



CATEGORY ROUND

American Literature: Fictional Women

Team A: What beloved sister in *Little Women* dies young of scarlet fever?

ANSWER: **Beth** March [or **Elizabeth**]

Team B: What author created such fictional female characters as Topsy and Little Eva St. Clare?

ANSWER: Harriet Beecher **Stowe** [or **Beecher**]

Tossup: A woman with this first name dies of malaria contracted soon after she sneaks off to the Coliseum to meet Mr. Giovanelli, upsetting Frederick Winterbourne. Another woman with this first name claims that the best thing that a girl can be in this world is a "beautiful little fool." The latter woman sobs while admiring the beauty of several fancy shirts, kills Myrtle Wilson by running her over with her husband's car, and is symbolized by the green light at the end of her dock. Give this first name of Tom Buchanan's wife, Jay Gatsby's love interest.

ANSWER: **Daisy** [or **Daisy** Miller; or **Daisy** Buchanan]

Mathematics: Abstract and Elementary Algebra

Team B: This is a 20-second calculation question. What is the inverse of the function "y equals one-half times the natural log of x"?

ANSWER: $y = e^{2x}$ [or y equals **e to the 2x**; or y equals **e** raised to the power of **2** times **x**]

Team A: This is a 20-second calculation question. If $f(x)$ ["f of x"] equals $4x+3$ and $g(x)$ equals $2x^2 - 5$, find f composed with g ; that is, find f of g of x .

ANSWER: **$8x^2 - 17$**

Tossup: A branch of mathematics that deals with these things was developed by Georg Cantor. The number of elements in one of these is its cardinality. One of them that contains all those that are not members of themselves leads to a contradiction in Russell's paradox. A backslash is used to represent the complement of two of these things while an "O" with a slash through it represents the empty one. Name these mathematical collections that can be subject to union or intersection.

ANSWER: **sets**

World History: Asian Leaders

Team A: Which first president of Indonesia was overthrown by the 30th of September movement?

ANSWER: **Sukarno** [or Kusno **Sosrodihardjo**; do not accept "Suharto"]

Team B: Name the dictator who instituted the “Year Zero” policy and referred to himself as “Brother Number One.”

ANSWER: Pol **Pot** [or Soloth **Sar**]

Tossup: This man was photographed by Gaetano Faillace (fye-LAH-chay) standing next to an enemy general. He was unsuccessfully targeted in the Kyujo Incident, and his surrender message referenced a "new and most cruel" weapon with "incalculable" damage. This man gave the "Jewel Voice Broadcast" to signify his country's unconditional surrender, and was then forced to renounce his divinity by Douglas MacArthur. This ruler was never tried for war crimes, unlike his military leaders such as Hideki Tojo. Name this Emperor of Japan during World War II.

ANSWER: **Hirohito** [or the **Showa** Emperor]

Fine Arts: Jazz Instruments

Team B: Charles Mingus was an accomplished player of what instrument in the violin family?

ANSWER: double **bass** [or upright **bass**; or **bass** fiddle; or string **bass**; or **bass** violin; or doghouse **bass**; or contrab**ass**; or **bass** viol; or stand-up **bass**; or **bull fiddle**; or really anything with the word **bass** in it]

Team A: Charlie Christian and Django Reinhardt played what instrument?

ANSWER: jazz **guitar**

Tossup: Marian McPartland played this instrument on a radio show named for it until 2011. A performer of this instrument composed the soundtrack to the movie *Anatomy of a Murder*, and worked with the same composer who wrote his band's theme song, “Take the A Train.” Bill Evans played this instrument for the Miles Davis sextet. “Straight, No Chaser” is a song for this instrument. Name this percussion instrument played by Duke Ellington.

ANSWER: **piano**

Life Sciences: Proteins

Team A: What misfolded proteins are responsible for causing kuru and mad cow disease?

ANSWER: **prions**

Team B: What proteins act as biological catalysts?

ANSWER: **enzymes**

Tossup: The removal of these proteins by apheresis is the treatment for Guillain–Barré (GHEE-yahn BAR-ay) syndrome. These proteins are the subject of the Kabat numbering scheme, and their function mostly depends on their CDR3 regions. These proteins are separated into isotypes by their constant regions, consist of two heavy and two light chains, and get their variable regions from VDJ recombination. These proteins are secreted by plasma cells. Name these Y-shaped proteins that are secreted by B-cells and which bind to antigens.

ANSWER: **antibodies** [or **immunoglobulins**]

World Literature: Plays

Team B: What playwright wrote *The Master Builder*?

ANSWER: Henrik **Ibsen**

Team A: In what Ibsen play does the title character shoot herself after being blackmailed by Judge Brack?

ANSWER: **Hedda Gabler**

Tossup: In this play, not by Ibsen, a character is told to find a Spanish costume in order to court the sister of Kastril, while another is blindfolded and humiliated in order to meet the "Queen of Fairy." The protagonist of this play deals with such characters as the tobacconist Drugger, the wealthy Sir Epicure Mammon, and the clerk Dapper, who wants to summon a familiar. In this play, Lovewit's butler Jeremy poses as Captain Face to join the con artist Subtle. Name this Ben Jonson play featuring characters who desire the philosopher's stone.

ANSWER: *The* **Alchemist**

US Government/Economics: Economic Quantities

Team A: Inflation separates the "real" from the "nominal" version of what quantity commonly reduced in expansionary policy?

ANSWER: **interest rate** [prompt on partial answer]

Team B: What quantity is computed by adding consumer spending, investment, excess of exports over imports, and government spending?

ANSWER: **GDP** [or **gross domestic product**]

Tossup: In perfect competition, the curve for this quantity is the section of the marginal cost curve found above the minimum average variable cost. In the long run, the aggregate form of this quantity is perfectly vertical. A "shock" named for this quantity quickly moves the equilibrium price, as in the 1973 oil embargo. This quantity goes up with price in a traditional diagram. Name this quantity which forms the equilibrium point where it meets demand.

ANSWER: **supply**

Physical Sciences: Light

Team B: What type of scattering occurs when light hits a particle smaller than its wavelength? It explains why the sky is blue.

ANSWER: **Rayleigh** scattering

Team A: What phenomenon occurs due to the quantized nature of light, and sees metals emit electrons when hit by sufficiently energetic beams?

ANSWER: **photoelectric** effect

Tossup: One description of this phenomenon uses Green's theorem to solve the wave equation at a point based on its solutions at all points on a surface around the point; that is Kirchoff's formulation. This phenomenon occurring at a knife edge is the subject of Huygens principle, which in another system creates the Airy disk. It can occur through gratings, single slits, or circular apertures. Name this phenomenon in which light bends around an obstacle.

ANSWER: **diffraction**

World Geography: Polluted Cities

Team A: This capital city beat out Beijing in a 2014 study's comparison of air pollution. The annual Republic Day parade takes place on this city's Rajpath.

ANSWER: **New Delhi** [do not accept or prompt on "Delhi"]

Team B: This capital city was named the "most dangerous city in the world for children" in 1999 by the World Resources Institute because of its air pollution, and is home to the Plaza of the Three Cultures.

ANSWER: **Mexico City**

Tossup: This city's valley causes pollution problems for the Guaire (goo-ah-EE-ray) River, and it spills over the boundary of Miranda state. The Parque Central area of this city is taking over municipal functions from the surroundings of the Miraflores (mee-rah-FLOR-ehs) Palace. This city's National Pantheon contains the tomb of Simon Bolivar. Name this city which still leads Valencia and Maracaibo as the population and economic center of Venezuela.

ANSWER: **Caracas**

American History: Historical Enemies

Team B: What political family along the West Virginia-Kentucky border was led by "Devil Anse" while they engaged in a longtime feud with the family of "Ole Ran'l?"

ANSWER: **Hatfields**

Team A: Al Capone ordered what 1929 mass slaying against rival Bugs Moran's organization?

ANSWER: **Saint Valentine's Day Massacre**

Tossup: This man led armed warriors to confront an opposing general at the general's Indiana home of Grouseland. He declined a commission from Henry Procter honoring him for his efforts in the siege of Detroit. Future Vice-President Richard Johnson claimed to have killed this man at the Battle of the Thames during the War of 1812. His brother was Tenskwatawa (TENS-kwuh-TAH-wah), otherwise known as the Prophet. Name this Shawnee leader who was defeated by William Henry Harrison at the Battle of Tippecanoe.

ANSWER: **Tecumseh**

Alphabet Round-Letter F

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Alphabet Round-Letter F ANSWERS

1. Fidelio
2. The Four Horsemen of the Apocalypse
3. Federalist Party
4. focus
5. Fort Worth
6. Saint Francis of Assisi
7. Franz Ferdinand [or Francis Ferdinand]
8. Ella Fitzgerald
9. flagellants
10. Ford Madox Ford
11. Henry Fuseli
12. Henry Fielding
13. Federal Bureau of Investigation [or FBI]
14. Freya [or Freyja; do not accept "Frey" or "Freyr"]
15. fumaroles
16. fixed cost
17. Fractal
18. Farsi
19. fool
20. Sir John Falstaff

FINAL ROUND

1. This country was the home of a poet who wrote a work about a soul being unchained from the body during the night in *First Dream*. Another author from this country renewed interest in Sor Juana Ines de la Cruz with his *The Traps of Faith* and wrote an essay about about this country entitled *The Labryinth of Solitude*. One author from this country wrote *The Old Gringo*, a fictionalized account of Ambrose Bierce's trip to this country with the army of Pancho Villa. Name this home country of Carlos Fuentes and Octavio Paz.

ANSWER: **Mexico**

030-14-103-08101

2. Working with one of these companies, John Jervis created the *Stourbridge Lion*. Another of these companies survived the Panic of 1873 under Jay Gould's leadership. The ICC was created to regulate prices set by these companies. Another of these companies was financed by the "Big Four," a group of philanthropists including Leland Stanford. The Union Pacific and Central Pacific were what kind of company that worked on a "transcontinental" transport system?

ANSWER: **railroad** companies [or **railway** companies]

080-14-103-08102

3. Sir Philip Sidney's *Defence of Poesy* describes the common medieval practice of predicting the future by selecting a line at random from this text. One character in this text falls behind in a footrace by slipping in some blood from an animal sacrifice, but trips another competitor to allow his friend to win. Earlier in this text, Aeolus summons a storm at the behest of Juno, who hates the main character as he is a survivor from Troy. The main character wars against Turnus after fleeing Carthage following the suicide of Dido. Name this Latin epic poem written by Virgil.

ANSWER: **Aeneid**

020-14-103-08103

4. The value for the glass transition in polymers is often found using a differential scanning variety of these devices. A sample is placed in a combustion crucible and ignited in the most common type of these devices found in labs, the bomb. A simple example of these devices can be created by nesting two styrofoam cups and capping them with a lid that has two holes, for a thermometer and stirrer. Identify these devices that are used to measure the heat of a reaction and heat capacity of materials.

ANSWER: **calorimeters**

066-14-103-08104

5. This man conducted a study in which clothing merchant Mr. Jacobs delivered items to Sharon, Massachusetts. He sent letters to people in Nebraska in the "small world" experiment, which introduced the idea of "six degrees of separation." In an earlier experiment, he ordered "teachers" to administer punishments to unseen "learners." Name this psychologist who tested people's willingness to follow authority by administering theoretically dangerous electric shocks.

ANSWER: Stanley **Milgram**

052-14-103-08105

6. While studying at Ingolstadt, this character is inspired when he sees lightning strike a tree with immense power. This character is rescued, half-frozen, by Captain Robert Walton, whose letters provide the frame narrative of the novel in which he appears. This friend of Henry Clerval is engaged to marry Elizabeth Lavenza, who is killed on their wedding night. Identify this title character of a Mary Shelley novel, a scientist who brings his namesake "monster" to life.

ANSWER: Victor **Frankenstein**

233-14-103-08106

7. This building was broken into several times by a youth known as "the boy Jones." Unlike similar locations such as Sandringham and Balmoral, it is not owned by an individual but rather the state. The Golden State Coach is located adjacent to this building at the John Nash-designed Royal Mews. During a war, a queen said she was glad this location was bombed because she could "look the East End in the face." The ceremony of "changing the Queen's Life Guard" occurs here. Name this palace in London, the residence of the British monarch.

ANSWER: **Buckingham** Palace

052-14-103-08107

8. This politician's 1971 election bid was grounded in a slogan for "eliminating poverty." She put her son in charge of an aggressive family planning program which controversially included sterilization quotas. She was killed en route to an interview with Peter Ustinov. Her authorization of Operation Blue Star, which was an attack on the Golden Temple of Amritsar, ultimately led to her assassination by her own Sikh bodyguards, after which she was succeeded by her son Rajiv. Identify this daughter of Jawaharlal (jah-WAH-hur-lol) Nehru and first female prime minister of India.

ANSWER: **Indira Priyadarshini Gandhi** [prompt on **Gandhi**]

189-14-103-08108

9. This man depicted himself surrounded by owls and bats in *The Sleep of Reason Produces Monsters*. This artist depicted a nude scene of a reclining woman, which can be found in the Prado next to his "clothed" version of the same woman. This man also painted the scene of a demonic creature consuming his offspring as a part of his *Black Paintings* series. Name this Spanish artist of *Saturn Devouring His Children* who painted the massacre of Spanish citizens by Napoleon's army in *The Third of May, 1808*.

ANSWER: Francisco **Goya**

227-14-103-08109

10. During this war, two battles were fought at St. Albans, the latter of which led to Henry VI's release from captivity. Richard Neville became known as Warwick the Kingmaker for his actions during this conflict. In its climactic clash, Richard III exclaimed, "A horse, a horse, my kingdom for a horse!" before dying at Bosworth Field. Identify these fifteenth-century English conflicts between the Houses of Lancaster and York, named for their red and white floral emblems.

ANSWER: Wars of the **Roses**

233-14-103-08110

11. If a function satisfies Laplace's (luh-PLOSS-iz) equation, then its mean value on the surface of this figure equals its value at this figure's center. The gravitational force exerted by a shell of this shape on a particle inside the shell is always zero. The constant of proportionality for moment of inertia of a hollow one of these is two-thirds, while a solid one has constant two-fifths. This is the shape of the orbital with azimuthal quantum number zero, known as the s orbital. Identify this shape which has volume four-thirds pi r-cubed.

ANSWER: **spheres** [or word forms, such as **spherical**]

233-14-103-08111

12. This man ordered the hasty construction of the Sviyazhsk (svee-ESK) fort during his campaign against Kazan. In a movie about this man, a feast changes from black and white to color when some of his bodyguards begin to dance. This subject of a 1944 Sergei Eisenstein film celebrated his conquest of Kazan by having St. Basil's Cathedral built. This ruler founded the oprichniki (op-rich-NEE-kee) after his wife Anastasia died. Name this tsar of Russia known for his extreme cruelty.

ANSWER: **Ivan the Terrible** [or **Ivan IV**; or **Ivan the Awesome**; prompt on **Ivan**]

186-14-103-08112

13. During this day, believers practice vidui (vee-doo-EE) in order to amend their yearly fate in the Book of Life. This day names a 1973 war between an Egypt-led Arab coalition and Israel, also known as the Ramadan War. Services on this holiday begin with the Kol Nidre (cole NEE-dray) prayer, and it marks the end of the High Holy Days. This day, marked by fasting and asking for God's forgiveness, falls nine days after the new year, Rosh Hashanah. Name this Jewish day of atonement.

ANSWER: **Yom Kippur**

005-14-103-08113

14. Music from this country came to international attention thanks to the score for its film *Black Orpheus*. A recording of "Desafinado" by Charlie Byrd and Stan Getz helped popularize its music in the United States. Joao Gilberto and Antonio Carlos Jobim helped develop a style of music in this country whose name roughly means "new wave." Name this home country of *bossa nova* music, whose popular song "The Girl from Ipanema" is named for a district in Rio de Janeiro.

ANSWER: **Brazil**

080-14-103-08114

15. The influence of this group increased when Peter Porter took over the House Committee on Foreign Affairs and Langdon Cheves became the chairman of the House Ways and Means Committee. John Randolph coined this term, which denoted a group of politicians from Southern and Western states. Some elements of this faction, led by Henry Clay, agitated for an invasion of Canada. Identify these Democratic-Republicans who convinced James Madison to enter a conflict with Britain in 1812.

ANSWER: **war hawks**

020-14-103-08115

16. The main character of this novel speaks to the private investigator Britten and tries to frame Jan Erlone for a crime. Bessie Mears hides for a time with the protagonist before he kills her and throws her body down an air shaft. The Communist Boris Max represents the protagonist of this novel in trial, which sentences that character to death for the murder of Mary Dalton, a young white woman. Name this novel written about Bigger Thomas by Richard Wright.

ANSWER: **Native Son**

023-14-103-08116

17. A theory that attempts to explain this phenomenon argues the substantial gelatinosa in the dorsal horn of the spinal cord contains a "gate" that controls it. Although it is not fever, drugs that suppress this phenomenon include ketobemidone (KEY-toh-bem-EH-doan) and paracetamol (PAIR-uh-CEET-uh-mall). It is caused by contact between the medial epicondyle (EH-puh-CON-dial) of the humerus and the ulnar nerve. This sense is removed by the chemicals lidocaine and novocaine, which are both anesthetics. Identify this feeling which may accompany burns or broken bones.

ANSWER: **pain** [or **nociception**; prompt on **touch**; prompt on **suffering**]

239-14-103-08117

18. In one of this author's books, he writes that he feels like a chess piece that has been told it cannot move by an opponent, and he asks whether a quick death is preferable to being trampled to death by geese. This author contrasted the happy "knight of faith" with the "knight of infinite resignation." He explored the anxiety Abraham felt when being told to sacrifice Isaac. This man used such aliases as "Johannes de Silentio" and "Hilarius Bookbinder." Name this Danish philosopher who wrote *Fear and Trembling and Either/Or*.

ANSWER: Søren Aabye **Kierkegaard** [or Johannes de **Silentio** until it is read; or Victor **Eremita**; or William **Afham**; or Frater **Taciturnus**; or Constantin **Constantius**; or Vigilus **Haufniensis**; or Nicolaus **Notabene**; or A.B.C.D E.F. **Godthaab**; or A.B.C.D.E.F. **Rosenblad**; or **Inter et Inter**; or **Procul**; or Captain **Scipio**; or **Judge William**; or **A.F.**; or Hilarius **Bookbinder** until it is read; or Johannes **Climacus**; or **H.H.**; or **Anti-Climacus**; prompt on **A**; prompt on **B**]

052-14-103-08118

19. This man supposedly dismissed the report of two Yale professors about "rocks that fell from the sky." This scientist was inspired by the Chinese to create a "Great Clock" that used a gong to signal the hour. Though not Franklin, he wrote to John Jay about interchangeable parts while ambassador to France in 1785. He ordered an expedition that documented hundreds of new species in the as-yet-unexplored Louisiana Purchase, which he made. Name this man who designed the University of Virginia campus and his home, Monticello, and also ordered the Lewis & Clark Expedition.

ANSWER: Thomas **Jefferson**

239-14-103-08119

20. This goddess pulled a handful of hair out of the chest of Brontes after he placed her on his knee. This goddess killed the giants Otus and Ephialtes by tricking them into throwing a spear at each other. This goddess sent a boar to rampage through Calydon. Actaeon was transformed into a stag after he witnessed her bathing in a stream, and Leto gave birth to this goddess on Delos with her brother. Name this Greco-Roman goddess of the moon and the twin sister of Apollo.

ANSWER: **Artemis** [or **Diana**]

227-14-103-08120

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13. **(MULTIPLE WORD ANSWER OR ABBREVIATION)** What American government agency was the employer of the Russian spy Robert Hanssen?
14. What Vanir Norse god receives half of the dead at her hall and owns the necklace Brisingamen?
15. Volcano craters often contain what vents that hydrogen sulfide or steam exhaust through?
16. What term in economics is the opposite of variable costs and includes expenses such as building rent?
17. What class of mathematical shapes were named by Benoit Mandelbrot, examples of which include snowflakes?
18. What is the alternate name for the Persian language?
19. What Shakespearean stock character is represented by Feste in *Twelfth Night*?
20. What comic relief character in several Shakespeare plays is the protagonist of *The Merry Wives of Windsor*?

Alphabet Round-Letter F

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