

## Round 5

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### Tossups

(1) **This “cow-eyed” deity was served by Argus Panoptes, whose hundred eyes were preserved in the tail of the peacock, which was sacred to this deity. This deity offered power over all of Asia and Europe as a bribe during the judgement of (\*) Paris** This goddess tried to stop Leto from giving birth because she was pregnant with this goddess’s husband’s twins, Artemis and Apollo. For ten points, name this jealous Greek goddess, the wife of Zeus.

ANSWER: Hera (do not accept or prompt on Juno)

(2) **In a novel, François and Perrault take a dog to what became this U.S. state, where they do business in the town of Skagway. Beauty Smith purchases another dog from Grey Beaver in this U.S. state. This modern state is the setting of novels by (\*) Jack London, such as *White Fang* and *The Call of the Wild*, in which Buck is kidnapped to what is now this state to be a sled dog.** For ten points, name this largest and northernmost of the United States.

ANSWER: Alaska

(3) **Removal of this compound from water is the goal of reverse osmosis. Because an IV injection of pure water will explode your blood, dehydration is treated by a solution containing this compound. This compound is produced by evaporation ponds when they’re fed a solution of (\*) brine.** This compound, which is found naturally in the mineral halite, is formed along with water in the reaction of NaOH and HCl. Most of the world’s water contains, for ten points, what ionic compound, whose formula is NaCl?

ANSWER: table salt (accept sodium chloride; accept NaCl until it is read)

(4) **One of this painting’s central figures wears a rick-racked collar and a cameo brooch and looks uncertainly to her left in front of the Dibble House in Iowa. This painting’s models were a (\*) dentist and the artist’s sister, Nan, who insisted that this painting did not depict a man and his wife.** For ten points, name this painting by Grant Wood in which a somber-looking woman and a man holding a pitchfork stand side-by-side, looking at the viewer.

ANSWER: American Gothic

(5) **In this city’s 1936 Battle of Cable Street, tens of thousands of counter-protesters blocked Oswald Mosley’s fascists from marching. In 1780, protesters were freed from this city’s Newgate Prison during the anti-Catholic (\*) Gordon Riots.** Robert Catesby planned a mass assassination attempt in this city that failed on November 5th, 1605, after Guy Fawkes was discovered. For ten points, name this city where the Gunpowder Plot would have blown up the English Parliament.

ANSWER: London

(6) **In response to this game, Patricia Pulling founded “B.A.D.D.” [“bad”] and sued its original publisher, TSR, as part of an anti-occult movement. This game was named by the two-year-old daughter of creator (\*) Gary Gygax. This game’s third edition was published by Wizards of the Coast, and heavily emphasized this game’s “d20 system.” Fighters and rogues are two classes in, for ten points, what wildly popular tabletop role-playing game played by rolling a twenty-sided die?**

ANSWER: Dungeons and Dragons (accept D&D; accept DnD)

(7) **This writer’s literary theories include the duality of Apollonian and Dionysian forces in tragedy. This thinker described the self-determining force of each person as the “will to power” in books like (\*) *Thus Spake Zarathustra*, which were edited after his death by his sister Elizabeth into a pro-Nazi ideology. *The Antichrist* and *Beyond Good and Evil* were written by, for ten points, what German philosopher who proclaimed “God is dead”?**

ANSWER: Friedrich Nietzsche ([nee-chuh], but be lenient)

(8) **The Eddington experiment used data gathered during one of these events as proof of general relativity. A diamond ring pattern seen during these events is called “Baily’s beads.” Transits are analogous to these events, which are (\*) syzygies [sih-zih-jees] that are called “partial” if the observer is viewing it from the penumbra. These events are visible once or twice per hemisphere per year. For ten points, name these events in which the moon casts a shadow on the Earth.**

ANSWER: eclipses (accept solar eclipse or lunar eclipse, as some clues apply to both)

(9) **J.R.R. Tolkien wrote about the “Monsters and the Critics” of this literary work, whose opening word, “Hwaet,” [h’wet] was translated by Seamus Heaney [SHAY-mus HAY-nee]. After fighting a dragon in this poem, (\*) Wiglaf becomes king on the urging of a Geatish hero [GATE-ish hero]. As a young man, this poem’s title character defends King Hrothgar’s mead-hall, Heorot [HAY-oh-roht], from the monster Grendel. For ten points, name this Old English epic poem named for a Scandinavian warrior.**

ANSWER: Beowulf

(10) **The completion of this agreement was celebrated on Three Flags Day in St Louis. Robert Livingston and James Monroe negotiated this agreement with François Barbé-Marbois [fran-swah bar-BAY mar-BWAH], and a year later, the (\*) Corps of Discovery Expedition was launched under Lewis and Clark. The U.S. paid fifteen million dollars for almost one million square miles of land west of the Mississippi River in, for ten points, what 1803 sale that also included the city of New Orleans and what is now its home state?**

ANSWER: Louisiana Purchase (accept descriptive answers of “the US buying Louisiana from France;” prompt on “Louisiana” alone)

(11) **In Disney’s *Fantasia*, a piece of music from this country is followed by the palate-cleansing *Ave Maria*. A group of composers, one of whom wrote *Night on Bald Mountain*, are nicknamed this country’s (\*) “Mighty Handful.” This country is the home of Modest Mussorgsky and of the composer of *Prince Igor*, Alexander Borodin. Mikhail Glinka composed the national anthem of, for ten points, what country from which Sergei Rachmaninoff escaped after the Bolshevik Revolution?**

ANSWER: **Russia** (accept **Russian** Empire; accept **Rossiyskaya Imperiya**; do not accept or prompt on “Soviet Union” or “USSR”)

(12) **The ITER project in France aims to commercialize this process. Reactors for this process are often toroidal in shape and use a convex series of magnetic mirrors to keep plasma confined. This process occurs naturally through the (\*) proton-proton chain, but only at the conditions of the core of the Sun; rumors of a “cold” version of this process have been debunked. Atomic nuclei are combined and release energy, in, for ten points, what nuclear reaction, the opposite of fission?**

ANSWER: nuclear **fusion**

(13) **One division of this religion pursues satori [sah-toh-ree], and another is centered in the city of Lhasa. Guan-yin is revered in a form of this religion that reveres Amitabha, called (\*) Pure Land. This religion has two major sects known as the “elders’ school” and the “greater vehicle,” Thera-vada and Maha-yana. Zen is a Japanese form of, for ten points, what Indian religion founded by Siddhartha Gautama and followed by the Dalai Lama in its “Tibetan” form?**

ANSWER: **Buddhism** (accept specific types, including Zen **Buddhism**, Tibetan **Buddhism**, Pure Land **Buddhism**, Theravada **Buddhism**, or Mahayana **Buddhism**)

(14) **A character in this literary work refuses to wear “two or three magnificent roses” to a ball hosted by the Minister of Education, and is embarrassed by the cheap cloak she must wear over a new dress. In this story, Madame (\*) Forestier [foh-ress-tee-ay] tells Mathilde Loisel [mah-teeld lwah-zell] that she has lost her beauty for nothing by trying to repay an unnecessary debt of almost forty thousand francs. For ten points, name this Guy de Maupassant [gee duh moh-pah-sawn] short story named for a piece of jewelry that turns out to be a cheap fake.**

ANSWER: The **Necklace** (accept The Diamond **Necklace**; accept La **parure**)

(15) **Some pundits incorrectly argued that John McCain was ineligible to serve as President because he was born in a zone named for this structure. In 1977, Omar Torrijos and Jimmy Carter signed a treaty that promised the transfer of this structure in 1999. The ports of (\*) Balboa and Colón lie on opposite ends of this structure, where the Gatun Dam and Gatun Locks were built. For ten points, name this manmade waterway across a Central American isthmus that links the Atlantic and Pacific Oceans.**

ANSWER: **Panama Canal** (accept **Panama Canal Zone**; prompt on “Panama” alone; prompt on descriptive answers like “the isthmus of Panama”)

(16) **The presence of these organelles in human cells is proposed to have occurred through endosymbiosis, since they have their own maternally inherited DNA. The matrix of these organelles is the site of the (\*) citric acid cycle.** Their inner membrane contains an electron transport chain that generates most of the cell's ATP. For ten points, name these organelles that provide cellular energy through respiration, earning them the nickname of “powerhouse” of the cell.

ANSWER: mitochondria (accept mitochondrion)

(17) **This province is home to Lester Pearson International Airport, which has the airport code YYZ. In this province, a statue of Colonel John By stands across the Rideau [rye-doh] Canal from Parliament Hill. Windsor and Hamilton are among the cities in the southern arm of this province. Both Minnesota and New (\*) York border this province, the only one that shares its name with a Great Lake.** For ten points, name this most populous Canadian province, the home of Ottawa and Toronto.

ANSWER: Ontario

(18) **In Thales's [THAY-leez's] theorem, one of these line segments is also the hypotenuse of a right triangle. Some textbooks will define this segment as longer than any (\*) chord, but most textbooks define it as a chord that passes through the center.** If a circle's circumference is ten pi, then this measurement's value is ten. For ten points, name this geometric feature that is twice as long as the radius and spans the longest distance across a circle.

ANSWER: diameter of a circle (prompt on “chord” before it is read)

(19) **This literary man rows past the *Somerset* toward Charleston to wait with his horse. This character watches the “North-Church-tower” for lantern signals that will tell him (\*) “one if by land, and two if by sea” before setting off “to every Middlesex village and farm,” including Medford, Lexington, and Concord.** For ten points, name this Boston silversmith who, in a Longfellow poem set in 1775, warned of approaching British troops in his “midnight ride.”

ANSWER: Paul Revere (accept Paul Revere's Ride; accept descriptions like “the midnight ride of Paul Revere)

(20) **After a short, inspirational trip with Frank Hawks, this woman was taught by Mary “Neta” Snook. This leader of the “Ninety-Nines” used a Lockheed Electra for her final feat, in which she was accompanied by (\*) Fred Noonan.** The *Itasca* was tasked with communicating with this woman by radio as she approached Howland Island in the Pacific. For ten points, name this pioneer who, in 1937, famously disappeared during an attempt to fly around the world.

ANSWER: Amelia Earhart

## Bonuses

(1) On a diagram of these systems, a resistor is indicated by a line with jagged waves, and an inductor is indicated with curls in the wire – and certainly, bad handwriting has never cause any issues with *that*. For ten points each,

Give this term for an electrical network in which current can flow in a closed loop.

ANSWER: electrical **circuits**

In a circuit, this device uses semiconducting material to either amplify or switch the signal. These devices allowed for the invention of small, powerful electronic gadgets - the most famous example is probably a handheld radio named for them.

ANSWER: **transistors** (accept **transistor** radio)

This circuit element is displayed as two parallel lines causing a gap in the wire. The amount of charge that these devices can store is measured in farads.

ANSWER: **capacitors**

(2) A revolution based in this city culminated in a show trial that lasted one hour, after which the President and his wife were executed so quickly that the TV cameras couldn't even get set up. For ten points each,

Name this Eastern European capital city. It was the home of Nicolae and Elena Ceausescu [show-CHESS-koo] until they fled amidst a 1989 anti-Communist revolution.

ANSWER: **Bucharest**

Bucharest is the capital of this Eastern European country.

ANSWER: **Romania**

Nicolae and Elena Ceausescu were executed on this holiday in 1989. Other historical events on this day include Mikhail Gorbachev's resignation as Soviet President and, much earlier, Charlemagne's crowning as Emperor of the Romans in 800 CE.

ANSWER: **Christmas** Day (accept **December 25th**)

(3) This literary character is killed by his fiancée's husband, who is from the House of Montague. For ten points each,

Name this Shakespeare character. This count of Verona dies at the tomb of his fiancée, who is the daughter of Lord Capulet.

ANSWER: Count **Paris**

Count Paris is a victim of the feud between the Montague and Capulet families in this Shakespeare play about a pair of "star-cross'd lovers."

ANSWER: **Romeo and Juliet** (accept The Tragedy of **Romeo and Juliet**)

Paris is a relative of this friend of Romeo. This man is killed by Juliet's cousin Tybalt earlier in the play.

ANSWER: **Mercutio**

(4) British television features game shows that are typically less tense than American TV. For ten points each,

The genre of relaxing reality competitions was perfected by this show, in which bakers compete in a tent each week. In the most recent 13th series, judges Paul Hollywood and Prue Leith were lampooned for their take on Mexican food.

ANSWER: The Great British Bake Off (accept GBBO; accept The Great British Baking Show)

Greg Davies and Alex Horne present this show, in which five comedian panelists struggle to complete Alex's ridiculous assignments, such as "eat the most watermelon in one minute" or "get a camel through the smallest gap."

ANSWER: Taskmaster

In this game show, a rare instance of a British competition having a successful American spinoff, trivia experts like Victoria Groce ["gross"] and James Holzhauer attempt to catch opposing contestants, preventing them from winning any money.

ANSWER: The Chase

(5) Give the following about famous psychological experiments and tests, for ten points each.

In 1972, Walter Mischel studied delayed gratification by putting one of these sweet treats in a room with a child and telling them that, if they wait a small amount of time without eating it, they'll get an extra one.

ANSWER: marshmallow (accept additional information, like marshmallow test; accept pretzel sticks; prompt on "candy")

In a much less whimsical experiment, this professor randomly assigned volunteers as either prisoners or prison guards, then observed five days of abuse in a simulated prison before Christina Maslach convinced him to shut down the experiment.

ANSWER: Philip Zimbardo (accept Philip George Zimbardo)

The 1972 marshmallow test and Zimbardo's prison experiment were both conducted by this elite private university in California, near Palo Alto south of San Francisco.

ANSWER: Stanford University

(6) This artist created *The Genius of Victory* for the tomb of Julius II [second], but it was not included in the finished tomb. For ten points each,

Name this Italian Renaissance sculptor who did manage to include a sculpture of a horned *Moses* as well as a *Rebellious Slave* and a *Dying Slave* for the same tomb.

ANSWER: Michelangelo (accept Michelangelo di Lodovico Buonarroti Simoni)

Julius II was the "warrior" one of these religious leaders. Michelangelo earned commissions from several of these leaders to produce art for the Vatican.

ANSWER: Pope (accept Bishop of Rome; accept Roman Pontiff; accept Pontifex Maximus)

Julius II commissioned Michelangelo to paint the walls and ceiling of this chapel in the Vatican's Apostolic Palace. Michelangelo included an iconic image of God reaching toward Adam on this chapel's ceiling.

ANSWER: Sistine Chapel

(7) The god Iktómi usually takes the form of this animal, and inspired the creation of hoops holding string nets that are used as protective charms for children. For ten points each,

Name these web-spinning creatures.

ANSWER: spider

Iktómi appears in the religious tales of this Native American people, who make up the Sioux people with the Dakota.

ANSWER: Lakota (accept Teton; accept Thithungwang)

Other Native American religions feature this cunning character, who is named for and behaves like a common wild canine.

ANSWER: Coyote

(8) The longest-serving holder of this post, John Marshall, greatly expanded its power through the policy of judicial review. For ten points each,

Name this judicial position, the leader of the highest court of the United States.

ANSWER: Chief Justice of the Supreme Court

This man succeeded Marshall as Chief Justice in 1836. This pro-slavery activist issued several rulings that President Lincoln refused to obey, and Lincoln refused to publicly acknowledge his 1864 death.

ANSWER: Roger Taney ([tawny], but be lenient; accept Roger Brooke Taney)

Taney wrote the highly controversial opinion in this 1857 case, which struck down the Missouri Compromise and ruled that African-Americans were not protected by the Constitution.

ANSWER: Dred Scott vs. Sanford (accept Dred Scott vs. Sandford)

(9) The 2020 Nobel Prize in Physiology and Medicine was awarded to a team of researchers who discovered a surprising “C” form of this disease that is mostly caused by botched blood transfusions. For ten points each,

Name this type of inflammation whose most common forms, A and B, are due to viral infection.

ANSWER: hepatitis

Hepatitis is the inflammation of this largest internal body organ. Alcohol abuse can lead to its cirrhosis.

ANSWER: liver

The tell-tale sign of liver damage is this symptom, a yellowing of the skin and eyes, due to the accumulation of bilirubin in the blood.

ANSWER: jaundice

(10) This novel's protagonist is aided by Zhu Ba-jie and Sha Wu-jing, whose names are usually translated into English as Pigsy and Sandy. For ten points each,

Name this sixteenth-century novel in which Sun Wu-kong helps a Tang Dynasty Buddhist monk travel to India to get holy sutras.

ANSWER: **Journey to the West** (accept **Xi You Ji**)

*Journey to the West* is one of the Four Great Classics of this Asian country, where it was written during the Ming Dynasty.

ANSWER: **China** (accept **Zhongguo**)

In English translations of *Journey to the West*, Sun Wukong's name is often translated as this animal. Sun Wukong is the "king" of these playful, ape-like animals, which have prehensile tails.

ANSWER: **monkey** (accept **Monkey King**)

(11) Addition and subtraction have this relationship, and negative numbers are called the "additive" form of this term because " $a$  plus negative  $a$ " gives zero. For ten points each,

Give this technical term for "un-doing" a mathematical operation, or for the object that does the "un-doing".

ANSWER: **inverse** (accept any additional information, such as "**inverse** operation" or "additive **inverse**"; accept word forms like **inverting**)

This term describes the multiplicative inverse of a number. Dividing 1 by a number gives this value; for example, "one-half" and "two" are this kind of number for each other.

ANSWER: **reciprocals**

One is the only positive number that is its own reciprocal, and this is the only positive number that is equal to "its reciprocal plus 1". The Greek letter phi [**fee**] symbolizes this number, which is the ratio between the side lengths of a particularly aesthetically pleasing rectangle.

ANSWER: **golden** ratio (accept **golden** mean, cut, proportion, number, or rectangle)

(12) According to legend, this empire's most famous ruler gained power when his predecessor sailed a fleet of 2,000 ships across the Atlantic and never returned. For ten points each,

Name this medieval-era West African empire that was founded by Sundiata Keita and ruled by Musa I. A modern African country shares this name.

ANSWER: **Mali** Empire (accept Republic of **Mali**)

Rulers of the Mali Empire like Musa I were given this title, the Mandinka word for king or emperor.

ANSWER: **Mansa** (accept **Mansa** Musa)

Cities of the Mali Empire included Gao, Niani, and this trade hub. The University of Sankore was built in this city, which gained a reputation in Europe as a mysterious, hard-to-find city in the 19th century.

ANSWER: **Timbuktu**



(13) Two works by this poet announce “I sound my barbaric yawp over the roofs of the world” and say that a “great star early droop’d in the western sky at night.” For ten points each,

Name this American poet who frequently edited and republished his poetry collection *Leaves of Grass*.

ANSWER: Walt Whitman (accept Walter Whitman)

Whitman wrote about his “barbaric yawp” in this long poem, in which he declares, “I celebrate myself.”

ANSWER: Song of Myself

The “great star early droop’d in the western sky” in a Whitman poem named for these springtime flowers “with heart-shaped leaves of rich green” and “many a pointed blossom.”

ANSWER: Lilacs (accept When Lilacs Last in the Dooryard Bloom’d)

(14) A primary driver of climate change is this effect, which is primarily driven by the concentration of gases like carbon dioxide. For ten points each,

Name this process in which gases in the atmosphere trap radiative heat, causing the Earth’s temperature to rise.

ANSWER: greenhouse effect

The greenhouse effect is stronger when the surface temperature is higher, and the surface temperature rises when the greenhouse effect increases. The greenhouse effect can thus cause this type of “loop”, in which the effect of a cause-and-effect system leads to more of the cause.

ANSWER: positive feedback loop

An atmospheric layer of this important greenhouse gas, which consists of three atoms of oxygen, insulates the Earth from ultraviolet radiation.

ANSWER: ozone

(15) Name the following musicals with famous dance sequences, for ten points each.

This Rodgers and Hammerstein musical essentially invented the dream ballet, a sequence in which the dance advances the plot and no singing takes place, in its Act 1 finale in which Laurey realizes she loves Curly, not Jud. This musical ends with Laurey and her new husband leaving for their honeymoon in the surrey with the fringe on top.

ANSWER: Oklahoma!

Gillian Lynne choreographed the Jellicle Ball in this Andrew Lloyd Webber musical, whose singing roles include Skimbleshanks.

ANSWER: Cats

Bob Fosse’s signature jazz hands are used throughout this musical, in which Roxie Hart and Velma Kelly try to get acquitted of murder in Illinois during the Jazz Age.

ANSWER: Chicago

(16) Give the following about the development of frontier land in 19th century America, for ten points each.

Joseph Glidden invented an efficient form of this type of steel wire, whose jagged points kept cattle contained at a far cheaper construction cost than wooden fencing.

ANSWER: barbed wire

This term describes a lifestyle of self-sufficient agriculture and domestic life, but it may be more familiar today as the name of an 1862 act that allowed people to purchase up to 160 acres of land if they improved and lived on the land for five years.

ANSWER: homesteading (accept word forms, like homesteader; accept Homestead Act)

The government's interference with Native American land wasn't limited to taking it; this 1887 act allowed the government to subdivide communal land into individual allotments, thereby imposing capitalism on several tribes. The government could then buy the chunks of land left over after subdivision.

ANSWER: Dawes Act of 1887 (accept Dawes (everalty) Act of 1887)

(17) The law of mass action assumes that concentration is being measured in this format. For ten points each,

Name this primary method of measuring a solution's concentration, which is defined as moles of solute divided by liters of solution.

ANSWER: molarity (or molar concentration)

Molality, on the other hand, replaces "liters of solution" with the mass of the solute measured in these units. This base SI unit is the mass of a liter of water.

ANSWER: kilogram (do not accept or prompt on "gram")

Molality is mainly useful for solving chemistry problems if the temperature changes, since a solution's volume increases as it heats up. For instance, it is used to calculate boiling point elevation, which is one of these properties that depend on solute concentration but not identity.

ANSWER: colligative properties

(18) The legend of Hunahpu and Xbalanqué [hoo-nah-poo and sh'bah-LAHN-kay] is the subject of one of these peoples' oldest myths. For ten points each,

Name this Mesoamerican civilization whose myths and history are recorded in the Popol Vuh. These people built the city of Chichen Itza on the Yucatan Peninsula.

ANSWER: Mayan civilization (accept K'iche' Maya)

Hunahpu and Xbalanqué are one of several pairs of heroes in American mythologies that have this familial relationship.

ANSWER: twins (prompt on "siblings;" prompt on "brothers")

In the myth, the Hero Twins are summoned to this Mayan underworld, where they play the ball game and trick the lords of this place, One Death and Seven Death, into being sacrificed.

ANSWER: Xibalba [she-BAL-bah]

(19) For a week in 2010, a volcanic eruption on this island disrupted air travel throughout Europe. For ten points each,

Name this North Atlantic island, the site of Eyjafjallajökull [AY-yuh-f'YAT-luh-YO-kull] and numerous other volcanoes, geysers, and hot springs.

ANSWER: Iceland

Almost all of Iceland's energy production is renewable; it has ample sources of both hydroelectric power and this type of power, generated by its hot springs and geysers.

ANSWER: geothermal energy (prompt on "thermal (energy)")

More than half of Iceland's population lives in this city, the northernmost world capital.

ANSWER: Reykjavik ([RAKE-yuh-VIK], but be lenient)

(20) The Pied Piper of Hamelin might have begun as a child-friendly way to talk about the devastation left by this disease. For ten points each,

Name this disease that spread across Europe in the 1300s with the help of rat fleas.

ANSWER: plague (accept **Black Plague**; accept bubonic plague; accept **Black Death**)

Giovanni Boccaccio [boh-KAH-chee-oh] wrote this short story collection, in which ten young nobles gather to tell stories while fleeing from the Black Death in Florence.

ANSWER: The Decameron (accept Decamerone)

In one of the stories of the *Decameron*, named "The Patient Griselda," Griselda's husband tests her suitability as a wife by claiming he has killed two people with this relationship to her.

ANSWER: her children (accept her son and daughter)