



1. Leaders of this event met at the Parkison's Ferry convention and included a former leader of the Regulators, Herman Husband. The federal troops that responded to this event were nicknamed, either for their tendency to fall apart under pressure or for their habit of raiding local farmers' fields, as the Watermelon Army, and were commanded by Light Horse Harry Lee. For 10 points, name this 1794 event in which western Pennsylvanians refused to pay an excise tax on liquor.

ANSWER: Whiskey Rebellion

019-13-74-05101

2. Enzymes that break down this compound are inhibited by clavulanic acid. The *mecA* gene encodes a mutant version of this substance's namesake binding protein that prevents the action of this substance. It inhibits the DD-transpeptidase that crosslinks D-amino acids in peptidoglycan (PEP-tid-oh-GLEYE-can). This beta-lactam compound inhibits the formation of bacterial cell walls. For 10 points, name this substance originally found in a dish of mold by Alexander Fleming, an early antibiotic.

ANSWER: penicillin

048-13-74-05102

3. Some of the people who agreed to perform this action hid in Judges Cave after fleeing to Connecticut. The Indemnity and Oblivion Act mandated that only the people who had ordered this action were to be punished. This action was performed at the Banqueting House of Whitehall on January 30, 1649, after a week-long trial on charges of conspiring with Scots to invade England and causing the English Civil War. For 10 points, identify this act of regicide, which led to Oliver Cromwell forming the Protectorate.

ANSWER: execution of Charles I [or synonyms for "execution" including killing or beheading; prompt on execution of Charles or other partial answers]

019-13-74-05103

4. The "checkerboard" version of this procedure is used to generate standard curves for an ELISA assay. Potassium permanganate is used in a redox version of this procedure used to find the iron content of a sample. When applied to a polyprotic sample, this procedure produces a curve with multiple inflection points. For 10 points, name this procedure, that most often uses an acid-base reaction to determine the amount of analyte in a solution by dripping in a standard solution.

ANSWER: titration

048-13-74-05104

5. The Aarne-Thompson index was created to classify this type of work, which Angela Carter updated in her short story collection *The Bloody Chamber*. Bruno Bettelheim applied Freudian psychoanalysis in his readings of these works. Charles Perrault wrote several of the best-known works in this genre, including "Bluebeard." Other works of this type include "The Emperor's New Clothes" and "Rapunzel." For 10 points, name this genre of story written by Hans Christian Andersen and collected by the Brothers Grimm.

ANSWER: fairy tales [or folk tales]

080-13-74-05105

6. This action is done by a well-known quantum algorithm that applies to databases, Grover's algorithm. When doing this action to a graph, a stack or queue can be used, respectively, in the depth-first and breadth-first varieties. The binary type of these algorithms can only be performed on a list that is sorted. "Engines" named for this action are designed to retrieve information from the Internet. For 10 points, identify this action that involves attempting to find a particular value in a list.

ANSWER: **search** algorithms [or word forms]

201-13-74-05106

7. In this book, Spode jokingly refers to Shreve as the husband of his roommate. An Italian immigrant named Julio believes that one character in this novel is attempting to kidnap his little sister. One character in this novel commits suicide by jumping into the Charles River while attending Harvard. The mentally retarded Benjy narrates its first section. For 10 points, name this William Faulkner novel, the second section of which is narrated by Quentin Compson.

ANSWER: *The **Sound and the Fury***

030-13-74-05107

8. These phenomena can be characterized by discontinuities in the derivative of the free energy, and infinite-order ones break no symmetries. An equation important to understanding these phenomena finds the slope of the coexistence curve and is named for Clausius and Clapeyron. First-order ones are characterized by latent heats; those include deposition and sublimation. For 10 points, name these phenomena that include evaporation and condensation, in which matter changes form.

ANSWER: **phase transitions** [or **phase changes**; or **phase transformations**]

048-13-74-05108

9. One character in this novel travels around the country with a man thirty years younger than her named Germaine. In this novel, Adam receives ritual scars before marrying Tashi, an event relayed by Nettie, the protagonist's sister. Its first page details the narrator's rape by a man she believes to be her father. Its protagonist is given up in marriage to Albert, a former lover of Shug Avery. For 10 points, name this novel, primarily composed of letters to God from Celie, by Alice Walker.

ANSWER: *The **Color Purple***

192-13-74-05109

10. All practicing members of this religion take on a name meaning either "princess" or "lion." Members of this religion undergo the "amrit sanskar" ritual to become a member of its order of adult believers. This religion's last leader was Gobind Singh, who decreed that it would thereafter be led by its sacred text, the Granth, rather than human gurus. This religion dominates India's Punjab region and was founded by Guru Nanak. For 10 points, name this monotheistic faith which draws on both Hinduism and Islam.

ANSWER: **Sikhism**

019-13-74-05110

11. The runner-up in the Democratic primary for this state's 2012 governor's election was Bob Etheridge, who had previously been accused of accosting Republican activists while serving in Congress. This state became an open race when incumbent Democrat Bev Perdue declined to run for re-election. Democrat Walter Dalton lost in, for 10 points, what state, which elected Republican Pat McCrory as its new governor following McCrory's campaign to bring the NASCAR Hall of Fame to Charlotte?

ANSWER: **North Carolina**

019-13-74-05111

12. These numbers can be represented with phasors. De Moivre's identity is used to exponentiate these numbers. They can be graphed on a plane where the distance from the origins represents the magnitude of the number, which can be obtained by multiplying one of these numbers by its conjugate. If the quadratic formula is used when the discriminant is less than zero, they are the output, and they always occur in pairs as roots of polynomials. For 10 points, name these numbers which consist of a real and an imaginary part.
ANSWER: **complex** numbers [prompt on **imaginary** numbers until it is read]

190-13-74-05112

13. This city was defended by Dan Hunter during the Devil's Winter Siege. Its boroughs include Hob's Bay and Bakerline. A rough neighborhood in this city, Suicide Slum, is the home of John Henry Irons. Morgan Edge controls crime in this city, whose major businesses include Galaxy Communications, STAR Labs, the *Daily Planet*, and LexCorp. For 10 points, identify this fictional city, the home of Perry White, Jimmy Olsen, Lois Lane, and Clark Kent, where most Superman stories take place.

ANSWER: **Metropolis** [not definitively located in any state, but placed in New York, Delaware, or Kansas in various sources, so accept any of those if additionally given]

019-13-74-05113

14. This ruler's court is the subject of *Bring Up the Bodies* and *Wolf Hall*, two novels of a projected trilogy by Hilary Mantel. Several characters are played by the Common Man at this man's court in Robert Bolt's *A Man For All Seasons*. This subject of Shakespeare's last history play is thought to have written a poem beginning "Alas, my love, ye do me wrong." For 10 points, name this king who apocryphally wrote the lyrics to "Greensleeves" for his lover, Anne Boleyn.

ANSWER: **Henry VIII**

080-13-74-05114

15. This city is regarded as the birthplace of the National Guard. It was the location of the New World's first Congregationalist church, shortly after it was founded by Roger Conant. Judges William Stoughton, Samuel Sewall, and John Hathorne imprisoned 150 people in this city and executed twenty after tales from the slave Tituba spread in 1692. For 10 points, name this Massachusetts city, where a hysteria over supposed witchcraft occurred.

ANSWER: **Salem**

019-13-74-05115



1A. In December 2012, Typhoon Bopha killed 450 people in what country, prompting President Benigno Aquino to declare a "national calamity?"

ANSWER: Republic of the **Philippines** [or Republika ng **Pilipinas**]

1B. What forms of nouns, such as nominative, dative, or accusative, are made via declension in languages such as German, Greek, and Latin?

ANSWER: **cases** [or **inflections**]

2A. What BCS game saw Oklahoma State defeat Stanford in overtime in 2012, and pitted Kansas State against Oregon in 2013?

ANSWER: Tostitos **Fiesta** Bowl

2B. Name the eclectic French intellectual who philosophized about power dynamics in modern society through outwardly historical books such as *Madness and Civilization* and *The History of Sexuality*.

ANSWER: Michel **Foucault**

3A. What composer based his *Lieutenant Kije* (kee-JAY) *Suite* on an Aleksandr Faintsimmer film and also wrote *Peter and the Wolf*?

ANSWER: Sergei Sergeyevich **Prokofiev**

3B. What French literary term refers to the "untying" that occurs at the conclusion of a literary work?

ANSWER: **denouement**

4A. Name the Canadian province that is home to the scenic Banff National Park, as well as the major cities of Calgary and Edmonton.

ANSWER: **Alberta**

4B. *Nurse Jackie*, *Dexter*, and *Homeland* are broadcast on what premium cable channel?

ANSWER: **Showtime**

5A. This is a 20-second calculation question. On a number line, there is an open circle at $x = 5$ and the part of the line to the right of the circle is shaded. What is the inequality graphed on the number line?

ANSWER: **x is strictly greater than five** [or **$x > 5$** ; do not accept "x is greater than or equal to five"]

5B. This is a 20-second calculation question. What is the range of the arccosine function?

ANSWER: **0 to pi** inclusive [or **[0,pi]**]

6A. What diagram that contains the "main sequence" plots stars using two axes: luminosity, a stand-in for stellar brightness, and temperature, a stand-in for stellar color?

ANSWER: **HR** diagram [or **Hertzsprung-Russell** diagram]

6B. What weak non-covalent interactions are responsible for holding water molecules together and for base-pairing in DNA?

ANSWER: **hydrogen** bond

7A. Name the Hindu god who is fated to dance the world to destruction, but is also depicted with a blue throat because he swallowed all the poison produced by the churning of the ocean.

ANSWER: **Shiva**

7B. What contemporary of Isaac Newton used a microscope to discover plant cells and devised a formula for the restoring force of springs?

ANSWER: Robert **Hooke**

8A. This is a 30-second calculation question. A game is designed to give out a prize ten percent of the time. What is the standard deviation of the binomial distribution representing the number of prizes won in a random sample of one hundred plays?

ANSWER: **3**

8B. This is a 30-second calculation question. A kite has diagonals of lengths 21 and 24 units. All four sides of the kite have whole number lengths. What is the perimeter of the kite?

ANSWER: **66** units

9A. Which emperor came to power with the help of Empress Plotina, Trajan's widow, and marked Roman Britain's northern boundary with a wall?

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

9B. What Quechua (KECH-oo-uh)-speaking empire surrendered to Francisco Pizarro's Spanish army while ruled by Atahualpa (ah-tah-WAL-puh)?

ANSWER: **Incan** Empire [or **Tawantinsuyu**]

10A. What member of the Generation of '27 wrote about a woman who desperately wants a child in *Yerma* and about the marriage of The Groom and The Bride in *Blood Wedding*?

ANSWER: Federico Garcia **Lorca**

10B. Which American war included Operation Rolling Thunder and the evacuation of Saigon?

ANSWER: **Vietnam** War



1. This state was predicted by a set of quantum mechanical statistics that differs from Fermi-Dirac statistics. This state is created by taking a collection of particles with integer spin and forcing them to occupy the lowest energy level. The first one was created by Cornell and Wieman, who used Doppler cooling on a collection of rubidium atoms. for 10 points, name this ultra-cold state of degenerate matter named for two physicists.

ANSWER: Bose-Einstein condensates [or BECs]

048-13-74-05117

2. In this novel, an updating of a children's story by R. M. Balantyne, a dead parachutist falls onto a mountain and is misidentified as a "creature." Its other characters include a pair of twins whose names are combined into one word, Samneric. In this novel, Roger looses a boulder that simultaneously destroys a conch shell and Piggy, and Ralph engages in a power struggle with Jack. 10 points, name this William Golding novel about children who build a dystopian society on a deserted island.

ANSWER: Lord of the Flies

080-13-74-05118

3. A variable one of these can be created by using only two terminals on a potentiometer. Four of these devices in a square conformation are used to create a Wheatstone bridge. They are often found with capacitors or inductors in AC circuits. These devices add in series. The voltage drop across one of these elements can be calculated using Ohm's law. For 10 points, name these circuit elements represented by a zig-zag line, whose namesake characteristic is measured in ohms.

ANSWER: resistor

048-13-74-05119

4. In a dream poem by this author, an eagle snatches him up from a glass temple of Venus and takes him to the "House of Fame." He wrote the first attested work treating St. Valentine's Day as a day for lovers, "The Parliament of Fowls." He wrote, "Whan that Aprill with his shoures soote," (SHA-wurs SUH-tuh) to begin the "General Prologue" to his major work, which includes stories told by the Wife of Bath and the Knight. For 10 points, name this medieval English poet of *The Canterbury Tales*.

ANSWER: Geoffrey Chaucer

080-13-74-05120

5. One material composed of this element was first isolated by Geim and Novoselov, who used the "Scotch tape" method. Dolomite belongs to a class of minerals named for this element. An isotope of this element that has a half-life of about five thousand seven hundred and thirty years is commonly used in radioactive dating. One allotrope of this element is used in pencils, while another is a ten on the Mohs Hardness scale. For 10 points, name this element that constitutes graphite and diamonds.

ANSWER: carbon [or C]

149-13-74-05121

6. In one play, this character dons a mask to rob four thieves along with Poins. Later, he wins a single combat against Hotspur at Shrewsbury. In his own play, this character cries "Once more unto the breach, dear friends!" during one battle and addresses his company as "we few, we happy few, we band of brothers" on St. Crispin's Day. For 10 points, name this irresponsible prince who pals around with Falstaff in *Henry IV, Part I* but goes on to win the Battle of Agincourt.

ANSWER: Prince **Hal** [or Prince **Henry**; or **Henry V**]

080-13-74-05122

7. This painter made the pro-republican scene *The Tragedy of Lucretia* to protest the return of the Medici family, a few years after burning his own works under the influence of the Savonarola government. One of his paintings depicts Zephyr abducting Chloris from an orange grove, and another shows a decorated pink blanket about to be thrown over a woman riding a seashell. For 10 points, name this painter of *Primavera* and *The Birth of Venus*.

ANSWER: Sandro **Boticelli** [or Alessandro di Mariano **Filipepi**]

019-13-74-05123

8. This desert is the only remaining home of an endangered wild donkey species, the khulan. In part of this desert, the "White Cave" houses proto-human artifacts up to seven hundred thousand years old. The Mogao Caves here hold a cache of Silk Road art. The southern portion of this desert comprises the Alxa (AL-shuh) Plateau, and it is found south of the Altai Mountains. For 10 points, name this desert of northern China and southern Mongolia.

ANSWER: **Gobi** desert

019-13-74-05124

9. Vincent van Gogh's *The Courtesan* displays the painter's affinity for artwork from this country. An artist from this country created the *Ten Famous Places in the Eastern Capital* series, in the same genre as the man from this country who depicted a "great wave" in one of its harbors, and "thirty-six views" of a prominent mountain here. For 10 points, name this country where woodblock printing, or *ukiyo-e*, depicted landmarks such as Kanagawa and Mount Fuji.

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

019-13-74-05125

10. The ancient academic center of Heliopolis has been completely subsumed by this city, which continues to provide religious training at the prestigious Al-Azhar University. This city was given a new name meaning "The Victorious" by the Fatimids after the conquering of the former Fustat. The Arab League's headquarters overlooks a plaza in this city named for "liberation," Tahrir Square, where 2011 protests were focused. For 10 points, name this largest city in Africa, the Arab world, and Egypt.

ANSWER: **Cairo** [or Al-**Qahirah**; or **Masr**]

019-13-74-05126

11. In 2001, Charles Yates rediscovered a lost march by this composer, a piece honoring Alessandro Volta entitled "Electric Shock." In an opera by this composer, a character explains herself with the aria "In this palace," and Prince Calaf notes that "none shall sleep" in "Nessun dorma." This composer wrote that opera about a Chinese princess, who gives three riddles to suitors and beheads those who cannot answer. For 10 points, name this composer of *Turandot* and *Madame Butterfly*.

ANSWER: Giacomo Antonio Domenico Michele Secondo Maria **Puccini**

019-13-74-05127

12. This kingdom's cell walls can be inhibited from forming by echinocandins (ek-EYE-no-CAN-dinz). Mating in these organisms requires the formation of a heterokaryon (het-er-o-KAR-ee-on), followed by fusion of nuclei to form a diploid zygote. Members of this kingdom have bodies consisting of filaments called hyphae, whose cell walls contain chitin (KITE-in). Organisms of this kingdom can form a symbiote with plant roots, called a mycorrhizae. For 10 points, name this kingdom that includes mushrooms.

ANSWER: **fungi** [or **fungus**]

048-13-74-05128

13. One character in this story complains he was not there when Jesus raised the dead because “if I had been there I would of known and I wouldn't be like I am now.” This story's protagonist remembers, right before a car accident, that her old home was in Tennessee, not Georgia. This story ends with the murder of the Grandmother and her entire family by the criminal known as the Misfit. For 10 points, name this short story by Flannery O'Connor.

ANSWER: "A **Good Man Is Hard to Find**"

121-13-74-05129

14. This organism can cause violin-string adhesions to the liver in FitzHugh-Curtis syndrome. This organism cycles through elementary body and reticular body phases. This organism also causes a form of conjunctivitis with inclusion bodies in the newborn children of infected patients. This bacterium, like Neisseria, can cause pelvic inflammatory disease and urethritis. For 10 points, name this causative agent of the most common sexually transmitted disease.

ANSWER: **chlamydia** trachomatis [or **C. trachomatis**]

048-13-74-05130

15. This American colony initially prohibited both liquor and slavery. During a conflict over this colony's Debatable Land, one side defended St. Simons Island by building Fort Frederica and winning the Battle of Bloody Marsh. This colony sent no delegates to the First Continental Congress. In the Revolutionary War, a major port in this colony was where Casimir Pulaski died. For 10 points, name this southernmost of the original thirteen colonies, which began as a debtors' haven run by James Oglethorpe.

ANSWER: **Georgia**

019-13-74-05131



1. This man wrote in opposition to Walter Lipmann's theory of journalism, advocating universal participation in politics in his book *The Public and Its Problems*. He was the head judge at a celebrated mock trial of Leon Trotsky. He coined the term "instrumentalism" to refer to his belief that participation is the only proper form of learning, as found in his book *Democracy and Education*. For 10 points, name this American philosopher, who succeeded William James as the leading pragmatist.

ANSWER: John Dewey

019-13-74-05132

2. This author admitted to inventing details on the life of Fray Antonio in his work *A Chronicle of the Conquest of Granada*. His essay "English Writers in America" appears in one of his short story collections. He described a quilting frolic held at the home of Katrina Van Tassel, where Brom Bones tells a story of a spectral Hessian soldier that later supposedly haunts Ichabod Crane. For 10 points, name this author of "Rip Van Winkle" and "The Legend of Sleepy Hollow."

ANSWER: Washington Irving

030-13-74-05133

3. Movement of this material creates a landform called kipukas. A monolith made of it called a "spine" appeared in the Caribbean and was called "Pelee's Tower." When this material emerges from an underwater vent, it can form "pillow" types of it. At a location named Erta Ale in Ethiopia, this material forms a lake in a caldera. Types of it that flow are called 'a'a and pahoehoe. For 10 points, name this molten rock, which as opposed to magma, appears above the surface when expelled by a volcano.

ANSWER: lava [prompt on igneous rock]

052-13-74-05134

4. The n equals one case of the Newton-Cotes formula corresponds to using this shape. That method is equivalent to averaging the left-hand and right-hand Riemann sums, and uses this shape to approximate the area under a curve. Like a triangle, the area of one of these shapes can be calculated as the midsegment times the height. These shapes have adjacent angles which sum to 180 degrees. For 10 points, name these quadrilaterals with one pair of parallel sides.

ANSWER: trapezoids

190-13-74-05135

5. This leader willingly gave up information about Korean Air Lines Flight 007 in a move that signaled greater openness. His early policies took elements of "shock therapy" and were called "economic genocide" by his vice president. He illegally dissolved parliament in October 1993 and raided a government building with tanks. He was succeeded by Vladimir Putin. For 10 points, name this man who served as the first President of the Russian Federation, succeeding Mikhail Gorbachev.

ANSWER: Boris Nikolayevich Yeltsin

192-13-74-05136

This is a calculation question. The odds of getting a certain kind of insert in a pack of baseball cards are 5:1 against. What is the probability that any given pack contains an insert of that kind? Express your answer as a simple fraction.

ANSWER: 1/6

What tallest peak in the contiguous United States is partially located in Sequoia National Park in California?

ANSWER: Mount **Whitney**