

## Round 3

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

### Tossups

(1) **This man painted *The Separation of Light from Darkness* and *The Last Judgment*, in which he appears in the flayed skin of Saint Bartholomew, in a series of frescoes in a Vatican (\*) chapel. This man's only signed work is a statue of Mary cradling the body of Jesus, and he sculpted a young man standing contraposto with a slingshot over his shoulder. For ten points, name this Florentine sculptor of *Pietà* and a marble *David*.**

ANSWER: Michelangelo di Lodovico Buonarrotri Simoni

(2) **A Chicago reporter at this event made a record that was only later paired with newsreel footage; the record is believed to be accidentally sped up, giving the reporter a high voice. Herbert Morrison's report of this event described the (\*) "falling on the mooring-mast" before crying, "Oh, the humanity!" For ten points, name this May 6, 1937 tragedy in New Jersey, in which thirty-five people died aboard a German zeppelin that caught fire.**

ANSWER: LZ 129 Hindenburg disaster

(3) **Objects undergoing this phenomenon have their trajectories altered by the Magnus effect. Reference frames in this phenomenon experience the fictitious Coriolis force. (\*) Precession is a change in the orientation of objects undergoing this phenomenon. An analogue for Newton's Second Law in this phenomenon states that acceleration times moment of inertia is equal to torque. For ten points, name this type of movement undergone by gyroscopes in which an object spins around an axis.**

ANSWER: rotation (accept word forms like rotating; prompt on descriptions like "spinning" or "turning" before "spins" is read)

(4) **This player caused Mike Breen to add a second "bang" to his catchphrase by hitting a near half-court shot to defeat Oklahoma City. This player was fined \$25,000 after he struck a fan with his (\*) mouthguard during a 14 point loss in Game 6 of the 2016 NBA Finals. The Splash Brothers are Klay Thompson and, for ten points, what Under Armour spokesman and long-range point guard, the currently reigning NBA MVP for the Golden State Warriors?**

ANSWER: Stephen "Steph" Curry

(5) **This novella's title character asks the narrator to give him a sheep to eat baobab saplings, and is pleased to receive a drawing of a box containing a sheep. In this novella, a geographer tells a traveler that he does not record "ephemeral" things, and can't put the boy's beloved (\*) rose on a map. For ten points, name this novella in which a stranded pilot meets a mysterious child in a desert, written by Antoine de Saint-Exupéry [sent ex-oo-pay-REE].**

ANSWER: The Little Prince (accept Le Petit Prince)

(6) **This god was accompanied into battle by Geri and Freki, since he gave them all his food. This god will attack Fenrir with his spear, Gungnir, at Ragnarok, and he kept a pair of messenger ravens, (\*) Huginn and Muninn.** This god gained wisdom from the Well of Mimir by losing an eye. For ten points, identify this chief Norse god, the father of Thor.

ANSWER: **Odin** (accept **Wotann**)

(7) **The size of these phenomena is determined by the fetch behind them. Local conditions generally don't affect a swell of these phenomena. When these phenomena break, they release kinetic energy as matter (\*) falls from its maximum amplitude.** These phenomena may shoal in shallow depths, and they do not occur during Beaufort-0 conditions, as there is no wind. For ten points, name this physical phenomenon, a rippling motion on the surface of a body of water.

ANSWER: surface **waves** (accept ocean **waves**; accept descriptions like **waves on the surface** of water)

(8) **In a novel by this author, Harriett Smith is the victim of failed matchmaking attempts by the title woman. In two of this author's novels, Edward Ferrars and Colonel Brandon marry Elinor and Marianne (\*) Dashwood, who represent the title concepts, and Mr Darcy falls in love with Elizabeth Bennett despite their preconceived ideas about each other.** For ten points, name this English author of "sentimental novels" like *Emma*, *Sense and Sensibility*, and *Pride and Prejudice*.

ANSWER: Jane **Austen**

(9) **To celebrate the opening of the Panama Canal, this city held a 1915 exposition in its Balboa Park. This city sits south of the Marine base Camp Pendleton. Its namesake bay, which opens between Point Loma and (\*) Coronado, is home to the United States Navy's Pacific fleet. Mission Bay is home to Sea World in this city, where Balboa Park houses a large open-air zoo.** For ten points, name this city in southern California directly across the border from Tijuana.

ANSWER: **San Diego**, California

(10) **This country owned a colony that expanded as far south as Fort Ross in modern-day Sonoma. In 1848, St. Michael's Cathedral was built in this country's colonial town of (\*) Sitka.** In 1867, this country received \$7.2 million in a land deal orchestrated by Secretary of State William Seward, labeled a "folly" by his opponents. For ten points, name this country whose American colonies, including Alaska, were founded in the name of the tsars.

ANSWER: **Russian** Empire (do not accept "USSR" or "Soviet Russia")

(11) **On the day before this holiday, some believers practice kapparot, the swinging of a chicken. This holiday includes readings from the Book of Jonah and ends with the ne'ila prayer. The Kol Nidre [kohl nee-dray] prayer is recited on this last of the High Holy Days that follow (\*) Rosh Hashanah.** This holiday includes a day of fasting and vidui [vee-dwee], the confession of sins. For ten points, name this Jewish "Day of Atonement."

ANSWER: **Yom Kippur** (accept **Day of Atonement** before it is read)

(12) **In this country, secret societies known as “charcoal burners” plotted uprisings against French occupiers. A secret alliance was made between Napoleon III and this country’s first prime minister, Count Cavour. This country unified under King (\*)** Victor Emmanuel II in the Risorgimento. The Redshirts under Giuseppe Garibaldi fought for, for ten points, what European country that includes land held by the former kingdoms of Sardinia, Naples, Sicily, and Rome?

ANSWER: Italy (accept Italia)

(13) **Staining with tetrazolium will indicate if this process is occurring. Stages of this process include chemiosmosis, in which most of the “payoff” is produced, and glycolysis, which begins this process by breaking down a glucose molecule. (\*)** Waste products from this process can include lactic acid, as in muscle cells, or ethanol, as in fermentation. For ten points, name this cellular process that converts nutrient energy into ATP, providing fuel for the cell’s activity.

ANSWER: cellular respiration (prompt on fermentation before it is read by asking “can you be less specific?”)

(14) **In this play, Thomas Danforth reveals that a doll made by Mary Warren has been found in the protagonist’s home, skewered on a pin. Betty Parris is seen dancing naked in this play, in which Elizabeth’s husband, John, has an affair with (\*)** Abigail Williams. Giles Corey demands “more weight” until he is crushed to death, and the slave Tituba is accused of casting curses in, for ten points, what play by Arthur Miller about the Salem witch trials?

ANSWER: The Crucible

(15) **In one work, this man argues about the nature of piety, asking whether something is holy because the gods love it or vice versa, with Euthyphro [youth-uh-fro]. At the end of that work, this man laments that he has not learned anything about piety, and is therefore still doomed in his upcoming trial for (\*)** corrupting the youth of Athens. For ten points, name this ancient Greek philosopher who was executed via a cup of poison hemlock.

ANSWER: Socrates (accept Euthyphro before it is read)

(16) **This composer played his 26th piano concerto at the coronation of Leopold II, even though he had not written out much of the left hand part. There may be a lost fifth movement of this composer’s 13th serenade for string quartet, listed as number 525 in the (\*)** Köchel catalogue and nicknamed “Eine Kleine Nachtmusik.” For ten points, name this Austrian composer, a child prodigy who died at age 35, leaving an unfinished *Requiem* and finished works like *The Marriage of Figaro*.

ANSWER: Wolfgang Amadeus Mozart

(17) **In 1982, gunmen tried to assassinate this man in Dujail, and he responded by ordering the executions of over 140 Shiites believed to be involved. This leader, who was found in 2003 near Tikrit in a (\*)** “spider hole,” was charged with crimes against humanity and hanged in 2006. This dictator’s 1991 invasion of Kuwait sparked the first Gulf War, and he was deposed by US forces in the second Gulf War. For ten points, name this former leader of Iraq.

ANSWER: Saddam Hussein (prompt on “Saddam” alone)

(18) **Henry's Law** notes that one of these systems will absorb gas proportional to the partial pressure of the gas, a result important to deep-sea divers. Immiscible fluids cannot form one of these systems, which can become (\*) supersaturated under certain conditions, then shocked to force precipitation. Water is considered a "universal" generator of these systems. For ten points, give this term for a homogeneous mixtures of a solute in a solvent.

ANSWER: solutions

(19) In *Things Fall Apart*, Ekwefi claims that a feast for these animals resulted in tortoises having segmented shells. In the *Arabian Nights*, Sinbad collects diamonds from an island inhabited by enormous ones of these animals called (\*) rocs ["rocks"], and later steals one of their eggs. Examples of these animals include Chanticleer and the mythical phoenix. For ten points, name this family of animals, exemplified by Chicken Little.

ANSWER: birds (accept aves or avians)

(20) For a given triangle, there exists one of these shapes that passes through its sides' midpoints, its altitudes' feet, and three other significant points. You cannot draw one of these shapes through a non-square rhombus's four vertices; as a result, those rhombuses are not (\*) cyclic. An ellipse with both focuses at the same point is essentially, for ten points, what shape, defined as all points an equal distance away from a center, through which a diameter can be drawn?

ANSWER: circle

## Bonuses

(1) Roughly 2.5 hours of EVA walking took place at this location, which was abandoned on July 21, 1969 after about 21 hours. For ten points each,

Name this site that, like five further sites, is now home to preserved footprints and a plaque reading “We came in peace for all mankind.” You can name either the *mare* or the base name, which was granted after the *Eagle* landed.

ANSWER: Sea of Tranquility or Tranquility Base (accept Mare Tranquillitatis; prompt on the Moon)

Tranquility Base was established during this NASA mission.

ANSWER: Apollo 11

The announcement “Tranquility Base here. The *Eagle* has landed.” was made by this commander of *Apollo 11*. He exited the Lunar Module shortly before his crewmate, Buzz Aldrin.

ANSWER: Neil Armstrong

(2) Visual aspects of performances by some of these groups include baton twirling and color guard work, as seen in drum and bugle corps. For ten points each,

Name this style of band that commonly provides entertainment in high school and college football halftime shows.

ANSWER: marching band (accept elaborations, like military-style or corps-style marching bands; prompt on military band)

Direction is provided from the director to a marching band through this person, who often marches with the band to give tempo commands with a baton or whistle.

ANSWER: drum major (do not accept “conductor” or “director”)

This American “March King” and composer of “Stars and Stripes Forever” modified the tuba for marching purposes, inventing an instrument now named for him.

ANSWER: John Philip Sousa (accept Sousaphone)

(3) This novel opens by introducing Stiva and Dolly Oblonsky and declaring that “each unhappy family is unhappy in its own way.” For ten points each,

Name this novel titled for Stiva’s sister, who has an affair with Count Vronsky and ultimately throws herself under a train.

ANSWER: Anna Karenina

Konstantin Levin, who courts Dolly’s sister Kitty, is a semi-autobiographical portrayal of this Russian author of *Anna Karenina* and *The Death of Ivan Ilyich*.

ANSWER: Leo Nikolayevich Tolstoy (accept Lev Nikolayevich Tolstoy)

Tolstoy considered *Anna Karenina* his first true novel, although he had earlier published this work. This novel was originally titled *The Year 1805* and extensively details the lives of five Russian families during the Napoleonic wars.

ANSWER: War and Peace (accept Voyná i mir)

(4) This man’s mother ran between the hills of Safa and Marwah until Allah provided a spring to save this man’s life. For ten points each,

Name this prophet of Islam, the son of Hajar, who built the Ka’aba with his father.

ANSWER: Ismail (accept Ishmael; accept Yishma’el)

This half-brother of Ismail was the son of Sarah, who gave birth to this Jewish patriarch in her old age. This man became the father of Esau and Jacob after marrying Rebecca.

ANSWER: Isaac (accept Yishak)

Ismail and Isaac were both sons of this man, for whom the class of religions including Islam, Judaism, and Christianity is named.

ANSWER: Ibrahim (accept Abraham; accept Abram; accept Abrahamic religions)

(5) After this speech was televised, millions of supportive telegrams were sent to RNC headquarters and its speaker was retained on the Republican presidential ticket. For ten points each,

Identify this 1952 speech, named for the cocker spaniel given as a gift to the speaker’s children – a gift that, despite claims he had received improper financial reimbursement, he would *not* be giving back.

ANSWER: Checkers speech

This politician gave the Checkers speech, vindicating his good name to the American people. In 1973, he told the American people “I am not a crook,” and in 1974, he resigned as U.S. President.

ANSWER: Richard Nixon

Nixon resigned in the wake of this political scandal involving a coverup of his administration’s involvement in a break-in at DNC headquarters.

ANSWER: Watergate scandal

(6) Some literary characters find reason to run away with young children in tow. For ten points each,

Eliza Harris holds her young son while fleeing from slave-hunters across the semi-frozen Ohio River in this novel by Harriet Beecher Stowe, in which the title slave befriends little Eva St Clare.

ANSWER: Uncle Tom's Cabin

In this short story by Kate Chopin [show-PAN], a young mother walks off into a swamp with her child after her husband incorrectly accuses her of having black ancestry.

ANSWER: Desiree's Baby

This author wrote the comic play *The Ransom of Red Chief*, in which a pair of kidnappers pay to return a child they kidnapped. This author also wrote twist-ending stories like "The Gift of the Magi."

ANSWER: O. Henry (accept William Sidney Porter)

(7) In 2016, this organization and its related bodies declined to answer whether communist China's economy was a "market-based" economy. For ten points each,

Name this organization, whose Brussels-based Parliament includes 751 seats, 96 of which are held by Germany. This organization was established via the Treaty of Maastricht in 1993.

ANSWER: European Union (accept EU)

China's massive overproduction of this commodity, used in skyscraper frames, helped delay its "market economy" status determination.

ANSWER: steel

The question of market economy status is important because a set of current trade rules will expire in December, 15 years after China joined this global commerce group led by Roberto Azevedo.

ANSWER: World Trade Organization (accept WTO)

(8) For ten points each, give the following about US Highway 40.

Highway 40 follows a number of historically important roads and trails, including this wagon trail used by tens of thousands of settlers to travel from Independence, Missouri to the Willamette Valley in the Pacific Northwest.

ANSWER: Oregon Trail

In California, Highway 40 passes through this mountain pass, named after an infamous traveling party that was unable to cross it in winter 1846 and resorted to cannibalism to survive.

ANSWER: Donner Pass (accept Donner Party)

Highway 40 was largely replaced in the west by Interstate 80, as originally designed by this U.S. President's Interstate Highway System.

ANSWER: Dwight D. Eisenhower

(9) This organelle is named for the Italian scientist who discovered it in the 19th century. For ten points each, Name this endomembrane pathway organelle, which packages macromolecules into vesicles and tags them for transport.

ANSWER: **Golgi** bodies (accept apparatus, complex, etc.)

Golgi bodies are made of these flattened, membranous sacs that fuse with vesicles.

ANSWER: **cisternae**

The exit face of a stack of cisternae is this type of Golgi network. This term is also used to describe stereoisomers, based on the orientation of their functional groups, and is the opposite of *cis*.

ANSWER: **trans** Golgi network (accept **trans**isomers)

(10) This character started out as a small time criminal called Red Hood, before he had one bad day and fell into a vat of chemicals. For ten points each,

Name this member of Batman's rogues gallery, who emerged from the chemicals with green hair and bleached skin.

ANSWER: The **Joker**

This character, Joker's on-again off-again girlfriend, first appeared in *Batman: The Animated Series* and is a featured character in 2016's *Suicide Squad*.

ANSWER: **Harley Quinn** (accept **Harleen Quinzel**; accept either name in each case)

In this controversial 1988 comic written by Alan Moore, the Joker shoots and paralyzes Batgirl, almost as an afterthought to the rest of the plot, in which he tortures her father, Commissioner Gordon.

ANSWER: Batman: The **Killing Joke**

(11) For ten points each, answer the following about levers.

Like the wheel and axle, screw, and pulley, levers are one of these classical devices that can alter a force.

ANSWER: **simple machine**

A lever pivots at this hinge in the system, whose name derives from the Latin for "support."

ANSWER: **fulcrum**

If the components of a lever are in this position, the mechanical advantage of a lever can be equal to one, meaning that there's no trade-off between effort made and distance required to move a load, just a change in the force's direction. You can either give this class of the lever, or you can describe the position of the lever's fulcrum.

ANSWER: **first** class lever (accept Class **1**; accept descriptions of "the **fulcrum is in the middle**, between the effort and the load", "the lever looks like a **seesaw** or **teeter-totter**", and equivalents)



(12) The mirror-written notes above this picture give a series of unit conversions important in Roman building design. For ten points each,

Name this drawing by Leonardo da Vinci, featuring a man in two overlapping poses with outstretched arms.

ANSWER: **Vitruvian Man**

Leonardo's notes above and below the drawing of *Vitruvian Man* discuss Vitruvius' thoughts on human proportions as they apply to this study of the aesthetic design of buildings. Vitruvius wrote a ten-book treatise on this subject.

ANSWER: **architecture** (accept **De architectura** or **On Architecture**)

*Vitruvian Man* is depicted inscribed in these two geometric shapes; Leonardo cleverly drew them with different centers, preserving the desired proportions.

ANSWER: **circle and square** (accept in either order; do not prompt on partial answer)

(13) For ten points each, name the following countries that border Italy.

Italy shares the Brenner Pass with this nation. In 2016, officials from Vienna lobbied for tighter border controls between Italy and this nation but were denied by the European Union.

ANSWER: **Austria**

Mont Blanc rises above the Italian border with this Alpine country.

ANSWER: **Switzerland**

Italy's east is largely a coast on the Adriatic Sea, but its northeast region, including the city of Trieste, borders this country's Karst Plateau.

ANSWER: **Slovenia**

(14) The 1989 Round Table negotiations took place in this city and legalized the existence of the Solidarity trade union. For ten points each,

Name this European capital city, which also names a defensive pact agreed to by Soviet allies.

ANSWER: **Warsaw** (accept **Warsaw** Pact)

The Solidarity union was initially allowed after a 1980 agreement made in this port city, in whose shipyards the union was founded by Lech Walesa [lek vah-weh-sah].

ANSWER: **Gdansk** (accept **Danzig**)

Warsaw and Gdansk are cities in this European country, which was led by Walesa after the fall of communism.

ANSWER: **Poland**

(15) This man's sister, Dorothy may have inspired his "Lucy" poems, and accompanied him on a walk through an ancient Welsh abbey on the banks of the River Wye. For ten points each,

Name this English writer who included a poem about "Tintern Abbey" in the collection *Lyrical Ballads*, on which he collaborated with Samuel Taylor Coleridge.

ANSWER: William **Wordsworth**

"Lake Poets" like Wordsworth and Coleridge were members of this nineteenth-century poetic movement, which favored dreamy fantasy settings and natural imagery. Members of this movement reacted to neoclassicism by emphasizing intuition and emotion, rather than reason, in their work.

ANSWER: English **Romanticism** (accept word forms like **Romantics** or **Romance**)

Wordsworth wrote that he "saw a crowd, / a host, of golden daffodils" in a poem that begins, "I wandered lonely as" one of these meteorological objects. Another Romantic poet, Percy Shelley, wrote that these things "bring fresh showers for the thirsting flowers" and "laugh as [they] pass in thunder."

ANSWER: **clouds** (accept I Wandered Lonely as a **Cloud**; accept The **Cloud**)

(16) The Madelung rule dictates the order in which these entities are filled, and the Aufbau principle notes that lower-energy ones must be filled before higher-energy ones. For ten points each,

Name these regions surrounding an atom that are occupied by electrons.

ANSWER: atomic **orbitals** (accept electron **shells**)

The orbital with the lowest energy level holds up to two electrons and is labeled by this letter; larger orbitals are labeled p, d, and f.

ANSWER: **s** (accept **1s**, **1s<sup>1</sup>**, or **1s<sup>2</sup>**)

This element has the simplest electron configuration,  $1s^1$ , indicating it only has one electron. Accordingly, it also has the lowest atomic number.

ANSWER: **hydrogen** (accept **H**)

(17) The religion of ancient Egypt changed dramatically over time, leading to some complicated relationships between the gods. For ten points each,

Name this sister-wife of the undead god Osiris, who put her husband back together after Set cut him into pieces.

ANSWER: **Isis** (accept **Aset**)

This god was usually the son of Isis and Osiris, but in other myths, he was Isis's husband instead. This falcon-headed god was sometimes syncretized with Ra as "Ra-Horakhty," and his eye was symbolically known as the Wedjat.

ANSWER: **Horus**

Horus's sons are described either as the children of Isis or of this goddess of motherhood and the sky, who is often depicted with the horns or head of a cow.

ANSWER: **Hathor**

(18) This novel's protagonist is sent to Room 101 to face his worst fear after becoming a dissident. For ten points each,

Name this novel, in which Winston Smith is seduced by Julia and eventually proclaims his love for the ever-present Big Brother.

ANSWER: Nineteen Eighty-Four

*Nineteen Eighty Four* was written by this British author of *Animal Farm*.

ANSWER: George Orwell (accept Eric Arthur Blair)

Orwell's short story collection *Burmese Days* includes a short story about "Shooting [one of these animals]." In a short story by Hemingway, hills near the Ebro River in Spain are compared to white ones of these animals.

ANSWER: elephants

(19) For ten points each, answer the following about the equation  $y$  equals the square root of the quantity  $x$  minus 4.

If  $x=3$ , then  $y$  equals the square root of negative 1, a number often symbolized  $i$ . Thus,  $y$  is this type of non-real number.

ANSWER: imaginary number (accept complex number)

Within the real numbers, the value of the variable  $x$  cannot be any real number less than 4; that is, treating the equation as a function, this set includes all  $x$  values greater than or equal to 4.

ANSWER: domain

The graph of this equation passes through which quadrant or quadrants of the Cartesian plane?

ANSWER: first quadrant only (accept Quadrant I [one] only)

(20) Nine years after this event, Saigo Takamori led a rebellion of unemployed warriors from Satsuma against the new government. For ten points each,

Name this 1868 event in which an imperial system was restored to power, replacing the Tokugawa Shogunate.

ANSWER: Meiji Restoration

The Meiji Restoration revamped political power in this Asian country, where shoguns had ruled for several centuries.

ANSWER: Japan

This class of noble Japanese warriors was gradually stripped of power and privileges after the Meiji Restoration. Saigo Takamori is often considered the "last" of these warriors for his leadership in the Satsuma Rebellion.

ANSWER: samurai