattro Stagioni***]

014-12-85-0710-1

22. This region's Lark Quarry contains thousands of fossilized footprints from a dinosaur stampede. This region is home to the largest population of feral camels in the world, which were imported from Afghanistan. The world's first comprehensive air ambulance program, the "flying doctor" service, was created to service its inhabitants. Its "Red Centre" is home to a monument known to indigenous inhabitants as Uluru, Ayer's Rock. Dingoes and kangaroos inhabit, for 15 points, what thinly-populated region in the interior of Australia?

ANSWER: the Australian **Outback** [or Queensland before "camels" is read; prompt on Australia]

080-12-85-07122

BONUS: Name the writer who described Clyde Griffith's murder of Roberta Alden and Caroline Meeber's trip to Chicago in his novels *An American Tragedy* and *Sister Carrie*.

ANSWER: Theodore **Dreiser**

192-12-85-0710-1

23. This author created a magician who realizes he is the dream of another when he walks unhurt into a wall of flame. Another character created by this author lives in a universe of hexagonal rooms containing 410-page books. This author of "The Circular Ruins" and "The Library of Babel" also wrote about the shooting of sinologist Stephen Albert by the German spy Yu Tsun. For 15 points, name this Argentinean author of *Ficciones*, which contains his story "The Garden of Forking Paths."

ANSWER: Jorge Luis **Borges** (HOR-hay loo-EES BOR-hays)

014-12-85-07123

BONUS: This is 20-second calculation question. What is the probability that a randomly selected positive integer less than or equal to 1000 is divisible by two and four, but not eight?

ANSWER: **1/8** [or **0.125**; or **12.5 percent**]

190-12-85-0710-1

24. In Mandarin Chinese, this item is called a "xiangjiao" (shee-ONG-JOW). The Arabic word for this item is "moza," which inspired its neo-Latin scientific name. Another Arabic word, for "finger," is a possible source of this item's English name. Though this English word has an identical cognate in Spanish, many Mexican speakers refer to the sweet varieties as "plátanos" (PLAH-tahn-os). For 15 points, identify this fruit, which Spanish and English speakers distinguish in different manners from a plantain.

ANSWER: **banana**

019-12-85-07124

BONUS: What union supported craft unionism, was founded by Samuel Gompers, and merged with a rival union in 1952?

ANSWER: **AFL** [or **American Federation of Labor**; do not accept or prompt on "AFL-CIO" or "American Federation of Labor-Congress of Industrial Organizations"]

030-12-85-0710-1

25. One of this artist's paintings features a woman falling from a building through the clouds as well as her bloody corpse on the ground. Besides depicting the *Suicide of Dorothy Hale*, this artist depicted a woman with thorns around her neck and a monkey on her left shoulder. In another work, this painter featured two identical women with exposed hearts, with one woman holding a bloody pair of scissors. For 15 points, name this female Mexican painter and wife of Diego Rivera, who painted many bizarre self-portraits.

ANSWER: Frida **Kahlo** de Rivera [or Magdalena Carmen Frieda **Kahlo** y Calderon]

052-12-85-07125

BONUS: Auckland, Wellington, and over three quarters of the country's population are found on what island of New Zealand?

ANSWER: the **North** Island [or **Te Ika-a-Maui**]

019-12-85-0710-1



26. Like the lung, this organ is destroyed in patients with alpha-one-anti-trypsin deficiency, and backup of blood flow through this organ can cause esophageal varices and caput medusa. This organ has a lot of smooth endoplasmic reticulum and half its blood comes from the portal vein. This organ, which has four lobes, is triangular and serves to detoxify blood. For 15 points, name this abdominal organ which is damaged in people with alcoholic cirrhosis.

ANSWER: liver

048-12-85-07126

BONUS: What phylum contains bivalve oysters, gastropods, and cephalopods such as squid?

ANSWER: Mollusca [or mollusks]

104-12-85-0710-1

27. After this event, one perpetrator attempted to commit suicide by consuming a cyanide pill and jumping into a shallow river. This event took place during a military inspection near the Latin Bridge, and it was perpetrated by a member of the Black Hand. One casualty in this action was Duchess Sophie. After this event, several European powers mobilized their armies. For 15 points, identify this incident perpetrated by Gavrilo Princip that ultimately led to World War I.

ANSWER: assassination of Archduke Franz Ferdinand [accept equivalents for "assassination"; accept additional information mentioning Duchess Sophie]

189-12-85-07127