

Round 5

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) **Blue mountains in the background of this painting were inspired by a window-side view from Saint-Paul, an institution near Saint-Remy de Provence [saw'n reh-MEE duh proh-VONS], and overlook a tall church** (*) steeple in an idealized village. A cypress tree dominates the left-hand side of this painting, opposite a strangely luminous crescent moon. For ten points, name this painting created by Vincent Van Gogh, in which bright lights swirl in a dark sky.

ANSWER: The Starry Night (accept De sterrennacht)

(2) **The 23rd Amendment concerns this city, which is subject to a 1910 law that prevents the building of skyscrapers. Under the Compromise of 1790, states adopted Alexander Hamilton's debt plan in exchange for** (*) acknowledgement of this city. Article I of the Constitution allowed for the creation of, for ten points, what city on the Potomac River that succeeded New York and Philadelphia as capital of the US?

ANSWER: Washington D.C. (accept DC; accept District of Columbia)

(3) **The World War II proximity fuse relied on this effect to detonate bombs near their targets. This effect is used in ultrasound to measure the speed of blood through an artery, and it is applied to microwaves to allow police officers to catch speeding cars and** (*) meteorologists to track storms. An ambulance siren's pitch increases as it approaches the listener due to, for ten points, what effect used in weather radar?

ANSWER: Doppler effect

(4) **The Friedman rabbit test was once used to diagnose this condition, whose abnormal types can be molar or ectopic. Amniocentesis is performed on patients with this condition that is marked by a continuous increase in** (*) progesterone. In an early stage of this condition, the placenta attaches to the uterus. Morning sickness is a common symptom of, for ten points, what condition that often concludes with a woman giving birth to a baby?

ANSWER: pregnancy (accept gestation)

(5) **In this novel, the daughter of Sister Gudule is born with the name Agnès, but grows up as a dancer who performs with her goat Djali ["jolly"]. The "Pope of Fools" who tries to reunite Agnès with Captain** (*) Phoebus in this novel against the wishes of Archdeacon Claude Frollo. For ten points, name this novel about La Esmeralda, a girl who is switched as a baby with Quasimodo, the deformed bell-ringer of a Paris cathedral.

ANSWER: The Hunchback of Notre-Dame (accept Notre-Dame de Paris)

(6) **According to Joseph Smith, this biblical figure lived with her husband near Jackson County, Missouri. Her husband's first wife was the evil Lilith, and she became the mother of Seth after her son committed the (*) first murder.** A serpent assured this woman, "you will not certainly die," inspiring her to take a bite from a forbidden fruit. For ten points, name this mother of Cain and wife of Adam, the first woman to appear in the Bible.

ANSWER: Eve

(7) **Description acceptable. Structures built for this purpose include kurgans in Proto-Indo-European cultures. In 1939, archaeologists in Britain discovered Sutton Hoo, a site that used a ship as the vessel for this purpose. Paris and Rome each have extensive (*) underground catacombs that serve this purpose, which may be done in a mausoleum.** For ten points, name this act that may be done with a coffin or a casket.

ANSWER: burial (accept anything related to the interment of dead bodies; accept descriptions of cemeteries or other places where burial may occur)

(8) **This literary character accepts a point of weakness in the small of his back and commands troops at the Battle of Manhattan. This character attempts to destroy (*) Kronos** hosted in the body of Luke Castellan, whom this character meets at Camp Half-Blood. For ten points, name this son of Sally and Poseidon, a teen demigod who appears in a series of novels by Rick Riordan that begins with *The Lightning Thief*.

ANSWER: Perseus "Percy" Jackson (accept any underlined name)

(9) **Leonidas Dyer tried to make this action a federal crime. This action was carried out in Marietta, Georgia against Leo Frank, who had been imprisoned for the murder of Mary Phagan. Billie Holliday protested this action with the song (*) "Strange Fruit,"** which describes "Blood on the leaves and blood at the root" of trees. The Ku Klux Klan often carried out, for ten points, what type of murder that often targeted African Americans via hanging?

ANSWER: lynching (accept word forms; prompt on partial answers, like "murder," "mob violence," or "hanging")

(10) **This type of quantity is calculated by Bayes' Theorem. This concept must have a non-negative value that cannot exceed one. This mathematical concept can be added together if two events are mutually exclusive. This value is 0.5 for (*) flipping a "heads" on a standard fair coin.** For ten points, name this mathematical concept that describes the likelihood of an event, often as a percentage.

ANSWER: probability (accept conditional probability or similar descriptive answers that elaborate on probability alone; do not accept "odds," "chance," or other possible synonyms)

(11) **This state's Sawatch Mountains include Mount Harvard, Mount Yale, and Mount Oxford. This state's 58 "fourteeners," or mountains with a peak over 14,000 feet, include Mount Elbert, the tallest point in this state, and a mountain named for a man who failed to climb it, (*) Pikes Peak.** Greeley, Fort Collins, and Boulder are cities in, for ten points, what state in the Rocky Mountains that is home to a US Mint in Denver?

ANSWER: Colorado

(12) **The protagonist of this musical declares “There is power in me yet / My race is not yet run!” in the “Confrontation” scene. A theme in this musical is sung as “Come To Me” during a young mother’s death, and returns when Eponine [EH-poh-noon] and (*) Fantine [fon-teen] escort the protagonist to heaven. “One Day More” closes Act One of, for ten points, what musical about Jean Valjean’s [zhahn val-zhahn’s] redemption, based on the Victor Hugo novel of the same name?**

ANSWER: Les Miserables (accept Les Mis)

(13) **Piobert’s law describes the behavior of this substance, whose modern double-base form consists mainly of nitrocellulose. DuPont was founded as a manufacturer of this substance. (*) Smokeless types of this substance are contrasted with the traditional black form, made from a mixture of saltpeter, charcoal, and sulfur. For ten points, name this explosive substance used to propel cannonballs and bullets.**

ANSWER: gunpowder (accept smokeless powder before it is mentioned)

(14) **Two of these works claim “thy eternal summer shall not fade” and admits “that music hath a far more pleasing sound” than a lover’s voice. These poems include “My (*) mistress’ eyes are nothing like the sun” and “Shall I compare thee to a summer’s day?” and may have been addressed to Elizabeth I. For ten points, name these fourteen-line poems, many of which were written by Shakespeare.**

ANSWER: sonnets by William Shakespeare (accept Shakespearean sonnets; accept Elizabethan sonnets)

(15) **Robert Peel controversially asked this ruler to dismiss attendants of the Bedchamber. This leader was the first to permanently live in Buckingham Palace, and had a famously positive relationship with the only Jewish prime minister of her country, (*) Benjamin Disraeli. The Crystal Palace in Hyde Park was organized by this ruler’s husband, Prince Albert. For ten points, name this “Empress of India,” a 19th-century queen of England.**

ANSWER: Queen Victoria

(16) **In a story from this civilization, Hun-Came and Vucub-Came play a ballgame against Xbalanque [shah-blon-kay] and Hunahpu [hoo-nah-poo]. Stories from this civilization are collected in the (*) *Popul Vuh*, which also tells how humans were created out of maize. The Hero Twins journey to the underworld Xibalba [shee-ball-bah] in a story form, for ten points, what Mesoamerican civilization, whose Long Count calendar ended in 2012?**

ANSWER: Mayan Civilization (accept K’iche’ people)

(17) **One of these objects is given by Cio-Cio San [cho cho sahn] to her son before she commits suicide in *Madame Butterfly*. A song named for this object was used as an emergency signal in the 1944 Hartford circus fire. The melody of the drinking song (*) “To Anacreon in Heaven” is the setting of a poem about this object, which is praised “Forever” by a John Philip Sousa march. For ten points, name this object, the subject of “The Star Spangled Banner.”**

ANSWER: American flag (accept The Star Spangled Banner before it is read; accept The Stars and Stripes Forever; prompt on partial answers, like “flag”)

(18) **While working in this region, Leonid Rogozov gave himself an emergency appendectomy. Air New Zealand Flight 901 crashed into the side of this region's Mount Erebus in 1979. Sectors of this region are controlled by countries like (*) Chile, Australia, and the United States. Ernest Shackleton, Robert Scott, Roald Amundsen used sled dogs and icebreaking ships to explore, for ten points, what nearly uninhabited continent, the home of the South Pole?**

ANSWER: Antarctica (accept Novolazarevskaya Station before "Air New Zealand" is read; anti-prompt on "South Pole" by asking "can you be less specific?")

(19) **This planet's moon Pan is located within the Encke gap. The spiral shape of a feature of this planet labeled F was detected by the Cassini probe. Christiaan Huygens [HOY-ghens] studied this planet, whose north pole has a hexagonal wave pattern. (*) Rhea, Iapetus, and Titan orbit, what sixth planet from the Sun, surrounded by the solar system's most prominent ring system?**

ANSWER: Saturn

(20) **In this novel, Tom Loker changes his outlook on life after being healed at a Quaker settlement at the request of Eliza. George Shelby arrives too late to stop this novel's title man from dying on the order of (*) Simon Legree, who purchases the protagonist after the deaths of Eva St Clare and her father. For ten points, name this novel about the struggles of slaves like George, Eliza, and the quiet title man, written by Harriet Beecher Stowe.**

ANSWER: Uncle Tom's Cabin; or, Life Among the Lowly

Bonuses

(1) As of 2018, the United Nations has declared this status for only two illnesses: rinderpest and smallpox. For ten points each,

Identify this status in which a pathogen can no longer be found in the host population and no new cases of the illness are reported. A decline in childhood vaccination has prevented measles from reaching this status in the United States.

ANSWER: **eradication** (accept word forms; prompt on “elimination;” do not accept or prompt on “extinct”)

With only small pockets surviving in Africa and South Asia, this disease that can cause paralysis in children may be eradicated in the next decade. The first widely available vaccine against this disease was developed by Jonas Salk in the 1950s.

ANSWER: **poliomyelitis**

Much of the funding for global disease eradication comes from a foundation started by this second-richest man in the world and his wife Melinda. This Microsoft co-founder has committed to ending malaria by the year 2040.

ANSWER: Bill **Gates**

(2) This former 30th overall pick recently created a rift in his team’s front office due to his disputes with Karl Anthony-Towns and Andrew Wiggins. For ten points each,

Name this shooting guard for the Minnesota Timberwolves who, during the 2018 off-season, requested a trade.

ANSWER: Jimmy **Butler**

Some have claimed that the Timberwolves are trying to become this team; they acquired Butler from this team in 2017, are coached by their former coach Tom Thibodeau [tih-boh-doh], and have recently signed Taj Gibson and Derrick Rose. Unfortunately, they can’t sign Michael Jordan, who helped this team win six titles in the ‘90s.

ANSWER: **Chicago Bulls** (accept either or both names)

The Timberwolves may try to be the Bulls, but it’ll be tough to escape their Minnesota roots. Like baseball’s Twins, the Timberwolves’ home arena is named for this Minnesota retail giant and rival of Walmart.

ANSWER: **Target**

(3) Answer the following about short poetry from Asia, for ten points each.

Omar Khayyam wrote the *Rubaiyat*, a collection of quatrains, in this language. This was the primary language of a civilization that long held power in what is now Iran.

ANSWER: Persian (accept Persia)

This Tang-dynasty Chinese poet was one of the Immortals of the Wine Cup, and legendarily died while trying to embrace the reflection of the moon in the Yangtze River.

ANSWER: Li Po (accept Li Bo; accept Li Bai; accept Li Pai; accept Li Tai-po; accept Li Tai-pai)

Favored by Matsuo Basho, this form of short, Japanese poetry typically consists of three lines of 5-7-5 on ohn, or syllables, and includes a “cutting word” to contrast its images or themes.

ANSWER: haiku

(4) Answer some questions about female non-Olympian deities, for ten points each.

According to some myths, this goddess of the hearth gave up her seat as an Olympian to Dionysus so she could tend to the fire at Olympus.

ANSWER: Hestia (accept Vesta)

Hestia is a child of this Titaness and Kronos. When Kronos began eating his children, this Titaness gave Kronos a stone to eat in place of Zeus.

ANSWER: Rhea

This earth goddess was the mother of the Titans with Uranus. She gave Cronus the sickle that he used to castrate Uranus.

ANSWER: Gaia (accept Terra)

(5) This event began in October 1934 with an escape from Jiangxi [jee-ahng-shee] and a move to Zunyi, where the Politburo gathered to discuss how to avoid Chiang Kai-shek’s Nationalists. For ten points each,

Name this year-long retreat by the Red Army through China.

ANSWER: Long March (accept Chang Zheng)

This Communist general led the Red Army during the Long March, which solidified his power. This man served as Chairman of the Chinese Communist Party for 33 years until his 1976 death.

ANSWER: Mao Zedong

The Chinese Civil War resumed after World War II, and in 1949, Chiang Kai-shek’s Nationalists were forced to retreat to this island.

ANSWER: Taiwan (accept Formosa)

(6) Pitchblende, one of these minerals, was separated by the Curies, allowing the discovery of radium and polonium. For ten points each,

Name this type of mineral that is mined for the valuable metals it contains. Hematite is one such mineral source for iron.

ANSWER: ore

Because of its low melting point, this metal with chemical symbol Pb [P-B] is relatively easy to extract from ores. It is used to manufacture acid batteries and bullets.

ANSWER: lead

Once mined by the ancient Egyptians to make the dark eyeliner kohl, this ore is the major source of lead.

ANSWER: galena

(7) Identify the following members of the Noble and Most Ancient House of Black, for ten points each.

This man's name was burned off of the Black family tapestry by his mother, Walburga, after he ran away from home in the 1970s. This man was the best friend of James Potter and the godfather of Harry Potter.

ANSWER: Sirius Black (accept Padfoot)

This man, Sirius's younger brother, took over as family heir after Sirius was disowned. He would likely have been disowned himself if Walburga had discovered that his man had a change of heart and tried to destroy one of Voldemort's horcruxes.

ANSWER: Regulus Arcturus Black

Sirius's cousins included Narcissa, Bellatrix, and this woman, who was burned out of the family tapestry after marrying a muggle-born man and producing a daughter named Nymphadora.

ANSWER: Andromeda Black Tonks (prompt on "Tonks")

(8) This country includes Corfu in the Ionian Islands, Hydra and Aegina in the Saronic Islands, and Naxos in the Cyclades Islands. For ten points each,

Name this country that controls several hundred islands in the Aegean Sea, including the Dodecanese [doh-DEH-kah-NEEZ] near Turkey.

ANSWER: Greece (accept Hellenic Republic or Elliniki Dimokratía; accept Elláda)

The ancient Minoan civilization was based on this island, the largest controlled by Greece.

ANSWER: Crete

The largest island in the Dodecanese group is this island, which was once ruled by the Knights Hospitaller. A Wonder of the Ancient World was built on this island and stood until 226 BCE.

ANSWER: Rhodes (accept Colossus of Rhodes, but do not accept or prompt on Colossus alone)

(9) In 1973, members of the American Indian Movement led an armed occupation of this town as a protest against federal treatment of Native Americans. For ten points each,

Name this small town where, 83 years earlier, Spotted Elk and over one hundred Lakota people were massacred by the 7th Cavalry.

ANSWER: Wounded Knee

Wounded Knee is a town in the Pine Ridge Reservation, which is found in this US state.

ANSWER: South Dakota

Roughly two dozen US soldiers were given this award for their conduct in the Wounded Knee Massacre. Although Congress resolved to condemn the massacre in 1990, these awards have not been revoked. This is the US military's highest personal decoration.

ANSWER: Congressional Medal of Honor

(10) For precision machining, engineers can use a hollow core fiber laser or a cutter that shoots jets of this extremely high-temperature substance. For ten points each,

Name this fourth state of matter, an ionized gas formed by lightning and high intensity lasers. Stars are also composed of this substance.

ANSWER: plasma

Lasers made with hollow core fibers are filled with a low pressure noble gas, such as this element with atomic number eighteen. This gas makes up 0.9% of the earth's atmosphere, and lamps made with it have a purple glow.

ANSWER: argon (accept Ar)

This question's author uses a hollow core fiber laser to perform an ultrafast type of this technique, in which elements are identified by the wavelengths of light they absorb or emit. The infrared form of this technique uses "fingerprint" regions to identify compounds.

ANSWER: atomic spectroscopy

(11) In one opera, this character rapidly repeats his own name in the aria "Largo al Factotum." For ten points each,

Name this character who aids Count Almaviva in *The Barber of Seville* and is married in a Mozart opera.

ANSWER: Figaro

This composer of the *Barber of Seville* also wrote the operas *The Thieving Magpie* and *William Tell*. Today, he is best known for the overtures to those works.

ANSWER: Gioachino Antonio Rossini

Both *The Barber of Seville* and *The Marriage of Figaro* are in this language, the native language of Rossini. Most musical markings, including piano and forte, are written in this language.

ANSWER: Italian language (accept lingua italiana; accept Italiano)

(12) Answer these questions about the use of the Greek letter μ [mew] in physics, for ten points each.

One use of μ is as the symbol for this quantity, the resistance of a fluid to flowing. This quantity is more than six thousand times greater for mayonnaise than for water.

ANSWER: dynamic viscosity

μ also represents the coefficient of this force that resists the motion of an object as it travels along a surface. To push a box up a ramp, you must overcome the “static” form of this force.

ANSWER: friction

Because the coefficient of friction can only be determined by experiment, instead of calculated from a formula, μ is this type of measurement. This term can refer to any knowledge gained by direct observation or experience.

ANSWER: empirical

(13) In this religion, evil souls who attempt to reach the underworld encounter an ever-narrowing bridge and the demon Vizaresh. For ten points each,

Name this monotheistic religion that grew out of the teachings of a Persian prophet. In this religion, Angra Mainyu attempts to lure the followers of Ahura Mazda into committing sin.

ANSWER: Zoroastrianism (accept Mazdayasna; accept Zarathustrianism)

Zoroastrians commonly pray in temples dedicated to this substance. This substance was, along with water, one of the last primordial elements to be created.

ANSWER: fire (accept atar)

The Zoroastrian version of this ritual involves four days of activities, including the planting of a twig to ensure fertility. In another part of this ritual, a man passes an egg around his head three times and sprinkles a woman with rice.

ANSWER: wedding (accept marriage)

(14) This author wrote a short story in which an unnamed narrator is sent to ask Simon Wheeler about Leonidas W. Smiley. For ten points each,

Name this American author, who wrote about about the supposedly remarkable amphibian Dan'l Webster in “The Celebrated Jumping Frog of Calaveras County.”

ANSWER: Mark Twain (accept Samuel Langhorne Clemens)

Mark Twain also created this character, who visits his own funeral after vanishing to Jackson's Island with Joe Harper and Huckleberry Finn.

ANSWER: Thomas “Tom” Sawyer (accept either name)

This woman, the mother of Tom's cousin Mary, cares for Tom and his brother, Sid, in St Petersburg, Missouri.

ANSWER: Aunt Polly

(15) This man made a famous speech stating that the “great questions of the day” would be decided by “blood and iron.” For ten points each,

Name this 19th century chancellor who discussed how to unify Germany in that speech.

ANSWER: Otto von Bismarck

Bismarck was appointed Prime Minister of this German predecessor state in 1862. This kingdom captured Napoleon III when it fought France in an 1870 war.

ANSWER: Prussia

In 1862, during a crisis about the re-organization of Prussia’s military, this man appointed Bismarck Prime Minister. This man served as the first Kaiser of a unified Germany, and his grandson of the same name served as Kaiser during World War I.

ANSWER: Wilhelm I (accept William I; prompt on “Wilhelm” or “William”)

(16) A function can be described by this adjective when considered at points not in its domain, but this adjective is most commonly used to describe situations involving an impossible division. For ten points each,

Give this adjective that describes expressions like 1 over 0, which cannot be represented by a real number.

ANSWER: undefined

The function “f of x equals one over x” is not defined at x equals zero, and instead has this graphical feature along the y-axis. The graph of one over x approaches, but never touches, this vertical feature of the graph.

ANSWER: vertical asymptote

Of the six basic trigonometric functions, two of them - sine and cosine - are defined along the entire real number line. Two of them are not defined at x equals zero; name either of those functions.

ANSWER: cotangent of x or cosecant of x (accept cot of x; accept csc of x; do not accept or prompt on tangent or secant alone)

(17) This architect’s Robie House exemplifies his Prairie School style. For ten points each,

Name this Midwestern architect who designed many homes from his studio Taliesin [tah-lee-ess-in].

ANSWER: Frank Lloyd Wright (accept Frank Lincoln Wright)

This Frank Lloyd Wright building facing Central Park is designed so that visitors view this museum’s collection of modern art while descending a continuous, spiral ramp around its central rotunda.

ANSWER: Solomon R. Guggenheim Museum

Another Guggenheim Museum in Bilbao was designed by this stainless-steel-loving architect, who also designed the Prague Dancing House and Millennium Park’s Pritzker Pavilion.

ANSWER: Frank Owen Gehry (accept Frank Owen Goldenberg)

(18) This character is imprisoned by a race of tiny people on the island of Lilliput. For ten points each,

Name this traveller who is sold to the Queen of Brobdingnag, dropped into the ocean by a giant eagle, and rescued by the flying island of Laputa.

ANSWER: Lemuel Gulliver (accept either name; accept Gulliver's Travels)

Gulliver's Travels is a satirical work by this Irish author who also wrote *A Tale of a Tub* and *Drapier's Letters*.

ANSWER: Jonathan Swift

Swift also wrote this satirical essay, which proposes that Irish Catholics should eat and sell their babies as food to alleviate their economic hardship during the Irish Potato Famine.

ANSWER: A **Modest Proposal** For preventing the Children of Poor People From being a Burthen to Their Parents or Country, and For making them Beneficial to the Publick

(19) This man declared “John Marshall has made his decision, now let him enforce it!” after hearing of the Supreme Court's decision in *Worcester v. Georgia*. For ten points each,

Name this US President whose fierce anti-Native sentiment led many Native Americans to be forced out of their ancestral lands and onto the Trail of Tears.

ANSWER: Andrew Jackson

Jackson was Major General at this battle during the War of 1812, which actually took place twelve days after the Treaty of Ghent ended the war.

ANSWER: Battle of New Orleans

This Native American tribe fought against the United States on three separate occasions after Andrew Jackson invaded their Florida territories following the War of 1812.

ANSWER: Seminoles

(20) Scholars within this field may focus on pragmatics, in which the context of a message is studied, on semantics, in which the meaning of words or symbols are studied, and/or on syntax, in which the structure of sentences are studied. For ten points each,

Name this social science, the study of language.

ANSWER: linguistics

Linguists often study the historical development of a language, from a simplified pidgin stage, to this more stable stage of a mixed language that can be learned natively by children, and further into varieties, dialects, and languages. This term is also used to describe racially-mixed ethnic groups, such as descendants of French settlers in Louisiana.

ANSWER: creole (accept creole language; accept Creole people)

Linguists have not come to a complete consensus on whether this variety of English evolved from an African creole or an English creole. Linguists do not generally use the controversial term Ebonics for this variety.

ANSWER: African-American Vernacular English (accept AAVE; accept Black Vernacular English)