

Round 10

Lilly Chavez • Brad Fischer • Natalie Howell • Clare Keenan • Mike Laudermith
Sophie Netzel • Lauren Onel • Aleija Rodriguez • Zane Smalley • Kristin Strey
Ethan Strombeck • Lana Kay Tutterow • Tyler Vaughan • Trevor Vice

Tossups

(1) **A choral piece by this composer has been played at every English coronation since 1727. This composer wrote a piece with sections such as *La Paix* [lah pay] to celebrate the (*) Treaty of Aix-La-Chapelle [ayx lah shah-pell].** Another of this man's works was premiered for King George I on the Thames River. For ten points, name this composer of *Music for the Royal Fireworks* and *Water Music*, as well as *Messiah*.

ANSWER: George Frideric Handel

(2) **An author from this country wrote a short story that gives conflicting perspectives on a murder, titled "In a Grove." This country was the home of the author of "Confessions of a Mask," who committed (*) seppuku during an attempted coup, and of the short story author Ryunosuke Akutagawa [ree-oo-noh-soo-kay ah-koo-tah-gah-wah].** For ten points, name this home country of Yukio Mishima [yoo-kee-oh mee-shee-mah].

ANSWER: Japan (accept Nippon-koku or Nihon-koku)

(3) **The final member of a species from this location, Lonesome George, died in 2012. The most northerly species of penguin is found in this location, as are blue-footed boobies and marine iguanas. This region's variety of food sources produce (*) beaks that specialize in insect-catching and seed-crushing in its native birds.** For ten points, name this equatorial location where Charles Darwin observed finches, leading to the theory of natural selection.

ANSWER: Galápagos Islands

(4) **After fighting back a Spanish army, this man was declared the Hero of Tampico. This man formed the Plan of Casa Mata with Guadalupe Victoria to overthrow Agustín Iturbide [ee-toor-bih-day]. This man was exiled to Staten Island, and his (*) wooden leg was paraded around the US.** The Gadsden Purchase was given to America by, for ten points, what Mexican president who led the attack on the Alamo?

ANSWER: Antonio de Padua Maria Severino Lopez de Santa Anna y Perez de Lebron

(5) **Members of this religion honor children at ages three, five, and seven on a November 15th holiday that includes handing out "thousand year" candy. "Shrine maidens" in this religion wear a red and white outfit and are called (*) miko [mee-koh].** This religion's Ise [ee-say] temple complex is rebuilt every twenty years and may house its country's Sacred Mirror. Amaterasu [ah-mah-tay-rah-soo] is one of the kami [kah-mee] worshiped in, for ten points, what traditional Japanese religion?

ANSWER: Shintoism

(6) **Martin Luther King’s “I Have a Dream” speech opens with a reference to this policy, which had been signed “five score years ago.” This policy said a class of people should “labor faithfully for reasonable wages.” Although this policy was announced five days after the (*) Battle of Antietam, it did not take effect until January 1, 1863. Only rebellious territory was affected by, for ten points, what act by President Lincoln that freed American slaves?**

ANSWER: Emancipation Proclamation

(7) **The first enemy in this game can enter “Cruise Elroy” mode, in which he speeds up and refuses to “scatter.” This game’s maximum score of 3,333,360 can only be reached after the computer fails to draw dozens of keys in the level counter, instead overwriting the (*) right half of the map with an impassable “kill screen.” Blinky, Pinky, Inky, and Clyde are ghosts that chase the player in, for ten points, what classic arcade game in which pellets are eaten by a yellow circle?**

ANSWER: Pac-Man

(8) **This novel’s protagonist is kidnapped by Salé pirates and, after escaping from slavery, sells his friend Xury as a slave. In this novel, a sailor living near the Orinoco River on the “Island of Despair” rescues a man from a group of (*) cannibals, converts him to Christianity, and names him Friday. For ten points, name this novel about a man who spends twenty-eight years on an island after being shipwrecked, written by Daniel Defoe.**

ANSWER: Robinson Crusoe

(9) **Aristarchos of Samos is the first known proponent of this idea, which had early success explaining apparent retrograde motion. This idea opposed the longstanding Ptolemaic model [TOH-lah-may-ick model], and was improved by the discovery of (*) elliptical orbits. Because he defended this theory, Galileo was tried by the Inquisition. For ten points, name this theory of Copernicus that says the planets travel around a nearby star rather than around the Earth.**

ANSWER: heliocentric theory (accept heliocentrism; accept any description of the Sun as the center of the Solar System or universe)

(10) **This mountain range lies above the world’s largest rail tunnel, the Gotthard tunnel, which opened in 2016. This range’s Julian subrange reaches into Slovenia. The Saint Bernard Pass cuts through this mountain range in a ridge between Monte (*) Rosa and Mont Blanc, its two highest peaks. The Matterhorn is in, for ten points, what European mountain range that is primarily in France, Italy, and Switzerland?**

ANSWER: the Alps (accept Swiss Alps; accept Julian Alps after “Slovenia” is read; accept French Alps or Italian Alps after those countries are read)

(11) **This country was led by the “Lion of Midnight” in its victory at the Battle of Breitenfeld. This country, which fought on the Protestant side in the Thirty Years’ War, was crushed at Poltava by Russia to lose the (*) Great Northern War. Gustavus Adolphus was a general for this country, whose King Charles XII [12] invaded Norway in 1716. For ten points, name this Scandinavian country whose king still reigns from Stockholm.**

ANSWER: Sweden

(12) A scientist from this country discovered the neutron and headed this country's phase of the Manhattan Project, code-named Tube Alloys. Both the Crookes radiometer and Newcomen (*) steam engine were invented in this country, where the law of the spring was stated by Robert Hooke, a curator of its Royal Society. For ten points, name this country where Sir Isaac Newton wrote the law of gravity.

ANSWER: England (accept UK or United Kingdom; accept Great Britain)

(13) This artist depicted a white skyscraper between two black skyscrapers in *City Night* and painted a nighttime view of the Radiator Building. This artist's massive mural *Sky Above Clouds* was created at Ghost Ranch in New Mexico. (*) Morning glories and jack-in-the-pulpits are among the common subjects painted by, for ten points, what American artist, known for her close-up paintings of flowers?

ANSWER: Georgia Totto O'Keeffe

(14) When performing this operation on an integer with n digits, the result will have either $2n$ digits or $2n$ minus 1 digits. When an integer has this operation done to it, its one digit cannot be 2, 3, 7, or 8. Negative numbers (*) cannot be the result when this operation is done to a real number, but doing this to i gives negative 1. For ten points, name this operation that is written using an exponent of 2.

ANSWER: square (accept word forms, like squaring the number; prompt on partial answers, like "raising the number to a power")

(15) Three years after this Supreme Court case was decided, Henry Hyde sponsored an amendment restricting federal funding of its subject. Sarah Weddington represented the plaintiff in this case, who used an alias to avoid publicity. The (*) balancing test in question in this case between governmental interests and a right to privacy was decided using a three-trimester framework. For ten points, name this landmark Supreme Court case that legalized abortion.

ANSWER: Roe v. Wade

(16) In a novel by this author, Shreve listens to a story about the life of Thomas Sutpen. This man's novel *Absalom Absalom!* is partly narrated by a Harvard student named (*) Quentin Compson, who commits suicide in another novel by this man. Addie Bundren's body is carried to Jefferson, Mississippi in another novel by this author. For ten points, name this American author of *As I Lay Dying* and *The Sound and the Fury*.

ANSWER: William Cuthbert Faulkner

(17) The KAAP version of this process uses a ruthenium catalyst. A blockade on sodium nitrate imports during World War I forced Germany to develop this process, which operates under conditions in excess of 400 degrees Celsius and 200 atmospheres. Most of the world's synthetic (*) fertilizer is made via, for ten points, what industrial process that combines hydrogen and nitrogen gases to make ammonia?

ANSWER: Haber-Bosch process

(18) **This philosopher described love, hatred, and four other basic passions in his *Passions of the Soul*. This 17th-century thinker developed analytic geometry, which uses formulas, coordinates, and computations to study geometry, especially in the (*) coordinate plane named for him. For ten points, name this French mathematician and philosopher whose *Discourse on the Method* includes the statement “I think, therefore I am.”**

ANSWER: Rene Descartes [day-cart]

(19) **This man hid in the court of Lycomedes, where he became the father of Neoptolemus. This man killed Penthesilea during a truce with Priam to allow for a funeral. After his death, the remains of this warrior were mixed with those of (*) Patroclus. This man’s mother, Thetis, dipped him in the river Styx, which made most of his body invulnerable. Paris killed, for ten points, what enemy of Hector, a Greek warrior with a weak heel?**

ANSWER: Achilles (accept Achilleus)

(20) **A journal in this novel concerns the *Demeter*, a ship whose crew is hunted by a wolf-like creature. Arthur Holmwood, John Seward, and Quincey Morris provide transfusions to Lucy (*) Westenra in this novel, and a sacrament wafer burns Mina Murray after she is bitten by the title character. Jonathan Harker recruits Van Helsing to help him defeat the title character in, for ten points, what Bram Stoker Gothic novel about a vampire?**

ANSWER: Dracula

Bonuses

(1) This event followed the removal of its target from the Politburo in 1926 and his exile from Russia in 1929. For ten points each,

Name this August 20, 1940 attack against a former Communist politician. Ramón Mercader carried out this attack in Mexico City with an ice axe.

ANSWER: assassination (or murder, etc.) of Leon Trotsky

The assassination of Leon Trotsky was ordered by this dictator of the Soviet Union, who had struggled to work with Trotsky after the death of Vladimir Lenin.

ANSWER: Joseph Stalin (or Joseph Dzughasvili)

Trotsky was initially exiled to Almaty, which served as the capital of this country within the Soviet Union and as an independent nation. In 1997, this country moved its capital to Astana.

ANSWER: Kazakhstan

(2) Answer these questions about consequences of the special theory of relativity, for ten points each.

Perhaps the most significant consequence is that this quantity must remain constant in all inertial reference frames. This quantity is represented by c in equations such as E equals $m c$ squared.

ANSWER: speed of light in a vacuum

Because the speed of light is constant, the theory implies that this substance, the medium through which light waves were thought to travel, does not exist. The non-existence of this substance was first suggested by the Michelson-Morley experiment.

ANSWER: luminiferous aether

Time dilation, another consequence of the theory, requires that the clocks on the thirty-two satellites of this system be corrected by about seven microseconds per day. The correction allows this system to give a location on Earth accurate to within four meters.

ANSWER: Global Positioning System (accept GPS)

(3) In Gustave Flaubert's novel *Madame Bovary*, Emma Bovary has affairs with Léon Dupuis and Rudolphe Boulanger before taking this action to escape her massive debt. For ten points each,

Name this action, which Emma Bovary commits by swallowing arsenic. In other novels from the late 1800s, unfaithful women commit this action by throwing themselves under trains or swimming too far into the Gulf of Mexico.

ANSWER: committing suicide (accept descriptions like killing herself or dying)

The title woman of this Leo Tolstoy novel kills herself by jumping under a train after a torrid love affair with Count Vronsky.

ANSWER: Anna Karenina

In this novel by Kate Chopin [shoh-PAN], Edna Pontellier has affairs with Alcée Arobin and Robert Lebrun, but swims into the Gulf of Mexico to die when Robert's dedication to social norms prevents her escape from a stifling marriage.

ANSWER: The Awakening

(4) Answer the following about talented drummers from the 1990s, for ten points each.

Dave Grohl drummed on hits like "Heart-Shaped Box" and "Smells Like Teen Spirit" for this band. Grohl formed the Foo Fighters after the suicide of this band's lead singer, Kurt Cobain.

ANSWER: Nirvana

Travis Barker was key in the success of this band, whose debut album included "What's my Age Again?", "Adam's Song," and "All the Small Things."

ANSWER: Blink-182

Jazz drummer Jimmy Chamberlin was fired from this band in 1996 and 2009 and briefly left it in 2017. He was a member of this band for the release of "1979" and "Bullet with Butterfly Wings" on the album *Mellon Collie and the Infinite Sadness*.

ANSWER: Smashing Pumpkins

(5) For ten points each, name the following South American countries based on their recent political issues.

This country's Constitution prohibits Presidential re-election, and has thus alternated between Sebastian Pinera and Michelle Bachelet as leaders since 2006. The President of this country is based in La Moneda Palace in Santiago.

ANSWER: Chile

In 2019, Jair Bolsonaro became President of this country, where he immediately gave agricultural businesses greater access to land in the Amazon by removing protections for indigenous people.

ANSWER: Brazil

In 2018, this country's government bribed voters with food to vote for incumbent President Nicolas Maduro, who has overseen its worst-ever economic crisis. Maduro succeeded Hugo Chavez as this country's President in 2013.

ANSWER: Venezuela

(6) One of these substances, saccharin, generated a scare in the 1970s when a controversial study linked it to bladder cancer in rats. For ten points each,

Give the general term for compounds such as cyclamate and aspartame that contain almost no calories and substitute for sugar in diet soft drinks and other foods. In the US, these substances are color-coded pink, blue, and yellow in restaurant packets.

ANSWER: artificial sweeteners

An ancient artificial sweetener that may have contributed to the decline of Rome is sugar of lead, which consists of the toxic metal bonded to this anion with formula $C_2H_3O_2^{-1}$ [C-two-H-three-O-two, one minus]. This anion results when the acid in vinegar gives up a hydrogen ion.

ANSWER: acetate

Nearly half of the artificial sweetener sold in the US in 2017 was sucralose marketed under this brand name owned by Heartland Food Products Group. Due to legal action by its rival Equal, this brand no longer uses the slogan, “Made from sugar, so it tastes like sugar.”

ANSWER: Splenda

(7) For ten points each, name the following infamous civil rights court cases.

This 1857 case ruled that blacks were not allowed to sue in federal court because they were not, and could not be, U.S. citizens.

ANSWER: Dred Scott v. Sanford (accept Dred Scott v. Sandford)

This 1896 Supreme Court case confirmed the legality of the “separate but equal” doctrine in a decision with one dissenter, John Marshall Harlan, who noted that this case would eventually be as infamous as *Dred Scott*. This case was overturned for public schools by *Brown v. Board*.

ANSWER: Plessy v. Ferguson

Plessy v. Ferguson’s “separate but equal” doctrine was overturned in these public places by 1954’s *Brown v. Board*. In 1957, the Little Rock Nine became the first children to enroll in a previously all-white one of these places in Arkansas.

ANSWER: public schools

(8) An ancient, armless sculpture of this goddess by Alexandros of Antioch probably once held the golden apple this woman received during the Judgement of Paris. For ten points each,

Name this Greco-Roman goddess of love and beauty.

ANSWER: Venus (accept Aphrodite; accept Venus de Milo or Aphrodite of Milos)

A painting by Sandro Botticelli depicts this event in Venus's life. In the painting, Venus is blown to shore on an enormous seashell while a nymph rushes to clothe her.

ANSWER: The Birth of Venus (accept Nascita di Venere; accept descriptions like "Aphrodite rising from the sea")

Venus also appears in this Botticelli painting, in which the three Graces dance beside Bacchus in a field blooming with new flowers.

ANSWER: Primavera (accept Spring)

(9) This author wrote the novel *Oil!*, which was adapted into the film *There Will Be Blood*. For ten points each,

Name this author, who wrote about Jurgis Rudkus, a Lithuanian immigrant who becomes a socialist, in another novel.

ANSWER: Upton Sinclair

Although this novel by Upton Sinclair was meant to draw attention to the poor working conditions suffered by factory workers like Jurgis Rudkus, the American public was shocked by the appalling food safety measures this novel described.

ANSWER: The Jungle

Upton Sinclair was a member of this early 1900s journalistic movement, which sought to expose corrupt leaders and institutions. Investigative journalism is sometimes referred to by this term.

ANSWER: muckraking journalism (accept word forms like muckraker)

(10) This deity was punished for plotting to kill the god of light by having snake venom dripped onto his skin. For ten points each,

Name this Norse trickster god who fooled the blind Hodr into killing Baldr with a spear made of mistletoe.

ANSWER: Loki

Loki is the father of Hel, Jormungandr [YOR-moon-gahn-durr], and this gigantic wolf, who is predicted to kill Odin and be killed by Vidarr at Ragnarök.

ANSWER: Fenrir (accept Fenris wolf)

Loki's monstrous children were also the children of Angrbotha, who was one of these mythical descendents of Ymir [EE-meer]. Although they were not usually depicted as extraordinarily large, these creatures are now often called "giants."

ANSWER: Jotunn [YOH-tunn] (accept Jotnar)

(11) This scientist used a buzzer, tuning fork, and metronome in his most famous experiment, but never a bell. For ten points each,

Name this Russian scientist who trained dogs to salivate upon hearing a certain stimulus, often thought to be a bell.

ANSWER: Ivan **Pavlov**

Pavlov's dogs learned to associate the sound of a buzzer with their food through this process in which an existing response is tied to an unrelated stimulus. B.F. Skinner later experimented with the "operant" form of this process.

ANSWER: classical **conditioning** (accept **conditioned reflex**; accept **conditional reflex**; prompt on reflex)

Pavlov's 1904 Nobel Prize was not for his animal behavior experiments, but for studying the secretion of gastric juice by this digestive organ. This hollow organ breaks down protein and other food components before releasing it to the small intestine.

ANSWER: **stomach**

(12) This war included a nearly year-long siege of Sevastopol, where the Black Sea fleet was based. For ten points each,

Name this 1850s war between Russia and an alliance of the Ottomans, France, and Britain, fought in a peninsula that was annexed by Russia in 2014.

ANSWER: **Crimean War**

War nursing was revolutionized during the Crimean War by this "Lady with the Lamp," a statistician who organized and managed nursing for the English and their allies.

ANSWER: Florence **Nightingale**

Three years after the end of the Crimean War, the bloody Battle of Solferino in the Franco-Austrian War inspired the creation of this organization, which advocated for better treatment of wounded soldiers and safety for medics and field hospitals. Clara Barton founded the American branch of this organization.

ANSWER: **Red Cross** (accept International and/or American **Red Cross**)

(13) This author's pen name is likely derived from her father's position in the Shikibu-sho [shee-kee-boo-shoh], the Ministry of Rites in Heian-Era [hay-on era] Japan. For ten points each,

Name this early Japanese author, who wrote about a "shining prince" in her most famous work.

ANSWER: **Murasaki** Shikibu (accept Lady **Murasaki**; accept **Fujiwara**)

Murasaki Shikibu's [moo-rah-sah-kee shee-kee-boo's] "shining prince" is the title hero of this work of fiction, in which he falls in love with Lady Fujitsubo, Lady Murasaki, and Lady Aoi before he "vanishes into the clouds."

ANSWER: The **Tale of Genji** (accept **Genji Monogatari**)

The Tale of Genji is often considered among the first examples of this type of work. This term describes a long work of fiction written in prose rather than poetry.

ANSWER: **novel**

(14) Two of these instruments play the flowing melody at the start of Smetana's tone poem *The Moldau*. For ten points each,

Name these reedless woodwind instruments. They often play high orchestral parts alongside their smaller relatives, the piccolo.

ANSWER: flute

This composer's *Prelude to the Afternoon of a Faun* begins with a chromatic flute solo. This composer's other piano pieces include "The Sunken Cathedral" and "Clair de Lune."

ANSWER: Claude Debussy

This composer's 8th symphony begins with a flute solo, and a flute plays a solo at the bottom of its range in this composer's *New World Symphony*.

ANSWER: Antonín Dvořák

(15) In 1844, a mob attacked a jail where this man and his brother, Hiram, were awaiting trial; Hiram was shot through a door, and this man was shot three times before he fell out of a second-story window. For ten points each,

Name this man. After his death, James Strang, Sidney Rigdon, and Brigham Young quarreled over who should succeed him as leader of their religious group.

ANSWER: Joseph Smith

Joseph Smith was a leader of the Latter-Day Saints, a religious movement that uses this sacred text. Smith translated this text into English out of "reformed Egyptian" that had been written on a set of golden plates revealed to him in New York in 1827.

ANSWER: Book of Mormon

Joseph Smith led the Mormons in this Illinois town, where as mayor he ordered the destruction of a newspaper critical of him and declared martial law.

ANSWER: Nauvoo

(16) A line of best fit may be drawn through one of these graphs to indicate a relationship between the variables in question. For ten points each,

Name this type of chart that displays points of data with a labeled set of x and y axes, named for the unorganized form it often takes.

ANSWER: scatter plot (accept scatter diagram, scatter graph, etc.)

A scatter plot can be used to demonstrate this type of association, often symbolized r , between two variables. A statistician must be careful not to use a scatter plot to imply that there is a cause and effect relationship between the variables, although this relationship is much weaker.

ANSWER: correlation (accept word forms; accept (Pearson's) correlation coefficient)

The quantity r will have this value if a scatter plot's points all lie on a single, downward sloping line.

ANSWER: negative one (prompt on "negative" alone; do not accept or prompt on "one" alone)

(17) Answer some questions about religious rites of passage, for ten points each.

This rite of passage is commonly performed on Jewish boys when they turn 13 or Jewish girls when they turn 12 or 13. During the ceremony, the child reads a portion of the Torah and official becomes responsible for themselves as an adult under Jewish law.

ANSWER: mitzvah (accept Bar Mitzvah or Bat Mitzvah; accept B'nai Mitzvah; accept B'not Mitzvah)

In Catholicism, this sacrament is performed to solidify the process of joining Christianity that began with baptism.

ANSWER: confirmation

In Hinduism, a young child must undergo Chundakarana, or the performing of this action, as the eighth step of their rite of passage. This action is against the Sikh belief of Kesh, which is meant to reflect god's perfect creation.

ANSWER: having their hair cut

(18) Answer the following about the poem "My Last Duchess", for ten points each.

"My Last Duchess" is by this English poet, who also wrote "Porphyria's Lover" and *The Ring and the Book*, and who wrote poems for his wife, Elizabeth Barrett, who was also a poet.

ANSWER: Robert Browning

In "My Last Duchess," the sociopathic duke shows a guest a piece of art created by Fra Pandolf, a man with this profession, who created a depiction of the dead duchess.

ANSWER: painter (accept portraitist; prompt on "artist")

The duke has the duchess killed because she is as happy with his "gift of a nine-hundred-years-old name" as she is by this daily event, which the duke describes as "the dropping of the daylight in the West."

ANSWER: sunset (accept descriptions)

(19) This region is home to an annual Underwater Music Festival, where divers "play" instruments like the bara-tuba and raise awareness of coral degradation. For ten points each,

Name this island chain off the southern coast of Florida.

ANSWER: Florida Keys

US Highway 1, which stretches all the way from Maine to Key West, enters the Florida Keys at this key. Its name reflects the fact that it is the longest of the islands that make up the Keys.

ANSWER: Key Largo

Coral reefs aren't the only ecosystem in Florida in need of environmental protection. This wetlands region of central and southern Florida is plagued with hundreds of invasive species of plants and threatened by urban development.

ANSWER: Everglades

(20) According to the Köppen climate classification system, these arid regions of the planet have expanded by seven percent since 1950. For ten points each,

Identify this biome with an average annual temperature above eighteen degrees Celsius and very little precipitation. Saudi Arabia and most of North Africa reside in this biome.

ANSWER: hot desert

The Köppen system uses a mathematical formula to differentiate deserts from these semiarid grasslands that have hot summers and cold winters. Much of Mongolia, Kazakhstan, and Ukraine consists of these plains.

ANSWER: mid-latitude steppes

Deserts and steppes are designated by this letter of the alphabet in the Köppen system. This letter also designates the layer of soil found just below the topsoil.

ANSWER: B