

Playoff Round 3

First Half

(1) **Victor Hugo attempted to get a pardon for this figure while in exile in Guernsey, stating this man's hanging would "shake the whole American democracy." In reaction to the sacking of Lawrence, this leader killed pro-slavery settlers during the (*) Pottawatomie [[pah-tuh-WAH-tuh-mee]] Massacre. This man seized a federal armory before being dislodged by Colonel Robert E. Lee. For ten points, name this abolitionist who led the raid at Harpers Ferry.**

ANSWER: John **Brown**

(bonus) During the Vietnam War, a failed attempt to win the support of the rural populace by isolating them from outside influences was known as the Strategic Hamlet Program. For ten points each,

* The Vietnam War ended with the fall of this city, today known as Ho Chi Minh City.

ANSWER: **Saigon**

* This pro-Catholic president of South Vietnam during the war was deposed in a coup led by the ARVN and was subsequently assassinated.

ANSWER: **Ngo Dinh Diem** (accept either underlined portion)

* A 1973 treaty that aimed at establishing peace and withdrawing U.S. forces from Vietnam was signed in this European city.

ANSWER: **Paris**

(2) **The real part of Euler's [[OY-lers]] formula contains this function, which is used to construct the Fourier [[fooh-ree-EH]] series of an even function. The dot product of two vectors depends on this function of the angle between them. The (*) inverse of the secant [[SEE-kant]] function is, for ten points, what trigonometric function given by a right triangle's adjacent side divided by the hypotenuse [{"high"}-PAH-teh-noos]]?**

ANSWER: **Cosine**

(bonus) The law of large numbers explains why this branch of mathematics predicts an outcome of five hundred heads when a fair coin is tossed one thousand times. For ten points each,

* Name this branch of mathematics which examines the likelihood of events such as drawing an ace from a deck of cards.

ANSWER: **Probability** Theory

* In probability theory, this quantity is the arithmetic [{"air"-ith-MEH-tik}] mean or average of the possible outcomes of an event. For rolling a fair, six-sided die, this quantity equals 3.5.

ANSWER: **Expected Value** (accept Mathematical **Expectation**; accept **First Moment**)

* The probability of two events occurring at the same time is zero if they have this relationship. Flipping both heads and tails on a single coin toss is impossible because the outcomes have this relationship.

ANSWER: **Mutually Exclusive** (accept **Mutual Exclusivity**; accept **Disjoint**)

(3) **Rebecca Clarke spent five years writing a song set to this poem, whose second stanza speaks of “distant deeps or skies.” Noting how the “stars threw down their spears,” this poem’s narrator asks a series of questions including “What dread hand? and what dread feet?” An (*) anvil and a chain are among the objects listed in this poem, which appears in *Songs of Experience*. For ten points, name this William Blake poem which focuses on an animal “burning bright.”**

ANSWER: "The **Tyger**" (accept "**Tiger, Tiger**")

(bonus) In one scene, the protagonist of this novel attacks his childhood bully with applesauce. For ten points each,

* Name this novel about the relationship between the Earnshaws and the Lintons, including the love between Catherine and Heathcliff.

ANSWER: **Wuthering Heights**

* This Victorian author and sister of Charlotte and Anne wrote *Wuthering Heights*.

ANSWER: **Emily Brontë** (prompt on "Brontë")

* This last name was used as a pseudonym by the Brontë sisters when they published under the masculine first names Currer, Ellis, and Acton.

ANSWER: **Bell**

(4) **This observance’s *kabbalat* portion can include the song "Lekha Dodi" [[leh-KHAH doh-DEE]]. A believer is *shomer* if they observe this ritual’s *melachot* [[meh-lah-KHOHT]], such as avoiding writing two or more letters. This observance ends with (*) *havdalah* and begins with the *kiddush* and the blessing of two braided loaves of *challah* [[HAH-lah]]. For ten points, name this weekly Jewish day of rest, which begins at sundown on Friday.**

ANSWER: **Shabbat** (accept **Shabbos**; accept **Sabbath**)

(bonus) A reciprocal of the Golden Rule written by Confucius was "What you do not wish for yourself, do not do to others". For ten point each,

* Sayings commonly attributed to Confucius were compiled in this text, sometimes referred to as the "Selected Sayings."

ANSWER: **Analects** of Confucius (accept **Lunyu**)

* Confucius's teachings arose during a period in Chinese history named for Spring and this other season.

ANSWER: **Autumn** (prompt on "Fall")

* The Spring and Autumn Period lasted from the 8th to the 5th centuries BC during the second half of this dynasty which came between the Shang [[SHAHNG]] and the Qin [[CHIN]].

ANSWER: **Zhou** [[ZHOH]] Dynasty

(5) **This theory was partially confirmed by an apparent change in position during a solar eclipse. According to this theory, massive objects like black holes and neutron stars cause (*) distortions of space-time.** This theory is described by a series of field equations and explains the curvature of space. For ten points, name this geometric theory of gravity formulated by Albert Einstein, which is contrasted with a "special" theory.

ANSWER: **General Relativity** (or **General** Theory of **Relativity**; accept **GR**; prompt on "relativity"; do not accept or prompt on "special relativity")

(bonus) The "tandem" form of this technique can be used to find the molecular weight of a protein. For ten points each,

* Name this analytical technique which uses a magnetic field to separate fragments of molecules based on their "m to z" ratio.

ANSWER: **Mass Spectrometry** (accept **MS**; accept **Mass Spectroscopy**)

* A typical mass-spec procedure involves ionizing a sample by bombarding it with a stream of these negatively charged subatomic particles.

ANSWER: **Electrons**

* Equally sized "M" and "M+2" peaks during mass-spec indicate the presence of this halogen [[HAL-oh-jen]] in the molecule, which is a brown liquid at room temperature.

ANSWER: **Bromine** [[BROH-meen]] (accept **Br** [[["B"- "R"]]])

(6) **Time spent on a family estate in New York inspired this artist to paint *My Shanty, Lake George*. Among the paintings in the Precisionist style created by this painter is *Radiator Building - Night, New York*. The (*) Taos Mountains inspired works by this wife of Alfred Stieglitz, who, in one painting, alternated white and blue stripes around a central cow skull. For ten points, name this artist known for her various depictions of flowers and bones.**

ANSWER: Georgia **O'Keeffe**

(bonus) This artist was a member of the Mexican Communist Party and was the first modern Mexican artist to be featured in the Louvre. For ten points each,

* Name this artist, known for autobiographical, magical realist works like *The Wounded Deer* and *Self-Portrait with Thorn Necklace and Hummingbird*.

ANSWER: Frida **Kahlo**

* Frida Kahlo was married to this Mexican artist, known for murals including *The History of Mexico* and *Man at the Crossroads*.

ANSWER: Diego **Rivera**

* This self-portrait by Kahlo, in which she is dressed in a medical corset with her body split open, was painted after she underwent spinal surgery.

ANSWER: *The **Broken Column*** (or *La **Columna Rota***)

(7) **The East Tamar [[TAY-MAR]] Garrison performed a ceremony at this event after a speech by Chris Patten beginning with the line, “Today is a day of celebration, not sorrow.” One party in this event was only obligated to cede the (*) New Territories. Jiang Zemin [[ZHANG ZEH-MIN]] was present at this event, as was Prince Charles, who read a farewell message from Queen Elizabeth. For ten points, name this 1997 event in which a British territory was passed over to China.**

ANSWER: **Handover** of **Hong Kong** (accept **Retrocession** of **Hong Kong**; accept descriptive answers like the **transfer** of sovereignty over **Hong Kong**)

(bonus) This man signed a truce with a European monarch following his defeat at Jaffa in 1192. For ten points each,

* Name this first sultan of Egypt who fought against Richard the Lionheart during the Third Crusade.

ANSWER: **Saladin** (accept Al-Nasir **Salah al-Din** Yusuf ibn Ayyub; accept **Salaheddin** Eyûbî)

* After serving the Fatimid caliphate, Saladin founded this Sunni dynasty, which lasted until 1340.

ANSWER: **Ayyubid** Dynasty (or **Ayyubids**; accept **Eyūbiyan**; accept al-**Ayyūbiyūn**)

* One of the capitals of the Ayyubid Dynasty was this ancient city, whose Great Mosque contains the tomb of Saladin. It is the modern-day capital of Syria.

ANSWER: **Damascus** (or **Dimašq**)

(8) **This thinker's only full-length book was his *Notes on the State of Virginia*. In a letter to the Danbury Baptist Association, this thinker described the necessity of erecting a "wall" between (*) church and state. Despite owning hundreds of slaves, this thinker wrote that "all men are created equal" in a 1776 document. For ten points, name this American founding father, the primary author of the Declaration of Independence.**

ANSWER: Thomas **Jefferson**

(bonus) In the book *The Return of Depression Economics*, this thinker claimed that both the 1990s Japanese stagnation and the Great Recession were caused by liquidity traps. For ten points each,

* Name this American economist, a current *New York Times* columnist, and a former professor at Princeton.

ANSWER: Paul **Krugman**

* In 2008, Krugman won the Nobel Prize in Economics for his work on the "new" theory of this activity. The benefits of this activity were shown by David Ricardo through comparative advantage.

ANSWER: **Trade** (accept New **Trade** Theory; accept Free **Trade**)

* In 2007, Krugman wrote a book titled *The Conscience of* [people with this political position]. This position is often contrasted with conservatism in U.S. politics.

ANSWER: **Liberalism**

Halftime

The categories are:

1. Jules Verne
2. The School of Athens
3. Genetics

Jules Verne

Regarding the works of Jules Verne, name the...

- (1) Number of days it takes Phileas Fogg to traverse the globe.

ANSWER: **Eighty** (or **Quatre-vingt**)

- (2) Celestial object traveled to by a "Space Cannon" in *From the Earth to* [this place].

ANSWER: The **Moon** (accept La **Lune**)

- (3) Novel in which Otto Lidenbrock leads a party to Iceland, finding prehistoric creatures in the title subterranean place.

ANSWER: ***Journey to the Center of the Earth*** (or ***Voyage au centre de la Terre***)

- (4) Designer and captain of the *Nautilus* in *Twenty-Thousand Leagues Under the Sea*.

ANSWER: Captain **Nemo** (accept Prince **Dakkar**)

- (5) French valet who accompanies Phileas Fogg "Around the World."

ANSWER: Jean **Passepartout** [[pahs-par-TOO]]

- (6) Sequel to *Twenty-Thousand Leagues*, set at the title locale where the *Nautilus* is docked.

ANSWER: *The **Mysterious Island*** (or *L'**Île mystérieuse***)

- (7)

ANSWER:

- (8)

ANSWER:

The School of Athens

Regarding the painting *The School of Athens*, name the...

- (1) Renaissance Italian who painted it as well as the *Sistine Madonna*.

ANSWER: **Raphael** (accept **Raffaello** Sanzio da Urbino)

- (2) Rival of that painter depicted as the brooding philosopher Heraclitus [[heh-RACK-lih-tus]].

ANSWER: **Michelangelo** (accept Michelangelo di Lodovico **Buonarroti** Simoni)

- (3) Central figure of the painting who taught Aristotle and founded the Academy.

ANSWER: **Plato**

- (4) Figure holding a globe, symbolizing his geocentric theory.

ANSWER: Claudius **Ptolemy** [[TAH-leh-mee]]

- (5) Pre-Socratic philosopher who wears a toga and is remembered as "looking for an honest man."

ANSWER: **Diogenes** [{"die"}-AH-jeh-nees] the Cynic

- (6) Painting on the opposite wall which portrays Jesus above an altar and theologians discussing the Eucharist [[YOO-kah-rist]].

ANSWER: **Disputation of the Holy Sacrament** (or *La disputa del sacramento*)

- (7)

ANSWER:

- (8)

ANSWER:

Genetics

Give the term from genetics that...

(1) Refers to a trait that is only expressed when two copies of the genes are present, in contrast with a dominant trait.

ANSWER: **Recessive**

(2) Refers to the physical expression of a trait like blue eyes, which is coded by a genotype.

ANSWER: **Phenotype**

(3) Is a synonym of "hybrid" and describes an individual possessing two different copies of a gene.

ANSWER: **Heterozygote** (accept **Heterozygous**; prompt on "carrier")

(4) Refers to the two or more alternative forms of a gene, such as "round" and "wrinkled" in pea plants.

ANSWER: **Alleles** [[uh-LEEL]]

(5) Describes the separation of genes into gametes [[GAM-eets]] without being influenced by other genes, per one of Mendel's laws.

ANSWER: Independent **assortment**

(6) Refers to the ability of one gene to affect the expression of many others, as demonstrated by the gene for albinism affecting skin, hair, and eyes.

ANSWER: **Epistasis** (accept **Epistatic**)

(7)

ANSWER:

(8)

ANSWER:

Second Half

(1) **In a section of one of this man's novels, Christ's return is described in the poem "The Grand Inquisitor." Another of this man's novels contains the section "Apropos of the Wet Snow," which is told from the perspective of a character who revels in his own toothache known simply as the (*) Underground Man. The pawnbroker Alyona is murdered by Raskolnikov [[rah-SKOHL-nih-koff]] in a novel by, for ten points, what Russian author of *The Brothers Karamazov* [[kah-ruh-MAH-zohv]] and *Crime and Punishment*?**

ANSWER: Fyodor **Dostoevsky** [[doh-stoh-YEV-skee]]

(bonus) This work begins with a chapter titled for Rosa the Beautiful, a young woman who embroiders a tablecloth with magical creatures. For ten points each,

* Name this work in which Rosa is accidentally poisoned instead of her father, Severo del Valle [[VAH-yeh]]. It concerns four generations of the Trueba [[troo-EH-bah]] family.

ANSWER: *The **House of the Spirits*** (accept *La **Casa de los Espíritus***)

* *The House of the Spirits* is the debut novel of this Chilean author. She spent 13 years in exile after the 1973 overthrow of the president of Chile, her father's cousin.

ANSWER: Isabel **Allende** [[ah-YEN-deh]]

* Allende's novel *Of Love and Shadows* depicts a journalist who lives in Chile during this dictator's oppressive regime.

ANSWER: Augusto **Pinochet** [[PEE-noh-sheh]]

(2) **Islands in this body of water include Ukerewe and Maboko. The only outflow of this body of water is at Jinja, Uganda, and this body of water is the principal source of the longest branch of the (*) Nile. John Hanning Speke was the first European to see this body of water, which is divided among Kenya, Uganda, and Tanzania. For ten points, name this largest lake in Africa, which is named after a British queen.**

ANSWER: Lake **Victoria** (or Nam **Lolwe**; or **Nnalubaale**)

(bonus) Answer these questions about U.S. national parks, for ten points each,

* This Maine National Park, located on islands near Bar Harbor, contains Cadillac Mountain, the tallest mountain within 25 miles of the Atlantic Ocean.

ANSWER: **Acadia** National Park

* Found mostly in the northwest corner of Wyoming, this was the first national park in the U.S. and possibly the world.

ANSWER: **Yellowstone** National Park

* This California national park, located in the Colorado and Mojave [[moh-HAH-veh]] Deserts, is named for a tree of the genus *Yucca*.

ANSWER: **Joshua Tree** National Park

(3) **This process can be disrupted or terminated by terrane accretion. This process can produce earthquakes at Wadati-Benioff zones. This process forces basalt-rich rocks into the mantle to be recycled through mantle convection. This process, the primary mechanism for forming oceanic (*) trenches, is responsible for making the ring of fire and occurs at convergent boundaries. For ten points, name this process of driving one tectonic plate underneath another at namesake "zones."**

ANSWER: **Subduction** (accept word forms of **Subduction**; prompt on "plate tectonics")

(bonus) The centers of some galaxies are classified as "loud" or "quiet" depending on their emission strength in this part of the EM spectrum. For ten points each,

* Name these waves with frequency between 30 hertz and 300 gigahertz. Receivers and transmitters make them useful for communication.

ANSWER: **Radio** Wave(s)

* Radio waves and all other forms of EM radiation are emitted in tremendous amounts by these active galactic nuclei [[NOO-kee-"eye"], the most luminous objects in the universe.

ANSWER: **Quasars** (accept **Quasi-Stellar Objects**; accept **QSO**)

* Quasars form when the accretion [[uh-KREE-shun]] type of these things surrounds a supermassive black hole. These things are accumulations of gas and dust that orbits stars in the shape of a torus.

ANSWER: Circumstellar **Disks** (accept Accretion **Disks**; accept Debris **Disks**)

(4) **In one myth, this Greek god spent a lunar year in an urn after being imprisoned by Otus and Ephialtes [[eh-FEE-ahl-tees]]. This god's son, Tereus, assaulted Philomela. Cadmus married this god's daughter, Harmonia, and this god was caught in a golden net by (*) Hephaestus [[heh-FEE-stus]] while having an affair. Often depicted as clashing with Athena, this god was the primary lover of Aphrodite. For ten points, name this Greek equivalent of Mars, the god of war.**

ANSWER: **Ares** (do not accept or prompt on "Mars")

(bonus) Fulla served as a maid for this goddess, for whom a group of dwarves built the necklace Brisingamen [[brih-ZING-gah-mun]]. For ten points each,

* Name this fertility goddess of the Norse pantheon.

ANSWER: **Freya** (accept **Freyja**; do not accept or prompt on **Freyr**)

* Freya had a chariot that was pulled by these common pets.

ANSWER: **Cats**

* Half of those killed in combat go to a field ruled by Freya called Folkvangr, while the other half are sent to this building ruled by Odin.

ANSWER: **Valhalla** (accept **Valhøll**)

(5) **This composer of the opera *Trouble in Tahiti* and the musical *Candide* was also a renowned conductor who championed the music of Gustav Mahler. This Harvard-educated musician shared his love of classical music with (*) millions of Americans through his *Young People's Concert* television series. For ten points, name this composer who collaborated with Stephen Sondheim on the score of the Broadway musical, *West Side Story*.**

ANSWER: Leonard **Bernstein**

(bonus) A song composed by this artist opens with the line "Hello darkness, my old friend." For ten points each,

* Name this folk singer-songwriter behind "Homeward Bound" and "The Sound of Silence," who often collaborated with Art Garfunkel.

ANSWER: Paul **Simon** (accept Paul Frederic **Simon**)

* This Paul Simon album features songs like "You Can Call Me Al" and "Diamonds on the Soles of her Shoes," This album is named for the Memphis home of Elvis Presley.

ANSWER: **Graceland**

* Paul Simon was joined on *Graceland* by Ladysmith Black Mambazo [[mom-BAH-zoh]], a singing group which has won five Grammy Awards including "Best World Music Album" for *Shaka Zulu Revisited*. From what country does that group come?

ANSWER: Republic of **South Africa** (or Union of **South Africa**; accept **RSA**)

(6) **This nutrient's recycling is prevented by the medicine Warfarin [[WAR-fuh-rin]], and most of the dietary need for this nutrient is supplied by gut bacteria. In the U.S., newborn babies are often given an injection of this nutrient to prevent a namesake deficiency (*) bleeding.** Excessive bruising and the formation of hematomas are common symptoms of a deficiency in, for ten points, what vitamin important for blood clotting?

ANSWER: Vitamin **K** (accept Vitamin **K**-1, 2, or 3; accept **Phylloquinone**; accept **Menaquinone**; accept **Menadione**)

(bonus) The systems of the human body control the various functions necessary for the body to operate. For ten points each,

* This system helps regulate physiology and behavior, drawing its name from the Greek for "inside" and "secrete."

ANSWER: **Endocrine** [[EN-doh-krin]] System

* The endocrine system regulates functions in the body by using these signaling chemicals, which include ADH and ACTH.

ANSWER: **Hormones** (accept Tropic **Hormones**; accept Peptide **Hormones**)

* This part of the brain coordinates the endocrine and nervous systems by controlling the pituitary gland.

ANSWER: **Hypothalamus**

(7) **An event involving Edward Thomas inspired this poem, which may have prompted Thomas to enlist in World War One. This poem describes a time "ages and ages hence" and is set at a place "bent in the undergrowth." A location that "was grassy and (*) wanted wear" is central to this poem, whose narrator makes a decision which "has made all the difference." Set in a "yellow wood", for ten points, what is this Robert Frost poem about the divergence of paths?**

ANSWER: "The **Road Not Taken**"

(bonus) This poet describes the droning of "a drowsy syncopated tune" on Lenox Avenue in one poem. For ten points each,

* Name this poet of "The Negro Speaks of Rivers" and "The Weary Blues."

ANSWER: Langston **Hughes**

* In another Hughes poem titled "Mother to Son," the speaker states that "Life for me ain't been no crystal [one of these things]...it's had tacks in it, and splinters, and boards torn up."

ANSWER: **Stairs**

* The narrator states that "I am the darker brother" in a poem titled, "I, Too, Sing [this word]." Hughes remarked that "there's never been equality for me" in a poem titled, "Let [this place] Be [this place] Again."

ANSWER: **America** (do not accept "US(A)" or "United States (of America)")

(8) **Examples of state suppression of this organization included the murder of Jerzy Popieluszko [[YER-zee pop-uh-WOOSH-ko]] and the arrest of members of the "S" underground. Round Table Talks were held between this party and the ruling regime led by Wojciech (*) Jaruzelski [[VOY-check yah-roo-ZEL-skee]]. This party formed a coalition government, and its leader, an electrician at the Gdansk shipyard, became the first democratically elected president of Poland. For ten points, name this anti-Communist political party led by Lech Walesa [[LEK vah-WEN-sah]]**

ANSWER: Independent Self-Governing Trade Union "**Solidarity**" (or Niezależny Samorządny Związek Zawodowy "**Solidarność**")

(bonus) This man is the subject of the national epic *The Lusiads*, which is often compared to *The Odyssey*. For ten points each,

* Name this explorer who completed the first known sea voyage to India by a European.

ANSWER: Vasco **da Gama**

* Vasco da Gama hailed from this modern-day country ruled by the House of Aviz. His voyage to India departed from Lisbon.

ANSWER: **Portugal** (accept República **Portuguesa**; accept **Portuguese** Republic)

* During the Age of Discovery, the Portuguese often made use of these fast ships with lateen sails. Their name derives from an Arabic term.

ANSWER: **Caravels** (accept **Caravela**)

Extra Questions

(1) **Families who converted to Protestantism to get relief from this event were labeled "soupers." John Russell's government provided inadequate response measures to this event. People fleeing this event often escaped on (*) "coffin ships." In response to this event, Prime Minister Robert Peel repealed the Corn Laws. For ten points, name this event which caused mass starvation on a European island, caused by the "blight" of a certain root vegetable.**

ANSWER: Irish **Potato Famine** (prompt on "Irish Famine"; accept **Great Hunger**; accept **Great Famine**; accept An **Gorta Mór**; accept An **Drochshaol**)

(bonus) This problem is equivalent to finding the Hamiltonian cycle of lowest weight. For ten points each,

* Name this optimization problem which seeks the shortest path allowing the subject to visit every city on a given route exactly once.

ANSWER: **Traveling Salesman** Problem (accept **TSP**; accept **Traveling Salesperson** Problem)

* The traveling salesman problem is modeled using these mathematical structures with vertices and edges, whose study was pioneered by Euler's [[OY-lers]] analysis of the Seven Bridges of Königsberg [[KEHR-nigs-behrg]].

ANSWER: **Graphs**

* Graphs with non-intersecting edges can be embedded in one of these flat two-dimensional surfaces which stretch infinitely in all directions.

ANSWER: **Planes**