

## Round 8

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Sophie Netzel • Lauren Onel • Aleija Rodriguez • Zane Smalley • Kristin Strey  
Ethan Strombeck • Lana Kay Tutterow • Tyler Vaughan • Trevor Vice

### Tossups

(1) **After this god lost a contest to Pan, he gave Midas donkey ears. This god was forced to serve Admetus after killing the cyclopes to avenge his son Asclepius. After (\*) Niobe boasted of her seven sons and daughters, Leto sent this god and his sister to kill them all. For ten points, name this lyre-playing Greek god of music and light, the twin brother of Artemis.**

ANSWER: Apollo (accept Apollon; accept Phoebus Apollo)

(2) **This state's second-largest city is home to the BOK Tower, a half-sized replica of the original World Trade Center twin towers designed by the same firm. This state's flagship university is in Norman, a suburb of its largest city. The (\*) Choctaw Nation is established in the southeast of this state, which was once labeled Indian Territory. For ten points, name this central US state that is home to Tulsa and a prominent panhandle north of Texas.**

ANSWER: Oklahoma

(3) **The dimethyl of this element is a toxin that can penetrate nitrile gloves. The vaccine preservative thimerosal has been banned in some countries for containing this element, which forms amalgams with other metals. A common unit of pressure is (\*) millimeters of this element, which was once used in thermometers since it is a liquid at room temperature. For ten points, name this element with symbol Hg that shares its name with the planet closest to the Sun.**

ANSWER: mercury (accept Hg before it is read)

(4) **A leader of this country visited Roswell Garst's corn farm in Iowa but wasn't allowed to tour Disneyland in 1959. Margaret Thatcher praised a leader of this country by saying "We can do business together;" that leader promoted *glasnost*, a policy of openness, before this country (\*) dissolved in 1991. Mikhail Gorbachev and Nikita Khrushchev led, for ten points, what country that fought the Cold War with the US?**

ANSWER: Soviet Union (accept USSR; accept Union of Soviet Socialist Republics; accept CCCP; accept Soyuz Sovetskikh Sotsialisticheskikh Respublik; prompt on "Russia")

(5) **In this play, a talkative character who declares that "brevity is the soul of wit" is stabbed through a curtain. A goblet of poisoned wine and a poison-coated sword are prepared for a duel in this play, but end up killing (\*) Gertrude and Laertes instead. This play's protagonist tells Ophelia to "get thee to a nunnery" and vows to get revenge on Claudius for his father's death in, for ten points, what Shakespeare tragedy about the Prince of Denmark?**

ANSWER: The Tragedy of Hamlet, Prince of Denmark

(6) **This region is paralleled below ground by the andesite line. Subduction of the Juan de Fuca and Nazca plates powers this region's eastern zone. Both the 1964 Good Friday and 2011 Tohoku quakes occurred in this region, whose Mount (\*) Pinatubo and Mount Saint Helens have experienced powerful eruptions. For ten points, name this geologically active region that contains 75% of Earth's volcanoes and follows the rough outline of the Pacific Ocean.**

ANSWER: Ring of Fire (accept Circum-Pacific Belt; prompt on "Pacific Rim")

(7) **An artist from this country painted *Soft Construction with Boiled Beans*. A painting from this country's civil war depicts a flower growing from a sword and an impaled horse writhing under an (\*) eye-shaped lightbulb. A landscape with soft-textured clocks and a depiction of the bombing of *Guernica* are both from, for ten points, what home country of Salvador Dalí and Pablo Picasso?**

ANSWER: Kingdom of Spain (accept Reino de España)

(8) **In a short story by this author, a smart house cooks and cleans, unaware that its inhabitants have died in a nuclear holocaust. This author of "There Will Come Soft Rains" wrote a novel in which a rulebook tells (\*) firement to "start the fire swiftly." In a novel by this man, Clarisse McClellan's disappearance makes Guy Montag lose faith in his job as a book burner. For ten points, name this author of *Fahrenheit 451*.**

ANSWER: Ray Douglas Bradbury

(9) **This woman advised James Montgomery on a raid on the Combahee River. This woman had a prophetic vision of meeting John Brown, who called this woman "General" after they met. This nurse and spy during the (\*) Civil War carried a revolver on nearly 20 trips into the American South. "Moses" was the nickname of, for ten points, what conductor of the Underground Railroad, a woman who brought dozens of slaves to freedom?**

ANSWER: Harriet Tubman

(10) **These shapes are the subject of Book 3 of Euclid's *Elements*, whose tenth Proposition notes that two of these shapes cannot intersect at more than two points. Euclid also proposed that a quadrilateral drawn in one of these shapes will have opposite angles that add to (\*) 180 degrees. In classical construction, these shapes can be drawn with a compass. For ten points, name this geometric shape whose area is equal to pi times its radius squared.**

ANSWER: circle

(11) **This position was played by Daniel Carlson and Zane Gonzalez, who were each released after just two games in 2018. Another player at this position, Mason Crosby, failed five times in an October 2018 game. Matt Prater's (\*) 64-yard score is the record best for this position, and Sebastian Janikowski's 76-yard attempt is the longest miss in NFL history. For ten points, name this football position that is tasked with scoring field goals.**

ANSWER: kicker (accept additional information; do not accept or prompt on punter)

(12) **In this city, Timothy Leary first said “Turn on, tune in, drop out” at the Human Be-In. An anarchist group called the Diggers established Free Stores and Medical Clinics in this city’s neighborhood of (\*) Haight-Ashbury. The Mamas & The Papas sang a song celebrating this city as a place where people “Wear Flowers in [Their] Hair” in 1967. For ten points, name this California city where the Summer of Love attracted numerous hippies.**

ANSWER: San Francisco

(13) **An ion consisting of one atom of this element and four oxygen atoms is commonly added to a sugar molecule to start its breakdown, and three copies of that ion are present in ATP, the “currency” of cellular energy transfer. This element, which commonly exists in (\*) red and white forms, is found below nitrogen on the periodic table. For ten points, name this chemical element with atomic number 15 and atomic symbol P.**

ANSWER: phosphorus (accept P before mentioned)

(14) **In a story by these writers, a woman asks her husband to make more and more extravagant wishes from a powerful fish. These writers added an ending to another tale in which a huntsman cuts a (\*) grandmother and a girl with a red cap out of the belly of a wolf. For ten points, name these German brothers who collected fables like “Hansel and Gretel” and “Little Red Riding Hood.”**

ANSWER: Brothers Grimm (accept Wilhelm and/or Jakob Grimm; accept Grimms’ Fairy Tales)

(15) **According to legend, Artemis was too busy attending the birth of this ruler to stop her temple in Ephesus from burning down. The battles of Issus and Gaugemela were won by this ruler, who built a causeway to attack the island of Tyre and was (\*) tutored by Aristotle. Greece, Persia, and much of India was conquered by, for ten points, what “Great” ruler of Macedon who ruled one of the largest empires in ancient history?**

ANSWER: Alexander the Great (accept Alexander III of Macedon)

(16) **Simeon realized he could die in peace while under the influence of this entity, and after Zechariah named John the Baptist, he predicted the coming of Jesus with the power of this entity. This entity appeared as (\*) “tongues of fire” and caused the disciples to speak in strange languages during Pentacost, and descended to Jesus “like a dove” during his baptism. For ten points, name this entity that joins the Father and the Son in the Christian Trinity.**

ANSWER: Holy Spirit (accept Holy Ghost)

(17) **In 2008, the recovered text of this scientist’s lost *Palimpsest* was published. A machine for filling irrigation ditches is known as this man’s (\*) screw, and his namesake principle states that the weight of fluid displaced by a body equals the buoyant force acting on it. For ten points, name this Greek mathematician and inventor who stated the law of the lever and famously shouted “Eureka!”**

ANSWER: Archimedes of Syracuse

(18) **In an opera by Bartók, Judith opens seven doors in one of these locations owned by Duke Bluebeard. In another opera, Tosca sees the death of Cavaradossi from the (\*) parapets of one of these structures. *Tannhauser* inspired King Ludwig II to build one of these buildings called Neuschwanstein [noysh-van-stein].** For ten points, name this building, a common setting of *Lohengrin* and other medieval-inspired operas.

ANSWER: castle (accept Duke Bluebeard's Castle)

(19) **The Supreme Court ruled that this amendment applied to state governments in *Mapp v. Ohio*. This amendment specifically names “houses, papers, and effects” as under its protections. This amendment requires probable cause for a specifically-designated (\*) warrant to be issued.** For ten points, name this Bill of Rights amendment that protects against unreasonable searches and seizures.

ANSWER: 4th Amendment to the US Constitution

(20) **The narrator of this story stalks a man for eight nights until he hears a “groan of mortal terror.” This story’s narrator claims that he has an “acuteness of the senses” and sensitivity to an old man’s (\*) “vulture eye.”** The narrator confesses to three policemen because of the sound of “a watch enveloped in cotton” in, for ten points, what short story by Edgar Allan Poe, whose narrator imagines the beating of the title organ under the floorboards?

ANSWER: The Tell-Tale Heart

## Bonuses

(1) Answer the following about two similarly named but very different novels, for ten points each.

Name either the novel about Griffin, a scientist who creates a serum that makes him disappear, or the novel about an unnamed African-American narrator who feels unseen by society. The only difference between the two books' titles is the first article.

ANSWER: The **Invisible Man**

*The Invisible Man* is by H.G. Wells, but *Invisible Man* is by this African-American author, who also wrote *Juneteenth*.

ANSWER: Ralph Waldo **Ellison**

Although Ralph Ellison's work isn't typically classified as part of this region's Renaissance, he lived and worked in this New York neighborhood, where he set much of *Invisible Man*.

ANSWER: **Harlem**

(2) Frederick Sanger is the only person to win two Nobel Prizes in Chemistry, both of which were for determining the sequence of biomolecules. Answer these questions about his work, for ten points each.

Sanger's first Nobel Prize was awarded for finding the complete amino acid sequence of this hormone produced in the beta cells of the pancreas. Type one diabetics must take injections of this hormone to regulate their blood sugar.

ANSWER: **insulin**

Sanger's second Nobel Prize was for his method of sequencing these building blocks of DNA. Each of these molecules consists of a sugar, phosphate, and base.

ANSWER: **nucleotides**

The Sanger method of nucleotide sequencing eventually made possible this three billion dollar project that determined all base pairs in the 46 chromosomes of *Homo sapiens*. This project's initial report was published in 2001 and made free to the public.

ANSWER: **Human Genome** Project

(3) The writers of this question are not lawyers, so we strongly advise you to not treat the information in this bonus about legal defenses as official legal advice. For ten points each,

American court cases can be decided in a bench trial, in which the judge renders the verdict, or in a trial decided by one of these groups of people. Most criminal cases have 12 people, plus some alternates, in this group.

ANSWER: **jury**

The M’Naughten test, named for the attempted assassin of Robert Peel, is used to determine whether a defendant can claim this defense, which is used to explain why the defendant was not responsible for their actions.

ANSWER: **insanity** defense (accept word forms)

This Constitutional amendment protects defendants from double jeopardy, or from being put on trial for the same offense twice.

ANSWER: **5th** Amendment to the US Constitution

(4) Beethoven claimed to see a “spark of divine genius” within this composer, whose Symphony No. 4 is sometimes called his *Tragic Symphony*. For ten points each,

Name this Austrian composer who, despite dying at the age of 31, wrote 9 symphonies including the *Little C Major*, the *Great C Major*, and a famous *Unfinished* eighth symphony.

ANSWER: Franz Peter **Schubert**

Franz Schubert also wrote over 15 works, including *Death and the Maiden*, for string quartet, an ensemble including a viola, a cello, and two of these string instruments.

ANSWER: **violin**

Schubert’s “Death and the Maiden” string quartet was inspired by a *lied* [leed] he had written three years earlier. *Lieder* are German songs most commonly set for one of these musicians and a piano accompanist.

ANSWER: **vocalist** (accept **singer** and other equivalents; accept specific types, such as **soprano**, **alto**, **tenor**, or **bass**)

(5) This city-state’s agoge [uh-goh-gay] system trained young men for battle and inclusion in society; the training was successful enough that this city-state went without walls. For ten points each,

Name this highly militaristic ancient Greek city-state that lost 300 warriors in a mountain pass at Thermopylae in 480 BCE.

ANSWER: **Sparta**

The main Spartan force was not available for combat at Thermopylae, but Sparta did send an advance guard of 300 men under this king, who died with his men after a three-day battle.

ANSWER: **Leonidas I**

Leonidas’ 300 Spartans were defeated by this empire’s much larger force: over 2 million troops if you believe Herodotus, which scholars don’t. Xerxes [zerk-zees] led this empire against the Greeks, but was defeated at the naval Battle of Salamis.

ANSWER: **Persian** Empire (accept **Achaemenid** Empire)

(6) Attempts to keep this drink's price down included stocking vending machines with a few randomly empty bottles and asking the US Mint to create a 7.5 cent coin. For ten points each,

Name this drink, which was sold for five cents for roughly seventy years. This drink's biggest rival claims it tastes better in blind taste tests known as the "Pepsi Challenge."

ANSWER: Coca-Cola (accept Coke)

Some conspiracy theorists believe that Coca-Cola introduced this drink in 1985 just so that they could enjoy a sales boost when they re-introduced "Coca-Cola Classic."

ANSWER: New Coke (accept Coke 2)

Other conspiracy theorists believe that the New Coke plan was a gambit to switch the Coke formula from cane sugar to this cheaper sweetener, which has a four-letter acronym.

ANSWER: high fructose corn syrup (accept HFCS; prompt on corn syrup)

(7) This novel is one of its author's *Voyages extraordinaires* [voh-YAHJ ex-tra-or-dee-NAYR], a series of early science fiction adventure novels that explore the furthest reaches of the Earth. For ten points each,

Name this novel in which Professor Otto Lidenbrock leads an expedition through a volcano and into a series of undiscovered caverns, where he finds a hidden world of giants and dinosaurs deep underground.

ANSWER: Journey to the Center of the Earth (accept Journey to the Interior of the Earth; accept Voyage au centre de la Terre)

In *Journey to the Center of the Earth*, Professor Lidenbrock's expedition begins at the Snaefell volcano in this Nordic country. This country is the home of Hans Bjelke [Hans b-YELL-kuh], Professor Lidenbrock's guide.

ANSWER: Iceland (accept Ísland)

This early French science fiction author's adventure novels include *Journey to the Center of the Earth* and *Twenty Thousand Leagues Under the Sea*.

ANSWER: Jules Gabriel Verne

(8) This physics principle explains why a narrowing of the carotid artery will lead to a drop in blood pressure. For ten points each,

Name this principle which states that as the speed of a fluid increases, the pressure it exerts decreases. This effect also explains why the high winds of a hurricane can cause a roof to be lifted off by the higher pressure inside the house.

ANSWER: **Bernoulli's** principle

Bernoulli's equation can be determined from the fact that as an ideal fluid moves through a tube, the sum of potential energy and this form of energy must be constant. This energy of motion is often given by the formula "one-half times mass times velocity squared."

ANSWER: **kinetic** energy

One important application of Bernoulli's principle is the design of wings for these vehicles. Because air travels faster over the top of the wing, lift is generated, which allows these vehicles to fly.

ANSWER: **airplanes** (accept **planes**; prompt on "aircraft")

(9) For ten points each, name the following cash crops of the American South.

Pro-secession politicians argued that the South could stand on its own because its slaves provided this "King" crop, which was necessary for the North's textile industry to function.

ANSWER: **cotton**

John Rolfe developed the Orinoco strain of this crop, which he grew in the Virginia colony at the start of the 17th century. It became the backbone of the Virginian economy.

ANSWER: **tobacco**

Plantations in South Carolina, such as those owned by the Pinckney family, grew this crop that can be processed into a blue dye.

ANSWER: **indigo**

(10) The holder of this position is also the Bishop of Rome. For ten points each,

Name this leader of the Vatican and the Holy See. This position, currently held by Francis, is the head of the Catholic Church.

ANSWER: **Pope**

The Pope is elected by a conclave of these church leaders, known for their red vestments.

ANSWER: **Cardinals**

After this event, a Pope is tapped on the head three times with a silver hammer while being called by their birth name. This event is confirmed by the Camerlengo of the Holy Roman Church who claims the Ring of the Fisherman until it is destroyed.

ANSWER: **death** of a pope

(11) Low-quality telescope lenses probably explain why some astronomers saw crisscrossing canals on this planet for more than thirty years. For ten points each,

Name this outermost of the Solar System's rocky planets, known for its red color.

ANSWER: **Mars**

Larger in area than the state of Arizona, this volcano on Mars is the biggest in the Solar System. Its summit reaches a height of sixteen miles.

ANSWER: **Olympus Mons**

The lowest point on Mars is found within this impact crater in the southern hemisphere. Atmospheric pressure is so great at the bottom of this crater it could potentially hold liquid water.

ANSWER: **Hellas** Planitia

(12) Falsely accused French traitor Alfred Dreyfus was imprisoned on Devil's Island off the coast of what is now this country. For ten points each,

Name this South American département of France, the easternmost of three small countries on the northern border of Brazil.

ANSWER: **French Guiana** (do not accept or prompt on Guyana alone)

The three countries of the Guiana region were each colonized by different European powers; French Guiana is directly east of this former Dutch colony whose capital is Paramaribo.

ANSWER: **Suriname**

In 1964, France chose the district of Kourou in French Guiana as their location to perform this action. The decision was based on its proximity to the equator and its expanse of open water to the east, the same reasons why the US picked Cape Canaveral in Florida for this purpose.

ANSWER: rocket **launches** (accept anything indicating the ability for **spacecraft to take off**; prompt on any partial answers related to a space program that don't mention that the rockets take off there)

(13) A military operation in this country called Operation Eagle Claw was authorized only when Secretary of State Cyrus Vance took a brief vacation and was not present to oppose the plan. For ten points each,

Name this country that took 52 Americans hostage in 1979 and released them moments after Ronald Reagan was sworn in as President in 1981.

ANSWER: **Iran** (accept **Iran** hostage crisis)

This US President from Georgia was unable to resolve the Iran hostage crisis, either with Operation Eagle Claw or diplomatic measures.

ANSWER: James "Jimmy" **Carter**

Vance supported diplomatic talks with Ruhollah Khomeini, who became the Supreme Leader of Iran a month after the hostages were taken. Khomeini held this religious title, which means "Sign of God" in Arabic.

ANSWER: **Ayatollah**

(14) This term, which can also apply to functions and polynomials, is called the multiplicative inverse when it describes a real number. For ten points each,

Give this mathematical term for a number found by taking one divided by an original number. For the number four, this number is one-fourth.

ANSWER: reciprocal

Zero has no reciprocal, because division by zero is undefined. There are two numbers that are their own reciprocals; name both.

ANSWER: **1 and negative 1** (accept answers in either order; accept plus or minus 1; do not accept or prompt if only one number is given)

This positive number is approximately equal to 1.618, and is exactly equal to one plus this number's reciprocal.

ANSWER: phi [FEE or FYE] (accept the golden ratio; accept the golden mean; accept the golden proportion; accept the golden section; accept the golden cut; accept divine in place of "golden" in all answers)

(15) This poet wrote "my [love] is like a red, red rose" and a poem about a drunk man who interrupts a witches' sabbath. For ten points each,

Name this poet of "Tam o' Shanter" and "Auld Lang Syne."

ANSWER: Robert Burns

Burns wrote a poem that says that the "best laid schemes of" these animal "and men / gang aft agley" [gong oft ah-glay]. The poem describes the panic that this tiny rodent feels when her home is destroyed by a plow.

ANSWER: To a Mouse (accept mice)

Many of Robert Burns's poems, such as "Auld Lang Syne" and "Tam o' Shanter," are written to reflect the speech patterns of people with this home nationality of Burns, who himself lived slightly south of Glasgow and Edinburgh.

ANSWER: Scottish (accept Lowland Scots)

(16) This artist sculpted a penitent Mary Magdalene entirely from wood. For ten points each,

Name this sculptor of *The Feast of Herod* and *Gattamelata*, who also created the first free-standing bronze sculpture since antiquity.

ANSWER: Donatello di Niccolo di Betto Bardi

The aforementioned free-standing bronze sculpture depicts this biblical figure wearing a wide-brimmed hat and smiling as he stands over the severed head of his foe, Goliath.

ANSWER: King David (accept Dawud)

Donatello used marble to sculpt this bald prophet so realistically that Donatello is said to have commanded it to speak. Because of its bald head, Donatello's statue of this man is nicknamed "Zuccone" or "pumpkin."

ANSWER: Habbakuk (accept Statue of the Prophet Habbakuk)

(17) This ruler underwent a campaign of “burning the books and burying the scholars” to suppress Confucianism and unified the various sections in a single Great Wall of China. For ten points each,

Name this ancient Chinese ruler whose mausoleum in Shaanxi [shahn-she] became an archaeological find in 1974.

ANSWER: Qin **Shi Huangdi** (accept **Ying Zheng**; accept **Zhao Zheng**; prompt on Qin)

Qin Shi Huang [chin she hwahng] was buried with an army of thousands of sculptures made of this material.

ANSWER: **terracotta** (accept **terracotta** army, etc.; accept **clay**; accept **earthenware**; prompt on ceramics)

When the Terracotta Army of Qin Shi Huang was discovered in the 20th century, archaeologists studied the soil to verify Sima Qian’s [seema chee-an’s] account that the tomb included rivers of this liquid metal.

ANSWER: **mercury**

(18) This author used the pen name “Jonathan Oldstyle” to write a collection of critical letters, and published the satirical periodical *Salmagundi* under the pen name “Launcelot Langstaff.” For ten points each,

Name this early American author, who used yet another pen name to write *The Sketch Book of Geoffrey Crayon*, a collection of short stories that includes “The Legend of Sleepy Hollow.”

ANSWER: Washington **Irving**

*The Sketch Book of Geoffrey Crayon* includes this short story, supposedly written by historian Diedrich Knickerbocker, yet another pen name of Irving’s. In this story, the title Dutch settler wakes up from a twenty-year nap in the mountains of New York to discover that he slept through the American Revolution.

ANSWER: **Rip Van Winkle**

Instead of using his real name, Irving credited this collection of stories to “the author of the Sketch Book.” This book includes folk tales and essays about Irving’s travels in Spain, and is named for a castle near Granada.

ANSWER: Tales of the **Alhambra** (accept The **Alhambra**: a series of tales and sketches of the Moors and Spaniards)

(19) Answer the following about the reaction between silver nitrate and potassium phosphate in water, for ten points each.

Two products, silver phosphate and potassium nitrate, will form because both reactants have a high value for this constant in water. Silver nitrate’s value for this constant equals the concentration of silver cations times the concentration of nitrate anions.

ANSWER: **solubility product** (accept  **$K_{sp}$** ; prompt on “equilibrium constant”)

The formulas of silver nitrate and potassium nitrate each need coefficients of three to correctly write this kind of equation for the reaction. The same number of atoms of each element must appear on both sides for the equation to be called this.

ANSWER: **balanced** equation

Silver phosphate has a very low solubility product in water, so it forms this kind of solid product. These products sink to the bottom of a test tube while aqueous products stay dissolved in solution.

ANSWER: **precipitates**

(20) These creatures were tasked by Zeus to destroy Phineus's food to punish him for revealing a prophecy given by Zeus. For ten points each,

Name these half-bird, half-woman creatures from Greek mythology. These creatures, when not serving as the "hounds of Zeus," regularly carried off evildoers to the Erinyes.

ANSWER: harpy (accept harpies)

The harpies would have continued harassing Phineus, likely to the end of time, if it wasn't for the intervention of this leader of the Argonauts. Phineus thanked this man by telling him how to get past the Symplegades, which allowed this man to continue his quest for the Golden Fleece.

ANSWER: Jason (accept Iason)

In some stories, Jason also needed the help of Calais and Zetes, the sons of a god of this specific phenomenon. Boreas, the bringer of winter, was a god of this specific phenomenon.

ANSWER: the North wind (prompt on "wind")