

Round 5

First Half

(Tossup 1) **This man takes on the name Belteshazzar, and his friends Shadrach, Meshach, and Abednego are thrown into an extremely hot furnace for refusing to worship a golden idol. This man foretells the doom of Belshazzar's kingdom by interpreting some (*) writing on a wall, and later he emerges unharmed from a den of lions. For ten points, name this biblical character who maintains his faith while held captive in Babylon in a namesake book.**

ANSWER: Daniel

(Bonus 1) This mythological sister of Stheno and Euryale was punished by Athena for defiling her temple. For ten points each,

[Part A] Name this Gorgon, who was cursed to have hair made of snakes and a face that turned others to stone.

ANSWER: Medusa

[Part B] Medusa was eventually defeated by this hero, who used a shield as a mirror to freeze Medusa with her own gaze.

ANSWER: Perseus

[Part C] Perseus tricked the Gorgons' sisters, the Graeae, into telling him where to find weapons to defeat Medusa by stealing this body part, which the Graeae shared between them.

ANSWER: eye

(Tossup 2) **The volume of a parallelepiped [”parallel”-uh-PIPE-ed] can be found by taking these quantities and finding their triple product. Dividing one of these entities by its magnitude gives a “unit” one of these objects, which can be useful in coordinate geometry. Performing a (*) cross product on two of these objects yields another one of these objects, while a dot product gives a real number instead. Directed arrows often graphically show, for ten points, what mathematical objects that have both magnitude and direction, unlike scalars?**

ANSWER: vectors

(Bonus 2) Students first learning proof by contradiction often practice with a problem involving this number. For ten points each,

[Part A] Give this number, approximately equal to 1.414, the length of a hypotenuse of a right triangle whose legs are each 1 unit long.

ANSWER: square root of 2

[Part B] The square root of 2 is this type of number; that is, it cannot be written as a fraction, and its decimal expansion never terminates or repeats.

ANSWER: irrational number

[Part C] The common proof by contradiction showing the irrationality of the square root of 2 assumes that the square root of 2 *can* be written as a fraction; it does so by setting root 2 equal to a over b, where a and b have this property of sharing no common divisors.

ANSWER: coprime (accept relatively prime; do not accept or prompt on prime alone)

(Tossup 3) **This man patronized Alcuin of York, who helped develop new miniscule scripts at the scriptorium in Aachen. This king lost the entirety of his rearguard in a battle with the Basques at the Roncevaux Pass, an event recounted in the (*) *Song of Roland*.** This grandson of the “Hammer,” Charles Martel, was crowned by Pope Leo III on Christmas Day. For ten points, name this king of the Franks who took power in 800 AD.

ANSWER: Charlemagne (or Carolus Magnus; accept Charles the Great)

(Bonus 3) This case arose after the plaintiff rode a whites-only train car, despite being one-eighth black. For ten points each,

[Part A] Name this 1896 Supreme Court case that established the “separate but equal” doctrine for racial segregation.

ANSWER: Plessy vs. Ferguson (accept in either order)

[Part B] “Separate but equal” segregation in public schools stood for almost 60 years before being overturned in this case, which was unanimously decided by Earl Warren’s court.

ANSWER: Brown vs. Board of Education of Topeka, Kansas (accept in either order)

[Part C] Three years after *Brown*, this group of black students, including Ernest Green, attempted to integrate Central High School. They were blocked by segregationists supported by the Arkansas National Guard until President Eisenhower federalized the guard and brought in the 101st Airborne.

ANSWER: the Little Rock Nine

(Tossup 4) **The zeroth entry of this series allows players to switch between Billy Coen and Rebecca Chambers. Its third main game is subtitled *Nemesis* and allows players to take control of Jill Valentine. To emulate the (*) cancelled *P.T.*, the most recent game in this series is in first person and involves humanoid bacteria called the “Molded.” For ten points, name this horror video game series in which players fight against the undead and whose 2017 game is subtitled *Biohazard*.**

ANSWER: Resident Evil (accept additional given information, like Resident Evil 0; accept Biohazard)

(Bonus 4) In 1990, Wisconsin governor Tommy Thompson controversially line-item vetoed individual letters out of passed bills; in response, Wisconsin voted to ban that in an amendment cleverly nicknamed for this woman. For ten points each,

[Part A] Name this actress who has co-hosted a popular game show with Pat Sajak since 1982. In that time, she has revealed nearly one million letters.

ANSWER: Vanna White

[Part B] Vanna White and Pat Sajak co-host this game, in which contestants can buy vowels when they aren't going bankrupt spinning the title device.

ANSWER: Wheel of Fortune (prompt on Wheel)

[Part C] *Wheel of Fortune*, like *Jeopardy!*, was created by Merv, an entertainment mogul with this last name, shared by the central family of a Seth MacFarlane-created animated sitcom.

ANSWER: Griffin (accept Merv Griffin; accept Griffin family)

(Tossup 5) **In a novella by this author, Golovin falls while hanging curtains, leading to the title *Death of Ivan Ilyich*. This author wrote a very long novel about the Rostov and Bolkonsky families during the (*) Napoleonic War, and another novel about a woman who falls in love with Count Vronsky and throws herself under a train. For ten points, name this Russian author of *Anna Karenina* and *War and Peace*.**

ANSWER: Leo Tolstoi (accept Lev Nikolaievich Tolstoi)

(Bonus 5) Several early American heroes, including John Hancock and Samuel Adams, are fictionalized in this novel, whose title character delivers the *Boston Observer* and becomes a Whig in the days leading up to the American Revolution. For ten points each,

[Part A] Name this novel by Esther Forbes, in which a young silversmith's apprentice sustains a traumatic hand injury and serves as a spy for the Sons of Liberty.

ANSWER: **Johnny Tremain**

[Part B] *Johnny Tremain* also includes a fictionalized version of this historical man, who traveled through Lexington and Concord to warn Americans of incoming British troops with "a cry of defiance and not of fear," in a poem about his "midnight ride."

ANSWER: Paul **Revere**

[Part C] This American poet wrote "Paul Revere's Ride," which begins with the instruction to "listen, my children, and you shall hear / of the midnight ride of Paul Revere." This poet also wrote "Evangeline" and "The Song of Hiawatha."

ANSWER: Henry Wadsworth **Longfellow**

(Tossup 6) **The northern part of this country contains the Mapimi drainage basin. Indigenous peoples of this country call its tallest peak by the name "star mountain;" that mountain is Pico de Orizaba. This country's eastern and western coasts abut the (*) Sierra Madre Occidental and Sierra Madre Oriental mountain ranges.** For ten points, name this country where the Sierra Madre mountains extend into its northern neighbor, the United States.

ANSWER: **Mexico** (or the **United Mexican States** or **Estados Unidos Mexicanos**)

(Bonus 6) This building was designed by James Hoban in white painted sandstone. For ten points each,

[Part A] Name this residence, located at 1600 Pennsylvania Avenue, that was largely destroyed during the War of 1812.

ANSWER: **White House**

[Part B] Southeast of the White House is this central neighborhood of Washington D.C.; its name is used by newscasters to colloquially refer to Congress, which meets at the crest of this area.

ANSWER: **Capitol Hill**

[Part C] This engineer of French ancestry proposed a namesake plan for the layout of Washington D.C. after the Revolutionary War, placing the Capitol building at the top of Capitol Hill.

ANSWER: Pierre **L'Enfant** (accept **L'Enfant** Plan)

(Tossup 7) **Many organisms in this kingdom have spitzenkörper, which organize the growth of filaments. Model organisms from this kingdom include Neurospora and Saccharomyces [sack-ah-roh-my-sees]. A symbiotic relationship between certain (*) bacteria and members of this kingdoms forms lichen. The mycelium of organisms from this kingdom contain hyphae [hy-fee]. Mycology is the study of, for ten points, what kingdom that contains yeasts and mushrooms?**

ANSWER: fungi (or fungus)

(Bonus 7) For ten points each, give the following about the late stages of stellar evolution.

[Part A] A massive star's death is normally marked by this explosive event. One of these events was seen in 1054 and resulted in the Crab Nebula.

ANSWER: supernova (do not accept or prompt on nova alone)

[Part B] Stellar remnants are left behind after a star goes supernova. These stellar remnants of about 1.4 and 3 solar masses consist of solely the namesake type of uncharged subatomic particle.

ANSWER: neutron star

[Part C] 1.4 solar masses is this lower limit on the mass of a neutron star; similarly, this is also the upper limit on the mass of a white dwarf. This value, named for an Indian astronomer, does have some wiggle room.

ANSWER: Chandrasekhar limit

Sixty Second Rounds

The categories are ...

1. *Les Misérables*
2. Spanish-American War
3. Gasoline
4. The Orchestral Suite *The Planets*

Les Misérables

In *Les Misérables*, a novel that explores the culture of France from before the Battle of Waterloo to slightly after the 1832 June Rebellion, name the...

(1) Novel's author.

ANSWER: Victor Marie **Hugo**

(2) Protagonist who spends nineteen years in prison for stealing a loaf of bread and adopts a prostitute's daughter.

ANSWER: Jean **Valjean** (accept Monsieur **Madeleine**; accept Ultime **Fauchelevant**; accept prisoner **24601** or prisoner **9430**; accept **Jean-le-Cric** or **Jean the Jack**)

(3) Police inspector who is obsessed with recapturing the protagonist for breaking parole.

ANSWER: Inspector **Javert**

(4) Structure that the Friends of the ABC build in the streets of Paris during the June Rebellion.

ANSWER: a **barricade** (accept descriptions)

(5) Daughter of the deceased prostitute Fantine who marries Marius Pontmercy.

ANSWER: **Euphrasie** "**Cosette**" Fouchelavant (accept either underlined name)

(6) Elder Thenardier [**teh-nar-dee-AY**] sister, who is killed during the June Rebellion while protecting Marius.

ANSWER: **Éponine** Thenardier (accept **Éponine** Jondrette)

SPANISH-AMERICAN WAR

Name the...

(1) Island nation whose Havana harbor was the site of the sinking of the USS *Maine*.

ANSWER: Cuba

(2) Military base created on that island; it has controversially been a military prison for terrorists since 2002.

ANSWER: Guantanamo Bay (accept Gitmo)

(3) US President at the time. He was assassinated in 1901 by Leon Czolgosz [chol-gosh].

ANSWER: William McKinley

(4) Pacific country where George Dewey defeated the Spanish in Manila Bay.

ANSWER: the Philippines

(5) Practice used by William Randolph Hearst and Joseph Pulitzer to sell newspapers and rouse support for the war.

ANSWER: yellow journalism

(6) Pacific island captured bloodlessly by Henry Glass and the USS *Charleston*.

ANSWER: Guam

GASOLINE

What is the...

(1) Number of carbon atoms in octane, gasoline's primary component?

ANSWER: 8

(2) Process in which gasoline burns, which happens "internally" in an engine invented by Nikolaus Otto?

ANSWER: combustion (accept word forms; accept (internal) combustion engine)

(3) Metal element once added to gasoline to prevent knocking, but banned once it was linked to health concerns?

ANSWER: lead (accept tetraethyl lead)

(4) Common alternative fuel that, unlike gasoline, doesn't require a spark to ignite and is named for its German developer?

ANSWER: Diesel fuel (accept Rudolf Diesel)

(5) Air pollutant caused by gasoline exhaust whose name is a portmanteau of its two apparent components?

ANSWER: smog

(6) Process in which gasoline is separated out of crude oil, relying on differences in boiling points?

ANSWER: distillation

THE ORCHESTRAL SUITE *The Planets*

Name the...

(1) Composer of the suite.

ANSWER: Gustav **Holst**

(2) Country where that composer was born and where *The Planets* was premiered in 1918.

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

(3) Dwarf planet for which Colin Matthews wrote an extra movement in 2000, while it was still a planet.

ANSWER: **Pluto**, the Renewer

(4) Planet of the eight in our Solar System that is not a movement in the suite.

ANSWER: **Earth**

(5) Planet that is the “Bringer of War” and opens the suite.

ANSWER: **Mars**, the Bringer of War

(6) Type of musicians that are “faded out” at the end of the final movement.

ANSWER: women’s **chorus** (accept anything to do with **singer**(s) in the soprano and alto ranges; prompt on women)

Second Half

(Tossup 8) **This poem's speaker says that one object is "grassy and [wants] wear" and compares it to another that is "bent in the undergrowth," concluding that "the passing there / had (*) worn them really about the same."** Nevertheless, this poem's speaker plans to eventually claim that he "took the one less traveled by / and that has made all the difference." For ten points, name this poem by Robert Frost in which "two roads diverged in a yellow wood."

ANSWER: The Road Not Taken

(Bonus 8) John Milton revisited this work in a poem about the title location *Regained*. For ten points each,

[Part A] Name this epic poem that follows the fall of a beautiful angel from Heaven and the fall of Adam and Eve, who are told that they will need to leave the Garden of Eden.

ANSWER: Paradise Lost

[Part B] In *Paradise Lost*, this former angel declares that it is "better to reign in Hell than serve in Heaven" after rebelling against God and being cast down to govern the damned in Hell.

ANSWER: Satan (accept Lucifer)

[Part C] *Paradise Lost* was written while Milton had this medical condition, which he described in a sonnet titled "When I Consider How My Light is Spent." Because of this condition, Milton had to dictate the poem to helpers.

ANSWER: blindness

(Tossup 9) **The Loschmidt constant was the predecessor of this constant, which was first calculated by Jean Perrin. This constant multiplied by Boltzmann's constant gives the gas constant. At standard temperature and pressure, a sample of 22.4 (*) liters of any gas will have this constant's worth of particles.** For ten points, name this number of particles in a mole of a substance, equal to 6.02 times 10 to the 23rd power.

ANSWER: Avogadro's constant (or Avogadro's number or equivalents)

(Bonus 9) Answer the following about neurodegenerative diseases. For ten points each,

[Part A] This neurodegenerative disease occurs in patients with decreased levels of dopamine production in the brain, leading to tremors and shaky movement.

ANSWER: Parkinson's Disease

[Part B] Variant Creutzfeldt-Jakob disease is contracted from this disease, technically known as bovine spongiform encephalopathy. Misfolded proteins, or prions, cause this disease, whose outbreak in the UK has required recalls of beef.

ANSWER: mad cow disease

[Part C] Unlike other neurodegenerative diseases in which neurons die or are disabled, this disease is a deterioration of the myelin sheath surrounding the neurons. This disease, abbreviated MS, can cause muscle weakness, sense difficulties, and trouble with communication.

ANSWER: multiple sclerosis

(Tossup 10) **In 1798, this man was asked to make cannons and 10,000 muskets to prepare for possible war with France; while working on those orders, this man's experimentation with interchangeable parts made the technique popular for (*)** Northern manufacturing. This man's most famous invention spurred the growth of slavery in the South by making a certain cash crop economically viable. For ten points, name this American inventor of the cotton gin.

ANSWER: Eli Whitney

(Bonus 10) A leader of this country, Alberto Fujimori, legalized peasant militias to fight the Shining Path insurgency group. For ten points each,

[Part A] Name this country where Fujimori led from Lima.

ANSWER: Peru

[Part B] Fujimori was a Peruvian citizen of this Asian country's ethnicity. He fled to this country when he was accused of corruption in 2000.

ANSWER: Japan (accept Japanese-Peruvian)

[Part C] Shining Path made much of its money from the trafficking of this drug, which has also been trafficked by the Colombian group FARC and the Medellin Cartel.

ANSWER: cocaine

(Tossup 11) **An air and variations from this man's Suite number 5 in E major for harpsichord is known as "The Harmonious Blacksmith." King George I commissioned music from this composer for a barge concert on the Thames, and George II began the tradition of (*)** standing up during one of this composer's works that is now often performed around Christmastime. For ten points, name this composer of the *Water Music* whose oratorio *Messiah* includes the "Hallelujah" chorus.

ANSWER: George Friedrich Handel

(Bonus 11) Aircraft from Germany's Condor Legion bombed this town in 1937. For ten points each,

[Part A] Identify this town, whose namesake painting created two months after its destruction brought worldwide attention to the ongoing Spanish Civil War.

ANSWER: Guernica

[Part B] *Guernica* [gayr-nyee-kah] is a late work by this Cubist painter, who created *Boy with a Pipe* during his Rose period.

ANSWER: Pablo Picasso

[Part C] Among Picasso's other late works is the *Chicago Picasso*, which was this type of artwork. Picasso's *Guitar* and a depiction of Fernande Olivier's head are also this type of artwork.

ANSWER: sculpture (prompt on statue or bust)

(Tossup 12) **These people were thwarted by a wagon fort utilized by Andries Pretorius at the Battle of Blood River; that battle occurred while these people attempted to disrupt the Great Trek on the orders of their leader, Dingane [din-gah-nay]. Under the leadership of (*) Cetshwayo, this empire managed to win the Battle of Isandlwana when their impi, fighting in the buffalo horn formation, prevailed over British regulars. For ten points, name this kingdom of southern Africa, led in the 19th century by Shaka.**

ANSWER: amaZulu people (or kingdom, empire, etc.)

(Bonus 12) This monarch became the first British monarch to celebrate a Sapphire Jubilee in 2017. For ten points each,

[Part A] Name this current and longest-serving British monarch.

ANSWER: Elizabeth II (prompt on Elizabeth)

[Part B] Elizabeth surpassed this queen to become the longest-serving British monarch in history. This queen's reign is often depicted as an era of strict, moralistic behavior.

ANSWER: Victoria (accept Victorian era or similar)

[Part C] Both Elizabeth II and Victoria belong to royal houses that originated in this modern country. Public sentiment against this country in World War I prompted George V to rename his House of Saxe-Coburg and Gotha to the House of Windsor.

ANSWER: Germany

(Tossup 13) **A group of these literary animals are helped by the black-winged gull Kehaar, and one of these animals is assisted by Efrafan officer Captain Campion. The Owsla are a militant group of these animals that includes (*) Bigwig. In a novel about these animals, a group of them leave Sandleford, and Hazel and Fiver end up living in the title warren. For ten points, name these animals who are the central characters of *Watership Down*.**

ANSWER: rabbits (accept bunny or bunnies)

(Bonus 13) In this novel, Edmond Dantès gets his revenge on Mondego, Villefort, and Danglars, who accuse him of being a supporter of Napoleon and have him falsely imprisoned in the Château d'If. For ten points each,

[Part A] Name this French novel in which Dantès receives the tools for revenge from Abbé Faria and goes undercover as the title nobleman.

ANSWER: The Count of Monte Cristo (accept Le Comte de Monte-Cristo)

[Part B] *The Count of Monte Cristo* is by this Haitian-French author of *The Three Musketeers*.

ANSWER: Alexandre Dumas, père

[Part C] Before his betrayal, Dantès is engaged to this woman, who marries the traitorous Mondego while Dantès is in prison.

ANSWER: Mercédès Herrera Mondego

(Tossup 14) **This planet is surrounded by two gossamer rings named for Thebe and Amalthea. This planet was the largest to be used as a gravity assist by the *New Horizons* spacecraft. This planet is considered to shield the (*) inner solar system from comets and other debris. Callisto and Ganymede are two of the four moons of this planet that were discovered by Galileo. For ten points, name this largest planet of the solar system.**

ANSWER: Jupiter

(Bonus 14) Drag is a consequence of the fluid form of this force. For ten points each,

[Part A] Name this force that opposes the motion of one surface sliding against another.

ANSWER: friction

[Part B] For solid surfaces, the frictional force is proportional to this force, the perpendicular component of the force exerted by a surface on an object.

ANSWER: normal force

[Part C] When objects are not moving relative to each other, they experience this type of friction. Once it is overcome, they experience kinetic friction. This adjective also describes a form of electricity built up by a Van de Graff generator.

ANSWER: static friction (accept static electricity)

Extra Question

Only read if you need a backup or tiebreaker!

(Tossup 15) **Two paintings of these objects display parts of the words “pepper pot” on torn pieces of paper wrapped around these objects. A set of thirty-two paintings of these objects were re-created by their artist in different colors using (*) silkscreen printing, and represented each variety of these objects then available in grocery stores. Andy Warhol depicted, for ten points, what metal food containers produced by Campbell’s?**

ANSWER: Campbell’s Soup Cans (prompt on partial answers; prompt on tins or containers; prompt on Campbell’s before it is read)

(Bonus 15) This man was assassinated by Charles Guiteau after he was denied a federal appointment. For ten points each,

[Part A] Name this President whose assassination led to the Pendleton Civil Service Act, signed by his successor Chester A. Arthur.

ANSWER: James A. Garfield

[Part B] Both Pendleton, the sponsor of the Civil Service Act, and Garfield were from this state. This state was also the birthplace of Ulysses S. Grant and Rutherford B. Hayes.

ANSWER: Ohio

[Part C] Garfield denounced mistreatment of African-Americans during his speech at one of these events. At these events, the President-elect repeats the oath of office while being sworn in by the Chief Justice of the Supreme Court.

ANSWER: Presidential Inauguration