

## Round 8

Michael Etzkorn • Brad Fischer • Clare Keenan • Mike Laudermith • Lauren Onel  
Noah Prince • Jacob Simmons • Kristin Strey • Tyler Vaughan

### Tossups

(1) **The syrinx organ is part of this body system in birds. In insects, the openings to this system are called spiracles. A dysfunction of this system in humans, emphysema, damages the (\*) alveoli that are crucial to this system. Tuberculosis and pneumonia are infections of this body system. For ten points, name this body system that includes the trachea and lungs.**

ANSWER: respiratory system

(2) **Pirithous was punished for eternity for trying to kidnap this goddess, who was celebrated with her mother in the Eleusinian Mysteries. This goddess lived with her mother in the (\*) summer, but was forced to spend part of each year with her husband after consuming pomegranate seeds. For ten points, name this “Queen of the Underworld,” the daughter of Demeter and wife of Hades.**

ANSWER: Persephone (accept Kore)

(3) **A play about this character follows him at *Colonus* with his daughter Ismene. This man’s disgrace sparks a battle between his sons Eteocles and Polynices and the deaths of his daughter Antigone and his wife, (\*) Jocasta. For ten points, name this mythical Greek king who, in plays by Sophocles, fulfills a prophecy that he would kill his father and marry his mother.**

ANSWER: Oedipus Rex

(4) **This empire was dissolved by Francis II after Napoleon founded the Confederation of the Rhine. While leading this empire, Maximilian I used a banner depicting a double-headed (\*) black eagle on a yellow background. The leader of this empire was appointed by Prince-Electors. Charles V was a ruler of, for ten points, what Germanic empire whose emperors were crowned by the Pope?**

ANSWER: Holy Roman Empire (do not accept Rome)

(5) **A painting of this scene by Paolo Veronese was renamed to refer to the *House of Levi*. Tintoretto created a diagonal depiction of this scene, and in another version of this scene painted on dry plaster, knocked-over (\*) salt may foreshadow Judas’s betrayal of the central figure. Leonardo da Vinci created a version of, for ten points, what scene depicting the final meal of Jesus and his disciples?**

ANSWER: The Last Supper (accept L’Ultima Cena)

(6) **Systems of equations that graph this shape can be solved by Cramer’s rule, substitution, graphing, or other methods. When graphed, polynomials of degree 1 take this shape because they have constant (\*) slope; commonly, those polynomial equations are written in  $y$  equals  $mx$  [”m” “x”] plus  $b$  form. For ten points, name this simple shape that is infinitely long and perfectly straight.**

ANSWER: line (accept word forms related to linearity; accept (systems of) linear equations; accept linear polynomials; prompt on descriptive answers that don’t use the word “line” before the end of the tossup)

(7) **This city’s downtown area is home to a Freedom Trail, where tourists can visit Dorchester Heights, Faneuil [fan-yull] Hall, and the Old North Church. Colleges in and around this city include (\*) Emerson College downtown and, across the Charles River in Cambridge, MIT, and Harvard. Logan International Airport serves, for ten points, what capital city of Massachusetts?**

ANSWER: Boston

(8) **The narrator of this novel stays at the Spouter Inn and hears a sermon by Father Mapple. A character in this novel nails a doubloon to his ship’s mast, and employs Queequeg and (\*) Starbuck. This novel’s narrator joins the crew of the *Pequod* after asking the reader to “Call me Ishmael.” For ten points, name this Herman Melville novel in which Captain Ahab pursues the title white whale.**

ANSWER: Moby-Dick; or, The Whale

(9) **This state was admitted to the Union a week before Abraham Lincoln’s re-election. A 1946 Mafia conference in Havana discussed Bugsy Siegel’s business dealings in this state, including the Flamingo (\*) Hotel. In 1859, miners in the Virginia Range in what is now this state discovered the Comstock Lode. For ten points, name this western state where, annually, millions of tourists visit Las Vegas.**

ANSWER: Nevada

(10) **A character in this film has a dog named Mike Hat and is employed by a group who do work above a Chinese restaurant. In this 2016 film, Patty says “I don’t know if it was a race thing or a (\*) lady thing” after a failed stage dive, shortly before her team uses their proton packs to capture a paranormal being in New York City. For ten points, “who ya gonna call?”**

ANSWER: Ghostbusters: Answer the Call (accept answers like “the new Ghostbusters movie”)

(11) **Just before this event, a pillar of “cloud and fire” moved behind a fleeing group to confuse a pursuing army. After this event, Miriam led a song celebrating the defeat of the (\*) “horse and rider,” who drowned during this part of the exodus from Egypt. For ten points, name this biblical event during which the fleeing Israelites passed between two walls of water on their way to the Promised Land.**

ANSWER: the Israelites crossing the Red Sea (both underlined words required; accept Moses parting the Red Sea, with both underlined words required; prompt on descriptions of the “Israelites leaving Egypt” or the “Exodus” before it is read)

(12) **This leader introduced the Four Pests campaign and encouraged backyard steel mills as part of the Great Leap Forward, which caused a famine and millions of deaths. This man, with Zhou Enlai, led forces on the (\*) Long March after they were encircled by Nationalist forces. *The Little Red Book* is a collection of sayings by, for ten points, what former Chairman of China?**

ANSWER: Mao Zedong (accept Mao Tse-Tung; accept Chairman Mao)

(13) **The region experiences Brewer-Dobson circulation, and is suddenly warmed when the polar vortex reverses. The 1991 eruption of Mt Pinatubo formed a global sulfur dioxide cloud in this layer, whose temperature increases with (\*) greater altitude. Most commercial aircraft reach cruising speed within, for ten points, which layer of the atmosphere that contains the ozone layer and lies above the troposphere?**

ANSWER: stratosphere (accept ozone layer before “warming” is read; prompt on “atmosphere” before it is read)

(14) **A poem by this author takes place “by the shores of Gitchee Goomie” and describes the title character’s marriage to Minnehaha. This author created a character whose “cry of alarm” reached “every Middlesex village and farm” as he travels through (\*) Lexington and Concord to warn of British troops. For ten points, name this poet of “The Song of Hiawatha” and “Paul Revere’s Ride.”**

ANSWER: Henry Wadsworth Longfellow

(15) **This element is extracted with molten cryolite in the Hall-Heroult process. Because it was more valuable than silver in 1884, this element was used for the capstone of the (\*) Washington Monument. The ore bauxite is the primary source of this metal, which is the most abundant metal in Earth’s crust. For ten points, name this metallic element whose malleability is exploited to make soda cans.**

ANSWER: aluminum (accept Al)

(16) **Hannah Arendt wrote a book about the “banality” of this concept while studying Adolf Eichmann’s trial for war crimes. Gottfried Leibniz coined the term “theodicy” for the attempt to explain this concept in a world ruled by an all-powerful (\*) God. For ten points, name this philosophical concept, often defined as the absence of good.**

ANSWER: evil

(17) **At the start of this work, cellos play the hymn “God Save Thy People.” Near the end of this piece, the French national anthem “La Marseillaise” [mar-sye-ezz] fades out as “God Save the (\*) Tsar” begins, punctuated by cannon fire and church bells. For ten points, name this piece that celebrates the defeat of Napoleon by Russian troops, a Pyotr Tchaikovsky overture.**

ANSWER: the 1812 Overture (accept The Year 1812, Festival Overture in E Flat major, Op. 49)

(18) **After this novel’s protagonist watches the “feelie” *Three Weeks in a Helicopter*, he is reminded of his mother’s relationship with Popé. This novel opens with a description of the Bokanovsky process, which creates a (\*) caste society that includes alphas and deltas. For ten points, name this dystopian novel about Bernard Marx and John the Savage, written by Aldous Huxley.**

ANSWER: Brave New World

(19) **Massive particles have a de Broglie [duh BROY] variety of this value equal to Planck's constant over momentum. For the electromagnetic spectrum, the product of this and (\*) frequency is equal to the speed of light.** For ten points, name this quantity, symbolized lambda, that can be computed as the distance between two peaks of a wave.

ANSWER: wavelength

(20) **James Wilkinson exposed this man's plan to help Mexico force Spain out of the American southwest. This man became Vice President after Federalists switched their support to Thomas Jefferson, and was nearly indicted in New Jersey for (\*) slaying a political rival in a duel at Weehawken.** For ten points, name this American statesman who ruined his political career by killing Alexander Hamilton.

ANSWER: Aaron Burr Jr.

## Bonuses

(1) This country's colonial empire included African possessions in what is now Angola and Mozambique and forts to protect Indian trade in Goa and Mumbai. For ten points each,

Name this European country that sponsored caravel voyages by Vasco da Gama and Pedro Cabral, but not Christopher Columbus, during the Age of Discovery.

ANSWER: Portugal (accept the Portuguese Empire)

Portugal's expansion in the Age of Discoveries was driven by this prince, known for his love of exploration. This son of John I captured Ceuta [say-oo-ta] and colonized the Azores.

ANSWER: Prince Henry the Navigator (accept Henry the Seafarer; prompt on "Henry")

Portugal's colonies in the New World included the eastern coast of this modern-day country, gained in the Treaty of Tordesillas [tor-de-see-as]. Today, this South American country's official language is still Portuguese.

ANSWER: Brazil

(2) In a novel by this author, Aomame enters an alternate universe after assassinating a hotel guest. For ten points each,

Name this Japanese author of *Kafka on the Shore*, *The Wind-Up Bird Chronicle*, and *1Q84*.

ANSWER: Haruki Murakami (accept names in either order)

A section of *1Q84* is titled "Town of" these animals, which often appear in Murakami's works. One of these pets goes missing at the start of *The Wind-Up Bird Chronicle*, and several of these animals are characters in *Kafka on the Shore*, including a tabby and a Siamese.

ANSWER: cats (accept Town of Cats)

Murakami's writing is often inspired by pop culture, especially this 1960s band. A 2013 short story is named for their song "Drive My Car," and in a 1987 novel, Toru Watanabe is emotionally overcome in Hamburg after hearing this band's song "Norwegian Wood."

ANSWER: The Beatles

(3) According to a conspiracy theory that this opera is an advertisement for Freemasonry, its character of the Queen of the Night is a symbolic attack on the real Maria Theresa. For ten points each,

Name this 1791 opera in which the Queen sings an aria with a series of famously high notes. The enchanted title object of this opera is given to Tamino, who plays it to protect himself in a series of trials.

ANSWER: The Magic Flute (accept Die Zauberflöte)

*The Magic Flute* was one of the last works composed by this Austrian composer, a former child prodigy.

ANSWER: Wolfgang Amadeus Mozart

This is the highest note hit during the Queen of the Night's aria. The major key based on this note has a single flat in its signature.

ANSWER: F (accept F6; accept F Major)

(4) This theory often led to high tariffs, monopolies, economic wars, and a devotion to keeping a trade surplus out of fears of enriching other countries. For ten points each,

Name this 18th century economic policy in which a nation tried to maximize the amount of gold and silver it possessed.

ANSWER: **mercantilism** (accept word forms; prompt on “bullionism”)

This Scottish economist was a vicious opponent of mercantilism, attacking it in works like *The Theory of Moral Sentiments* and *The Wealth of Nations*.

ANSWER: Adam **Smith**

Smith’s theories were inspired by the Physiocrats, who argued that this activity was the primary driver of economic success. François Quesnay [kay-nay] divided the economy into the “sterile” class of merchants, the “proprietary” class of landowners, and the “productive” class, who provide this kind of labor to the landowners.

ANSWER: **agriculture** (accept **farming** and any equivalents)

(5) The egg-rolling done by geese and the spinning of webs by spiders can be described with this term. For ten points each,

Name this type of behavior that is genetically hardwired from birth and done without any prior experience.

ANSWER: **instinctive** (accept **innate**; accept word forms, like **instinctual**)

Many non-instinctual behaviors are learned through this process, in which rewards reinforce a behavior while punishments discourage it. During World War II, B. F. Skinner used this type of learning to train pigeons to guide navy missiles.

ANSWER: **operant conditioning** (prompt on conditioning; do not accept “classical conditioning”)

In between purely innate and conditioned responses is this type of animal behavior that can only occur during a critical period of time. Newly hatched goslings recognized Konrad Lorenz as their mother and continuously followed him because of this type of learning.

ANSWER: filial **imprinting**

(6) Asking a survey to every person you run into at a shopping mall is an easy way to flunk a statistics project. For ten points each,

Going to the mall is a common example of the “convenience” style of performing this statistical procedure, in which a group of people are randomly - or not so randomly - chosen from the population to take the survey.

ANSWER: sampling (accept word forms of sample; accept additional information about randomness; accept convenience sample)

Asking each person you see at the mall runs the risk of ignoring people who don't shop at the mall, introducing this type of negative effect to your survey. This problem can also be introduced by writing your survey to indicate what the answer should be.

ANSWER: bias (accept any type of bias, including selection, sampling, response, etc.)

As another option, you could “ask every American in the country, period;” doing so doesn't create sample data, but rather one of these sets of information. The US government does one of these every 10 years to count the population of the US.

ANSWER: census

(7) Answer the following about Jesus's parable of the Pearl of Great Price, for ten points each.

The parable appears in this gospel, the first book of the New Testament. This book is named for its apparent author, and precedes the books of Mark, Luke, and John.

ANSWER: the Book of Matthew

The Pearl of Great Price also appears in an apocryphal Gnostic gospel attributed to this “doubting” disciple, who could not believe in the resurrection until he had felt Jesus's wounds.

ANSWER: Saint Thomas the Apostle (accept Doubting Thomas)

*The Pearl of Great Price* is the title of a collection of scriptures and teachings important to this church, which was founded by Joseph Smith and is headquartered in Salt Lake City.

ANSWER: The Church of Jesus Christ of Latter-Day Saints (accept LDS Church or Latter-Day Saint Movement; accept Mormon church; accept mormons or mormonism)

(8) In a short story by this man, Nick Adams is sent to warn Ole Anderson about hitmen coming to kill him. For ten points each,

Name this author of “The Killers” who wrote about the romance between Frederic Henry and Catherine Barkley in a work bolstered by his own experiences in World War I, *A Farewell to Arms*.

ANSWER: Ernest Miller **Hemingway**

Hemingway once again used his experience, this time as a reporter, to provide detail for this work set in the Spanish Civil War. In the novel, which takes its name from John Donne, Robert Jordan works with guerrillas to destroy a bridge.

ANSWER: **For Whom The Bell Tolls**

Hemingway’s last work was this calmer short story which focuses on Santiago’s attempt to catch a marlin. This work ends with Santiago dreaming of his youth after losing the marlin to a group of sharks.

ANSWER: The **Old Man and the Sea**

(9) For ten points each, give the following about the 1824 Supreme Court case *Gibbons v. Ogden*.

The case concerned a monopoly on steamboat waterway navigation rights that this state gave to Robert Livingston and Robert Fulton. Fulton’s *North River Steamboat* set speed records on the Hudson River to this state’s capital, Albany.

ANSWER: **New York**

Aaron Ogden, a business partner of Fulton and Livingston, sued Thomas Gibbons for illegally operating a steamboat between New Jersey and New York; that steamboat was captained by this “Commodore,” who later built a steamboat and railroad empire. This man’s philanthropy included founding a namesake university in Tennessee.

ANSWER: Cornelius **Vanderbilt** (accept **Vanderbilt** University)

This Congressman from Massachusetts, a member of the “Great Triumvirate,” represented Gibbons before the Supreme Court and successfully argued that interstate navigation rights were under Congress’ control.

ANSWER: Daniel **Webster**

(10) Anthropologists flocked to this desert area in the 1940s after pilots “discovered” a series of geoglyphs that were previously misunderstood. For ten points each,

Name this South American plain, north of the Atacama Desert, where a series of namesake “lines” in shapes like a spider, monkey, hummingbird, and hands were made from rocks in the desert terrain.

ANSWER: Nazca Plain(s) (accept Nazca Lines; accept Nazca Desert; accept Sechura Desert; prompt, but do not otherwise reveal, “Peruvian Desert”)

The Nazca Lines were preserved by the dry conditions along this country’s western Pacific region. Further up its coast are cities like Miraflores and its capital, Lima.

ANSWER: Peru

The Nazca plains and Atacama Desert are among the incredibly dry regions west of this South American mountain range, the longest continental range in the world.

ANSWER: Andes Mountains

(11) Although local legends disagree with him, a farmer reports that this man was so afraid after ruining Hans Van Ripper’s saddle that he moved to New York to become a judge in a small claims court. For ten points each,

Name this literary character who, according to local legend, haunts the ruins of his New England schoolhouse. This teacher disappears after being frightened by Brom Bones at Katrina Van Tassel’s party.

ANSWER: Ichabod Crane (accept either underlined name)

Locally, Ichabod Crane’s mysterious disappearance is blamed on this ghost, also known as the Galloping Hessian of Sleepy Hollow, who rides through the countryside at night searching for a missing body part.

ANSWER: the Headless Horseman of Sleepy Hollow

Ichabod Crane and the Headless Horseman appear in “The Legend of Sleepy Hollow,” an entry in this American author’s collection *The Sketchbook of Geoffrey Crayon*.

ANSWER: Washington Irving

(12) Hooke’s law includes  $k$ , the namesake constant for one of these devices. For ten points each,

Name these elastic devices that can store energy in volutes, leaves, or more commonly, compressed metal coils.

ANSWER: springs

In Hooke’s law, the opposite of the spring constant times the stretched distance equals this type of force, which tries to return the spring to its relaxed position. Gravity acts as this type of force on a pendulum.

ANSWER: restoring force

Under the influence of a restoring force, a mass at the end of an ideal spring displays this kind of periodic motion that can be graphed as a sine curve.

ANSWER: simple harmonic motion/oscillation (accept SHM; accept SHO; prompt on harmonic)

(13) This man took power of his country's Ba'ath Party shortly after the death of his father, Hafez. For ten points each,

Name this dictator who has violently cracked down on protests during an ongoing civil war.

ANSWER: Bashar al-Assad

Assad is the dictator of this Middle Eastern country, where protests began in the capital city, Damascus.

ANSWER: Syria (accept Syrian Arab Republic)

The protests in Syria began as part of this broad set of revolutions in the middle east in 2010 and 2011. This period began in Tunisia and resulted in government changes in Egypt, Libya, and Yemen.

ANSWER: Arab Spring

(14) For ten points each, give the following about the state of video-streaming websites in 2017.

By far the most popular video-streaming website in the US is this Google-owned website, which offers an ad-free "red" version. This site is the main outlet of JennaMarbles, Smosh, and the Fine Brothers.

ANSWER: YouTube (accept YouTube Red)

While YouTube dominates pre-recorded footage, this website reigns supreme in livestreams. Due to its recent acquisition by Amazon, Prime members can subscribe to one channel on this website for free each month.

ANSWER: Twitch.tv (accept Twitch Prime)

This company has repeatedly tried to enter the streaming market, going as far as buying the rights to the sixth season of *Community*, but hasn't found much success. In 2016, this company replaced its "Screen!" service with the Hulu-partnered View!

ANSWER: Yahoo!

(15) Redshifts and standard candles are part of the cosmic ladder used to measure this quantity on a galactic scale. For ten points each,

This quantity for Proxima Centauri from the Sun is about 1.3 parsecs, 4.2 light-years, or 24.7 trillion miles.

ANSWER: distance (prompt answers like "how far away it is")

The parsec is based on an angle of one arcsecond for this phenomenon, in which the position of a distant object appears to change when the observer's line of sight is shifted.

ANSWER: parallax (accept parallax second)

This is another unit for direct distance measurements. There are 30 of these between the Sun and Neptune, and exactly one between the Sun and Earth.

ANSWER: astronomical unit (accept AU)

(16) These creatures included the dryads, the spirits of trees and forests, and the naiads, the spirits of rivers and waterways. For ten points each,

Name these semi-divine creatures from Greek myths, feminine spirits attached to specific natural features.

ANSWER: nymphs

For her talkativeness, this nymph was cursed to only be able to repeat the words of others, and eventually wasted away to only her repetitive voice.

ANSWER: Echo

Echo's beloved was this beautiful human, who died when he fell in love with his own reflection, and transformed into a namesake waterside flower.

ANSWER: Narcissus

(17) In this play, King Claudius marries his sister-in-law, Gertrude, immediately after the death of the title character's father. For ten points each,

Name this Shakespeare play about a *Prince of Denmark* who suspects Claudius of having murdered his father.

ANSWER: The Tragedy of Hamlet, Prince of Denmark

In *Hamlet*, Claudius is advised by this bumbling, babbling father of Laertes, who is stabbed through a curtain in Gertrude's chambers.

ANSWER: Polonius

This daughter of Polonius is devastated when Hamlet seems not to love her any longer. This woman goes mad and eventually drowns herself under a willow tree.

ANSWER: Ophelia

(18) This painter's painstakingly realistic portraits have inspired suggestions that he painted onto images projected by a camera obscura. For ten points each,

Name this Dutch Golden Age painter, whose portraits includes ones of a *Milkmaid*, a *Geographer*, and an *Astronomer*.

ANSWER: Jan Vermeer (accept Johan or Johannes instead of Jan)

Vermeer painted a vast, cloudy sky over a harbour and the blue and red roofs in a *View of* this Dutch city, which was Vermeer's hometown.

ANSWER: View of Delft (accept Gezicht op Delft)

This painting by Vermeer shows a close view against a black backdrop, bringing the viewer's focus to a young woman wearing a blue and yellow turban, with a title jewelry hanging from her ear.

ANSWER: Girl with a Pearl Earring (accept Meisje met de parel)

(19) After being convicted for speaking out against this policy, a socialist politician noted “while there is a soul in prison, I am not free.” For ten points each,

Name this governmental policy affecting men of certain ages. It was instituted in 1917 after voluntary enlistment failed to create a one million man force to fight in World War I.

ANSWER: the **draft** (accept answers related to military **conscription**; accept the **Selective Service**)

This aforementioned socialist was imprisoned in 1918 for speaking out against the draft. Despite being in prison, he received 3.4 percent of the popular vote in the presidential election of 1920, his fifth time on the ballot.

ANSWER: Eugene V. **Debs**

This President called Debs a traitor for his opposition to the draft during World War I and consistently refused to pardon him. Eventually, this man’s successor, Warren Harding, commuted Debs’ sentence.

ANSWER: Woodrow **Wilson**

(20) For ten points each, give the following about the electron configuration of potassium.

Potassium’s electrons normally occupy the lowest possible energy levels, so the configuration is said to be in this state, as opposed to an excited state.

ANSWER: **ground** state

In the ground state, the 3p subshell of potassium is filled before the 4s due to this energy level principle. Its name comes from the German for “building-up.”

ANSWER: **aufbau** principle

The electron configuration of potassium can be shortened to Ar 4s1 [”a” r” 4 “s” 1] by using the symbol for argon, one of these unreactive elements found in Group 18 of the Periodic Table.

ANSWER: **noble gases** (accept **inert gases**; prompt on partial answers)