

# Round 1

Brad Fischer • Clare Keenan • Alec Krueger • Lauren Onel • Noah Prince  
Allison Salach • Zohra Sattar • Kristin Strey • Tyler Vaughan

## Tossups

(1) **In a novel by this author, the title character takes over Merlin's position by predicting an eclipse. Hank Morgan is a creation of this man, who wrote about the deceitful Duke and Dauphin and a boy who tricks children in (\*)** St Petersburg, Missouri into whitewashing a fence. *A Connecticut Yankee in King Arthur's Court* and a novel about a boy who rafts down the Mississippi River are by, for ten points, what creator of Huck Finn and Tom Sawyer?

ANSWER: Mark Twain (accept Samuel Langhorne Clemens)

(2) **This force is related to an accelerating observer by the Equivalence Principle of general relativity. Its fields can be visualized as wells, which spacecraft can use to speed up using this force as a (\*)** "slingshot." Galileo demonstrated that the effects of this force are constant using two balls of different masses. For ten points, name this force that accelerates objects at 9.81 meters per second squared toward the Earth.

ANSWER: gravity (accept gravitational force)

(3) **This political party's primary office was organized by Martin Bormann, the private secretary of its leader. Kurt Georg Kiesinger led the Christian Democrats and served as Chancellor in the 1960s despite his former membership in this political party. The (\*)** SS and SA were paramilitary wings of this party, whose propaganda was organized by Joseph Goebbels. For ten points, name this socialist political party that ruled the Third Reich of Germany under Adolf Hitler.

ANSWER: Nazi Party (accept National Socialist German Workers' Party or NS(DA)P; accept Nazi Germany; do not accept "Socialists" alone; do not accept "Fascists")

(4) **For one work in this genre, Michel Fokine [foh-keen] planned for three puppets on a wall to come to life. Prince Ivan spares a magical bird in another of these works that was produced by (\*)** Sergei Diaghilev. Igor Stravinsky's *Petrushka* and *The Firebird* are examples of, for ten points, what genre of artistic dance that combines classical music with challenging choreography, often incorporating moves like jetés [zheh-tays] and pliés [plee-ays]?

ANSWER: ballets

(5) **A group of texts found in these buildings at Saqqara describe a king hunting and eating the gods. Graduating sizes of mastabas were used by Imhotep to create Djoser's (\*)** "stepped" one of these buildings, and three of these structures belonging to Menkaure, Khafre, and Khufu were built near Giza. For ten points, name these enormous structures used to bury Egyptian Pharaohs.

ANSWER: Egyptian pyramids

(6) **These mathematical objects are the solutions to ordinary differential equations, which relate them with their derivatives. Composition of these objects make the codomain of one of them the domain of the other. The (\*) vertical line test can easily determine whether a given graph describes one of these objects. For ten points, name this mathematical term for a relation in which every input has exactly one possible output, often written in “f of x” form.**

ANSWER: functions

(7) **A character in this novel grows to over ten feet tall after being put on a stretching machine, since he had tried to appear on TV by using a shrink ray. The title character of this novel is deemed more virtuous than children like Mike (\*) Teavee and Augustus Gloop after he opens a Whipple-Scrumptious Fudgemallow Delight. For ten points, name this Roald Dahl novel in which Willy Wonka entrusts his Oompa-Loompas to the title boy after he finds a golden ticket.**

ANSWER: Charlie and the Chocolate Factory (do not accept Willy Wonka and the Chocolate Factory)

(8) **On this date in 1929, Albert Kachelleck, the Gusenberg brothers, and four other members of Bugs Moran’s gang were killed, probably on the orders of (\*) Al Capone. This Christian feast day celebrates a saint who, according to legend, broke Roman law by performing weddings for soldiers. A Prohibition-era gangster massacre took place on, for ten points, what holiday now often celebrated with flowers and written expressions of love?**

ANSWER: February 14 (accept St Valentine’s Day or St Valentine’s Day Massacre)

(9) **After this event, critics complained that a two-year timeline has not yet begun because no “official notice” was given that Article 50 would be invoked. In its aftermath, Nigel Farage stepped down as a party leader and (\*) Theresa May replaced David Cameron as Prime Minister. Stock markets plunged after news broke of, for ten points, what June 2016 public referendum that decided to end a country’s participation in a European political community?**

ANSWER: Brexit (accept descriptions of the United Kingdom’s June 2016 referendum to leave the European Union; accept equivalents, like Britain’s vote to leave the EU; prompt on partial answers)

(10) **Three atoms of this element are present in acetone, the simplest ketone; one of those atoms is double bonded with oxygen. This element’s four valence electrons allow it to form four bonds with other elements. This element’s allotropes include (\*) diamond, graphite, and stable nanotubes, and its 14-amu isotope is used in radiometric dating. For ten points, name this element, the focus of organic chemistry, with atomic number 6 and atomic symbol C.**

ANSWER: carbon (accept C before it is read)

(11) **Characters with this profession include Ornstein, the captain of Gwyn’s Four in *Dark Souls*. In a 2014 game partially titled for this profession, players fight the Order of No Quarter and use a shovel as a weapon. In *Hearthstone*, taunt minions can be (\*) killed by the battlecry of a Black one of these warriors, who says “None shall pass” in reference to a skit from *Monty Python and the Holy Grail*. For ten points, name this class of warriors that, in video games, often fight dragons with swords.**

ANSWER: knights (accept Dragon Slayer before “Order of No Quarter” is read)

(12) **This biblical figure’s father described him as either a “fruitful vine” or a “wild donkey’s foal,” and he was thrown in jail for refusing the romantic advances of Potiphar’s wife. This man slipped a silver cup into a bag of grain belonging to his brother, (\*) Benjamin. This man’s brothers, including Gad and Judah, sold him into slavery out of jealousy, since he was the son of Rachel and the favorite of his father, Jacob. For ten points, name this biblical man who owned a beautiful coat.**

ANSWER: Joseph

(13) **This country is home to the Turpan Water System, which collects runoff from the Flaming Mountains. Monks in this country accidentally altered the dangerous confluence of three rivers when they created a giant stone statue to bless sailors traversing it. A tomb for one leader of this country contained a (\*) mercury river and an army of Terracotta soldiers. The Leshan Buddha is located in, for ten points, what country, which was historically defended by its Great Wall?**

ANSWER: People’s Republic of China (accept Middle Kingdom; accept Zhongguo)

(14) **This author told a flower that “beauty is its own excuse for being” in “The Rhodora.” A “transparent eyeball” absorbs all the world has to offer in one of this man’s essays, and a speech he gave at Harvard was published as “The (\*) American Scholar.” This author wrote that “a foolish consistency is the hobgoblin of little minds” and rented the use of a pond to his friend, Henry David Thoreau. For ten points, name this Transcendentalist author of the essays “Nature” and “Self-Reliance.”**

ANSWER: Ralph Waldo Emerson

(15) **A failure to complete this project was remedied by Scotland’s 1707 union with England, as Scottish financiers failed to complete it at the Gulf of Darién. When this project was completed in 1914, it incorporated a valley through the Gaillard Cut, the man-made (\*) Gatun Lake, and a series of three locks into a 48-mile long structure. For ten points, name this engineering project that cut across Central America to connect the Atlantic and Pacific Oceans.**

ANSWER: Panama Canal

(16) **One of these events radiates from Eltanin and Rastaban and is produced by Earth’s intersection with Giacobini-Zinner’s debris path. Another of these events appears to originate from the constellation Perseus, as seen from the (\*) ground, and occurs each year in August. The Draconids and Perseids are examples of, for ten points, what brilliant celestial displays in which hundreds of “shooting stars” appear?**

ANSWER: meteor showers

(17) **In a painting by this artist, five peasants gather around the title food under the light of a single lantern. This man painted a yellow restaurant in *Café Terrace at Night*, and this artist of *The Potato Eaters* also painted a series of (\*) *Sunflowers* while living in Arles. This man painted the village of Saint-Rémy [son-ray-mee] under a swirling sky while institutionalized for cutting off his own ear. For ten points, name this Dutch painter of *Starry Night*.**

ANSWER: Vincent Willem van Gogh

(18) **These plastids contain translocons called Tic and Toc, and replicate independently in the mesophyll of leaves. Within these double-membraned organelles, a fluid called (\*)** stroma surrounds grana, stacks of thylakoids that carry out light-dependent reactions. For ten points, name these cell organelles that contain chlorophyll, a green pigment that helps conduct photosynthesis.

ANSWER: chloroplasts

(19) **In a short story written in this language, the book *The Combed Thunderclap* is kept in an infinite library of hexagonal rooms. A poet wrote in this language that “tonight I can write the saddest lines” as part of his (\*)** *Twenty Love Poems and a Song of Despair*. *The Garden of Forking Paths* is a collection in, for ten points, what language that was used by Jorge Luis Borges and Pablo Neruda, writers from Argentina and Chile?

ANSWER: Spanish (accept Español)

(20) **A wagon train retreating from this battle was caught at Monterey Pass, though George Meade couldn’t catch up to inflict serious damage. On the last day of this battle, Lewis Armistead broke the enemy line at “the Angle,” a spot now commemorated as the (\*)** “High Water Mark of the Confederacy,” and Pickett’s Charge failed to turn the tide of this July 1863 battle. For ten points, name this battle of the Civil War, whose site was made a cemetery by President Lincoln in a famous address.

ANSWER: Battle of Gettysburg (accept Gettysburg Address)

## Bonuses

(1) In June 1976, thousands of high school students in Soweto, a township outside this city, protested the use of Afrikaans as the official teaching language, and over 100 protesters were killed by police. For ten points each,

Name this city, the largest in its country. Soweto was officially incorporated into this city in 2002.

ANSWER: **Johannesburg**

Johannesburg is the largest city in this African country, where Afrikaans was supported by the controlling government as part of an official state policy of racial segregation called Apartheid.

ANSWER: **South Africa**

This late President of South Africa and Nobel Peace Prize winner lived in Soweto until his 1962 arrest and transfer to Robben Island; he briefly returned to Soweto after his 1990 release from prison.

ANSWER: Nelson **Mandela**

(2) For ten points each, give the following about the Middle Eastern religion Zoroastrianism.

In the Zoroastrian depiction of this event, Ahura Mazda formed Gayomard and six Amesha Spentas, divine immortals who carried out this process. In Christianity, this process took place over six days, as told in the opening chapter of Genesis.

ANSWER: **creation** of the Earth (accept “universe” or “heavens” in place of “Earth”)

The Zoroastrian *Vendidad* provides instructions for disposing of these things. To prevent contamination of the earth or of fire, these objects should be left on Towers of Silence for removal by scavenging birds.

ANSWER: dead **bodies** (accept **corpses** or equivalents)

Zoroastrianism was the dominant religion of this Middle Eastern region until it was conquered in the seventh century by the Rashidun Caliphate. This region roughly corresponds with modern Iran.

ANSWER: **Persia** (accept **Sasanian** Empire)

(3) For ten points each, give the following about Young’s double slit experiment.

The double slit experiment starts by shining light through a single slit and noting the effects of this phenomenon, in which light spreads as it passes through the hole.

ANSWER: **diffraction**

The interference pattern demonstrated in the two-slit phase of the experiment showed that these quantum units of light displayed wave properties.

ANSWER: **photons**

The double slit experiment provided evidence of the duality of light, that light can be described as behaving both as waves and as these small fragments of matter. Electrons, neutrons, and photons are often described as these objects.

ANSWER: **particles** (accept elaborations, like (sub)atomic **particles**)

(4) For ten points each, answer the following about literary forests.

Madame Ranevskaya's land is purchased by Lopakhin, who chops down all of her trees, in *The Cherry Orchard*, a play by this Russian playwright of *Uncle Vanya*.

ANSWER: Anton Pavlovich **Chekhov**

This English literary character, who appears in novels by Howard Pyle and Sir Walter Scott, lives in Sherwood forest with his "Merry Men," who help this man rob the rich to feed the poor.

ANSWER: **Robin Hood** (accept Robin of **Locksley**; prompt on partial answer)

Robin Hood appears as "Locksley" in this Sir Walter Scott novel, in which the title knight jousts with the Black Knight, who is King Richard in disguise, and helps save Rebecca and Lady Rowena.

ANSWER: **Ivanhoe**

(5) For ten points each, answer the following about references to hip-hop and musicals in Lin-Manuel Miranda's hip-hop musical, *Hamilton*.

The *Hamilton* song "Ten Duel Commandments" is a direct adaptation of this rapper's work. After this rapper's death in a 1997 shooting, his tracks "Hypnotize" and "Mo Money Mo Problems" reached number one on the Billboard Hot 100.

ANSWER: The **Notorious B.I.G.** (accept **Biggie** Smalls or Christopher **Wallace**; prompt on Smalls)

Another shoutout to Biggie Smalls is Alexander's spelling of his own name during this third song in *Hamilton*, in which he notes "I'm just like my country, I'm young, scrappy, and hungry."

ANSWER: **My Shot**

In "Right Hand Man," George Washington introduces himself as "the model of" one of these military leaders, as does Stanley in a patter song in Gilbert and Sullivan's *Pirates of Penzance*.

ANSWER: **Modern Major General** (prompt on "Major General" but not major or general)

(6) On the night of this battle, a lawyer sailed to an enemy ship to negotiate the release of Dr. William Beanes. For ten points each,

Name this September 1814 battle in which a "star fort" overlooking Baltimore Harbor survived a night of shelling relatively unscathed.

ANSWER: Battle of **Fort McHenry** (prompt on Battle of Baltimore)

The Battle of Fort McHenry took place during this war between the United States and Great Britain. This war ended with the Treaty of Ghent.

ANSWER: War of **1812**

This aforementioned lawyer was held on a British ship for safety during the shelling of Fort McHenry. The sight of an American flag above the Fort inspired him to write a poem now used in the American national anthem.

ANSWER: Francis Scott **Key**

(7) Free radicals catalyze a reaction that converts this compound into a diatomic form; as a result, this compound can be depleted from the atmosphere through certain air pollution. For ten points each,

Name this triatomic form of oxygen, which provides atmospheric protection against harmful solar radiation.

ANSWER: ozone (prompt on O<sub>3</sub>)

A protective layer of ozone exists in this region of Earth's atmosphere, which lies just above the troposphere.

ANSWER: stratosphere

Ozone in the stratosphere absorbs radiation in this band of the electromagnetic spectrum; as a result, temperatures are higher at the top of the stratosphere than they are at the bottom. This type of radiation has wavelength just shorter than that of visible light.

ANSWER: ultraviolet radiation (accept UV)

(8) This man wrote a poem in which “under a spreading chestnut tree / the village smithy stands” and another in which a historical pilgrim seeks the love of Priscilla Mullins. For ten points each,

Name this early American poet of historically-inspired poems like “The Courtship of Miles Standish” and “The Village Blacksmith.”

ANSWER: Henry Wadsworth Longfellow

Longfellow wrote about this American hero, a silversmith who rode to Lexington and Concord, Massachusetts to warn the colonists that the British were coming.

ANSWER: Paul Revere (accept Paul Revere's Ride)

Longfellow also wrote a fictionalized “Song of” this Mohawk leader, who marries Minnehaha and lives “by the shores of Gitchee Gumee.”

ANSWER: Hiawatha (accept Song of Hiawatha)

(9) This group of disorders commonly manifests as an aversion to spiders, open spaces, the number 13, or heights. For ten points each,

Give this general term for anxiety disorders from the Greek for “fear.”

ANSWER: phobias

This phobia is often described as the fear of open spaces, since this term comes from the Greek for “fear of public square.” Officially, this term refers to any anxiety stemming from the inability to escape an unsafe environment.

ANSWER: agoraphobia

In 1920, Rosalie Rayner and this behavioral psychologist experimented on “Little Albert,” creating a conditioned fear of a white rat, and inadvertently made the child afraid of all furry objects.

ANSWER: John Watson

(10) A painting is said to adhere to this principle if a rectangle drawn in the painting features something interesting 61.8% of the way along it. For ten points each,

Name this aesthetically pleasing ratio, expressed as the mathematical constant phi [fee], that is common in classical artwork.

ANSWER: **golden ratio** (accept **golden mean** or **golden proportion** or **golden section** or **golden cut**; accept **divine** in place of “golden” in all answers)

In keeping with the golden ratio, a little more than the top half of this Diego Velazquez painting is taken up by the ceiling and back wall of the room, dominating the small scene of the Infanta Margarita Teresa and her maids of honor.

ANSWER: Las **Meninas** (accept The **Ladies in Waiting**)

Despite hundreds of arguments otherwise, the Parthenon on this city’s Acropolis was not in any way designed with the golden ratio in mind.

ANSWER: **Athens**

(11) For ten points each, answer the following about the numbers three, five, and seven.

Three, five, and seven can be the side lengths of one of these three-sided polygons, because the sum of the smaller two is greater than the third.

ANSWER: (scalene) **triangle** (accept **triangle** inequality)

Seven is greater than five and five is greater than three. Because the “greater than” relation has this property, you can assume that seven is greater than three, as well.

ANSWER: **transitive** property (accept word forms like **transitivity**)

Three, five, and seven are the only set of three of these numbers that are two apart from each other. In 2013, Yitang Zhang announced a monumental proof toward answering whether there are infinitely many pairs of these numbers that are two apart, like eleven and thirteen.

ANSWER: **prime** numbers (accept twin **primes**)



(12) This advocate for landmine removal was killed in August 1997, a week before Mother Teresa's death. For ten points each,

Name this member of the British royal family, the first wife of Prince Charles. After her death, Elton John re-wrote the song "Candle in the Wind" as a tribute.

ANSWER: Princess Diana

Princess Diana was killed in this sort of accident. An official investigation blamed the intoxicated Henri Paul for causing it, rather than the paparazzi who had pursued Princess Di.

ANSWER: car crash (accept equivalents that automobile accidents)

The car crash took place in a tunnel near the Pont de l'Alma bridge in this European city.

ANSWER: Paris

(13) Charles Darnay is sentenced to be executed for the crimes of the Marquis St Evrémonte [mar-KEE son-teh-vray-MOND] and his family in this novel, which is set in London and Paris. For ten points each,

Name this novel about the French Revolution, in which Sydney Carton's love for Lucie prompts him to take advantage of his physical similarity to Charles and replace him at the guillotine.

ANSWER: A Tale of Two Cities

In *A Tale of Two Cities*, this woman encodes the names of those condemned to the guillotine in her knitting, and conspires to have Charles Darnay killed.

ANSWER: Madame Therese Defarge (both names required; accept Therese Defarge; prompt on "Defarge")

This author of *The Old Curiosity Shop* and *Oliver Twist* wrote *A Tale of Two Cities*.

ANSWER: Charles John Huffam Dickens

(14) One of these instruments made by Stradivarius was owned by Jacqueline du Pre, who disliked it for its unpredictability. For ten points each,

Name this large string instrument. It provides the lowest range in a traditional string quartet and the second-lowest range in many orchestras, behind only the double bass.

ANSWER: violoncello

The Davydov Stradivarius cello once played by Jacqueline du Pre now belongs to this Chinese-American cellist, possibly the most popular classical musician in America.

ANSWER: Yo-Yo Ma

Yo-Yo Ma has used the Davydov to play this Camille Saint-Saëns [san-sons] piece for cello and piano, the 13th movement of *The Carnival of the Animals*.

ANSWER: The Swan (accept Le Cygne)

(15) Bosons are not subject to this principle because they have symmetric wave functions. For ten points each, Name this principle of quantum mechanics, named for an Italian scientist, which dictates that two fermions cannot share the same quantum state.

ANSWER: Pauli exclusion principle

The primary use of the Pauli exclusion principle describes the positioning of these negatively-charged particles around the nucleus of an atom.

ANSWER: electrons

Electrons, like all fermions, have a half-integer value for this quantity, one of the four quantum numbers. This quantity describes the angular momentum of a particle.

ANSWER: spin (prompt on  $m_s$ )

(16) According to legend, this man ordered Frederic Remington to remain in then-quiet Cuba, telling him “you furnish the pictures, and I’ll furnish the war.” For ten points each,

Name this owner of the *New York Journal*, a rival paper of Joseph Pulitzer’s *New York World* in the late 19th century.

ANSWER: William Randolph Hearst

Hearst and Pulitzer’s newspapers engaged in this “colorful” form of sensationalist journalism, using catchy headlines instead of soundly-researched facts to attract readers.

ANSWER: yellow journalism

Hearst’s yellow journalism is often cited for raising support for the United States’ 1898 war against this European country over possession of Cuba, the Philippines, and other islands.

ANSWER: Spain (accept Spanish-American War)

(17) Answer the following about works of literature that have sparked debates about their authorship, for ten points each.

”Anti-Stratfordians” believe that this man did not write the many plays attributed to him, though most experts believe that he is in fact the author of such plays as *King Lear*, *Othello*, and *A Midsummer Night’s Dream*.

ANSWER: William Shakespeare

Pierre Louÿs wrote two essays asserting that Moliere’s plays were actually written by Pierre Corneille [kor-NAY], an author in this European language.

ANSWER: French language (accept la langue français)

Harper Lee was the best friend and research assistant of this man, leading to rumors that he may have written her novel *To Kill a Mockingbird* and that she in turn may have contributed to this man’s novels, such as *In Cold Blood* and *Breakfast at Tiffany’s*.

ANSWER: Truman Capote (accept Truman Streckfus Persons)

(18) For ten points each, answer the following about sickle cells.

Sickle Cell is a genetically inherited disorder in which these cells are misshapen, causing the obstruction of capillaries.

ANSWER: **red blood cells** (accept **erythrocytes**; prompt on “blood cells”)

Sickle cell disorders are caused by an abnormality in this protein, which carries oxygen in the blood.

ANSWER: **hemoglobin**

The trait that creates sickle cell disorders also protects against this mosquito-borne disease, possibly because the Plasmodium parasite that causes this disease can't complete its life cycle on the diseased cells.

ANSWER: **malaria**

(19) Because of widespread malaria in Jamestown, this city was made the capital of its colony for eighty years in the 1700s, until Governor Thomas Jefferson declared Richmond the capital instead. For ten points each,

Name this city, home to the second-oldest college in the U.S. and a district that serves as a living museum of colonial history.

ANSWER: (Colonial) **Williamsburg**

Just east of Williamsburg is this town, the site of a crucial siege that ended on October 19, 1781.

ANSWER: **Yorktown**

Williamsburg, Yorktown, and Jamestown form a “Historic Triangle” on the east coast of this U.S. state.

ANSWER: **Virginia**

(20) Dogs hold many varied positions in Greek myths. For ten points each,

Name this three-headed dog who guards the entrance to Hades.

ANSWER: **Cerberus**

When Odysseus returned to Ithaca after the Trojan War, this dog was the only creature who recognized him. Shortly after reuniting with his master after decades apart, this long-lived dog died.

ANSWER: **Argos**

Aura was the dog of this legendary huntress, a devotee of Artemis and only female Argonaut, who challenged all of her would-be husbands to a footrace.

ANSWER: **Atalanta**