

Round 10

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Tossups

(1) **This queen’s marriage was confirmed with the equality motto “Tanto monta, monta tanto.” This ruler of Castile persecuted Jews with the Alhambra decree and defeated the Muslim kingdom of Granada to end the** (*) Reconquista; those actions earned this queen and her husband the titles of Catholic Monarchs. For ten points, name this Spanish queen who jointly ruled with Ferdinand of Aragon and sponsored Columbus’ first voyage.

ANSWER: Isabella I (accept Isabella of Castile)

(2) **This author created One Eye, who dies defending his family from a lynx, leaving Kiche alone with her last living child in wild** (*) Yukon Territory. In another novel by this author, Buck is kidnapped and sent to Alaska, where he becomes known as a “Ghost Dog” after joining a wolf pack. For ten points, name this author of *White Fang* and *The Call of the Wild*.

ANSWER: Jack London (accept John Griffith Chaney London)

(3) **In 1942, this country raised war funds by carrying out “If Day,” a simulated Nazi occupation. This country’s four divisions of troops were supported by the British at the Battle of Vimy Ridge in World War I. An eastern city in this country was obliterated by the 1917** (*) explosion of the SS *Mont Blanc*. The Halifax explosion killed roughly two thousand people in, for ten points, what country’s province of Nova Scotia?

ANSWER: Canada

(4) **Several diseases of this organelle present with “ragged red” fibers in muscle tissue. This organelle’s inner membrane increases the surface area available for chemical reactions to occur by** (*) folding over itself. The electron transport chain synthesizes ATP in, for ten points, what cell organelle that is commonly referred to as the powerhouse of the cell?

ANSWER: mitochondria (accept mitochondrion)

(5) **In 2014, the NBA forced the sale of a team in this city when owner Donald Sterling was recorded making racist remarks. Prior to playing in Houston and Oklahoma City, Chris Paul played in this city. Players who have recently moved to this city include** (*) Paul George, Kawhi Leonard [kah-wye Leonard], Anthony Davis, and LeBron James. For ten points, name this city where the Staples Center is shared by the Clippers and Lakers.

ANSWER: Los Angeles (accept LA; accept Los Angeles Clippers, but do not prompt on “Clippers” alone; accept Los Angeles Lakers after “Anthony” is read, but do not prompt on “Lakers” alone)

(6) **Lai Zhide simplified this symbol from the taijitu. The elements of this symbol appear in ba gua trigrams in Taoism, and represent opposing forces like (*) fire and water or masculinity and femininity, to demonstrate that they are ultimately complementary. For ten points, name this symbol in Chinese philosophy that represents the balance of light and dark with white and black teardrop shapes curled around each other.**

ANSWER: yin-yang (accept yin and yang in either order; accept taijitu before it is read; prompt on partial answers)

(7) **After a 1895 Supreme Court case briefly struck down this policy, a 1913 Constitutional amendment made it legal. Florida and Nevada are two of seven states that don't use this policy, whose introduction reduced the importance of tariffs for (*) federal government revenue. The Sixteenth Amendment authorized, for ten points, what type of tax that is reported on IRS Form 1040 ["ten forty"] and which taxes money made by the taxpayer?**

ANSWER: income tax (prompt on "tax")

(8) **In a play by this author, Miss Prism accidentally leaves a baby in a handbag at a train station, and finally reveals her mistake to Jack Worthing and Algernon Moncrief. This author of *Lady Windermere's Fan* wrote the poem *The Ballad of* (*) *Reading Gaol* [redding jail] after he was imprisoned for homosexuality. For ten points, name this English playwright of satirical plays like *The Importance of Being Earnest*.**

ANSWER: Oscar Wilde (accept Oscar Fingal O'Flahertie Wills Wilde)

(9) **This landmass is hypothesized to be the fourth of its kind, following Columbia, Rodinia, and Pannotia. Alfred Wegener named this landmass, which surrounded the Tethys Sea. Mesosaurus fossils on the coasts of Brazil and (*) Namibia provide evidence for this landmass, which included regions that became Laurasia and Gondwana at the end of Mesozoic Era. For ten points, name this supercontinent that broke apart tens of millions of years ago and whose name means "all Earth."**

ANSWER: Pangaea

(10) **The title phenomenon of this artwork frames a background mountain whose name titles the thirty-six-painting series this work belongs to. This work's title phenomenon has claw-like edges that threaten three (*) boats in this example of *ukiyo-e* [oo-kee-yoh-ay] art. For ten points, name this Japanese woodblock print, part of a series of *Views of Mount Fuji* created by Hokusai [hoh-koo-sah-ee], which shows a tsunami.**

ANSWER: The Great Wave Off Kanagawa (accept The Wave; accept Kanagawa-oki nami ura)

(11) **The aurora borealis is in this phase, in which balanced amounts of electrons and ions create a (*) highly conductive, but electrically neutral, state. This phase of matter is believed to be the most common in the universe, since it is found in stars. For ten points, name this "fourth" phase of matter that possesses much more energy than solids, liquids, or gases.**

ANSWER: plasmas (accept cathode rays before "cathode ray" is read)

(12) **This nation's Booker Prize winning authors include Thomas Keneally and Peter Carey; one of Carey's wins was for a novel about Ned Kelly, a (*) bushranger from this nation who committed a train robbery in the state of Victoria. For ten points, name this southern hemisphere nation where Oscar moves the glass church from Sydney through the outback.**

ANSWER: Commonwealth of Australia

(13) **This philosophical concept is defined by the stronger party, according to Thrasymachus [thra-sih-mah-kus] in Plato's *Republic*. John Rawls argued that a "veil of ignorance" required to make sure that this concept is applied (*) fairly. A blindfolded woman holding balancing scales often represents, for ten points, what moral and ethical concept related to equality and the law?**

ANSWER: justice (accept word forms like just)

(14) **A composer from this country wrote a *Fantasia* on a theme by a much earlier composer from this country, Thomas Tallis. This is the home country of Ralph Vaughan Williams [RAFE vawn Williams] and the composer of the *Enigma Variations*, who had one of his (*) *Pomp and Circumstance Marches* modified for a 1902 coronation. For ten points, name this home country of Sir Edward Elgar, who was knighted by King Edward VII.**

ANSWER: United Kingdom of Great Britain and (Northern) Ireland (accept UK; accept Great Britain; accept England)

(15) **In the 1830s, the US and UK fought over this state's border in the bloodless Aroostook War. Bowdoin College was founded in this state in 1794 in Brunswick. Despite sharing no border, this state was part of (*) Massachusetts until 1820. The Webster-Ashburton Treaty decided the border between Canada's New Brunswick and, for ten points, what northernmost state in New England whose capital is Augusta?**

ANSWER: Maine

(16) **One example of these objects is an equilateral triangle whose center is removed to create three new equilateral triangles, each of whose centers is similarly removed, and so on. The Sierpinski triangle is one of these images, as is the (*) Mandelbrot set. For ten points, name these mathematical images that resemble themselves at intense zooming levels.**

ANSWER: fractals (accept Sierpinski triangle before it is read)

(17) **In one myth, this figure's grandson becomes the first horse in North America. This mythic figure vows to spread mischief in the world after he helps the Earth Maker sing it into existence, likely in reference to his namesake animal's (*) howl. Stories in the American southwest describe, for ten points, what Native American trickster god who took the shape of a common wild canine?**

ANSWER: Coyote (accept Coyotl; accept Sk'elep)

(18) **In this man's highest post, he wrote a *Report on Manufactures* and four *Reports on Public Credit*. This man worked with John Jay and James Madison on the (*) Federalist Papers, and he died after an early morning incident near Weehawken, New Jersey. For ten points, name this American founding father and first Treasury Secretary who was killed in an 1804 duel with Aaron Burr.**

ANSWER: Alexander Hamilton

(19) **Antoine Lavoisier [ann-twan lah-vwah-see-ay] proved that this reaction does not involve the release of phlogiston. Hydrocarbons produce water and carbon dioxide by this reaction. Hay piles can experience a (*) spontaneous type of this reaction, which requires spark plug ignition in engines. For ten points, name this process of combining with oxygen to release heat, a reaction commonly known as burning.**

ANSWER: combustion (accept word forms; accept ignition before it is read; accept burning before it is read; prompt on "fire")

(20) **A character in this novel marries and abuses Isabella Linton and cheats Hareton Earnshaw out of his inheritance. While visiting this novel's title house near (*) Thrushcross Grange, Lockwood is disturbed by the ghost of his landlord's lost love, Catherine. For ten points, name this novel in which Heathcliff gets revenge on the inhabitants of the title house, written by Emily Brontë.**

ANSWER: Wuthering Heights

Bonuses

(1) In 1956, Chien-Shiung Wu organized a crucial experiment in nuclear physics. Her work was not rewarded with a Nobel Prize, but the two men who theorized the work she tested were honored. For ten points each,

The Wu experiment surprisingly determined that parity was not conserved by this fundamental force, unlike the other three forces: gravity, the electromagnetic force, and the strong force.

ANSWER: weak (nuclear) force (accept weak interactions)

The weak force is responsible for the beta type of this radioactive process, in which a nucleus emits radiation and loses energy. The rate at which this process occurs is often measured in half-lives.

ANSWER: radioactive decay

The Wu experiment studied beta decay in the sixty isotope of this element, whose atomic symbol is Co [spell it]. This metal produces several important blue pigments.

ANSWER: cobalt-60

(2) This jazz musician's style of rapid-fire playing was described as "sheets of sound." For ten points each,

Name this jazz musician behind the albums *Giant Steps* and *A Love Supreme*. He also played on trumpeter Miles Davis' album *Kind of Blue*.

ANSWER: John Coltrane (accept John William Coltrane)

Coltrane played the tenor variety of this reed instrument that is common in jazz bands.

ANSWER: saxophone (accept tenor saxophone)

Coltrane's *A Love Supreme* ends with a track named for this type of Biblical song. The twenty-third of these poems in the King James Bible begins "The Lord is my shepherd, I shall not want."

ANSWER: Psalms

(3) A literary character described as the "greatest philosopher of the whole world" claims that this disease is a "necessary ingredient in the best of worlds," because if Christopher Columbus' men hadn't brought it back from America, he also wouldn't have brought back chocolate. For ten points each,

Name this sexually transmitted disease that afflicts Doctor Pangloss in a 1759 satirical novel.

ANSWER: syphilis

Doctor Pangloss advises the title character of this satirical novel by Voltaire that "all is for the best" because we live in the "best of all possible worlds."

ANSWER: Candide, or Optimism (accept Candide, ou l'optimisme)

In the novel, Candide reunites with the syphilitic Pangloss and is shocked to find that this part of his face has been eaten away by the disease. In the opening chapter of *Candide*, Pangloss explains his optimistic philosophy by claiming that spectacles exist because this body part was formed to hold them up.

ANSWER: nose

(4) This agreement calls for all countries “in a position to do so” to continue providing financial support to developing nations attempting to reduce greenhouse gas emissions. For ten points each,

Name this 2015 international environmental agreement. In 2017, Donald Trump announced the United States would no longer participate in this agreement.

ANSWER: Paris Agreement

Prior to the Paris Agreement, the most powerful international treaty regarding climate change was this 1997 protocol, which the U.S. has not signed. This protocol, which is named for a Japanese city, was amended in 2012.

ANSWER: Kyoto Protocol

This 2012 amendment to the Kyoto Protocol, named for Qatar’s capital, redefined reduction goals for participating countries.

ANSWER: Doha Amendment

(5) One concept in this field is a zero-sum situation, in which whatever is gained by some participants is lost by some others. For ten points each,

Name this field of math that is concerned with building logical strategies in hypothetical problems, like the Stag Hunt, and in less hypothetical problems, like checkers and chess.

ANSWER: game theory

Game theory textbooks often open with this game, in which two people run or drive at each other until they either collide or one person turns away and loses.

ANSWER: chicken

Another famous problem in game theory is a “dilemma” involving two of these people, who can choose either to betray each other or to stay silent.

ANSWER: prisoners (accept prisoner’s dilemma)

(6) Tiresias is a very busy character in Greek mythology. For ten points each, answer some questions about his experiences.

After he struck a pair of snakes, Hera turned Tiresias into one of these people. Tiresias displeased Hera again when he settled an argument between her and Zeus by admitting that these people enjoyed sex more than men.

ANSWER: woman (accept equivalents like female or girl)

Depending on the myth, either Zeus gave this gift to Tiresias as a reward for supporting his argument against Hera, or Athena gave Tiresias this ability. The god Apollo governed this skill, which he also gave to Cassandra.

ANSWER: prophecy (accept descriptions like predicting the future; accept equivalents)

Later in his life, Tiresias told this man to allow Antigone [an-tih-goh-nee] to bury her brother rather than imprison her for it. Though he refuses at first, this king of Thebes eventually agrees.

ANSWER: Creon

(7) The “AXE method” is used in making predictions with this model, whose geometries include octahedral and trigonal bipyramidal molecules. For ten points each,

Name this theory that predicts the geometry of a molecule from the number of lone pairs and bonded atoms surrounding the central atom.

ANSWER: Valence Shell Electron Pair Repulsion theory (accept VSEPR [VES-per] theory; accept Gillespie-Nyholm theory)

VSEPR theory predicts that carbon dioxide takes this shape, in which there are one hundred eighty degree angles between the central carbon atom and each of the oxygen atoms.

ANSWER: linear (accept descriptions related to being in a straight line)

Some molecules aren’t predicted perfectly by VSEPR theory. One such molecule is a gas containing six atoms of fluorine and one atom of this noble gas with symbol Xe [spell it].

ANSWER: xenon (accept xenon hexafluoride)

(8) The last commercial use of this technology in America took place in 2006, ending Western Union’s century and a half in that business. For ten points each,

Name this communication technology in which written messages are sent via codes transmitted long distances along wires.

ANSWER: wired electric telegrams (accept telegraphs; accept word forms, like telegraphy)

The electric telegraph was popularized in America by Alfred Vail and this nineteenth century inventor, who co-developed the technology and a popular code used to send telegraphs that codes letters as dots and dashes.

ANSWER: Samuel Morse (accept Samuel Finley Breese Morse)

When writing telegraph messages through Western Union, punctuation usually cost extra money; this four letter word was free and traditionally used instead of a period to end a sentence.

ANSWER: STOP

(9) In a play by this author, Willy Loman is fired from his job after failing to turn a profit on his business trips. For ten points each,

Name this American playwright, who also wrote *All My Sons* and *The Crucible*.

ANSWER: Arthur Miller (accept Arthur Asher Miller)

Willy Loman kills himself so his family can collect his insurance policy at the end of this Arthur Miller play. This play describes Willy’s life through flashbacks, several of which address his affair with an unnamed woman.

ANSWER: Death of a Salesman

Another bad businessman, Joe Keller, appears in Miller’s play *All My Sons*. In the play, Keller struggles with his conscience after knowingly selling faulty parts for these machines, whose failure caused the death of twenty-one pilots.

ANSWER: airplanes

(10) An oracle claimed that whoever unraveled this object was destined to become the ruler of all of Asia. For ten points each,

Name this notoriously difficult ancient puzzle that was legendarily solved when a ruler cut it in half with a sword.

ANSWER: **Gordian Knot** (prompt on “knot”)

This young ruler of Macedon and son of Philip II cut the Gordian Knot with his sword. This proved the oracle correct, since this man went on to build one of the largest ancient empires.

ANSWER: **Alexander the Great** (accept **Alexander III** of Macedon; prompt on “Alexander”)

Alexander founded and names numerous cities in his conquered lands, including Alexandria on the Nile River delta in what is now this country.

ANSWER: Arab Republic of **Egypt**

(11) These people were the target of a law issued by King Ahasuerus [ah-ha-sway-russ] at the request of Haman, an angry Persian official who hated one of these people named Mordecai. For ten points each,

Name this ethnic-religious group. These people were saved when Mordecai’s cousin, a beautiful queen, persuaded the king to amend the law by revealing she was a member of this religious group.

ANSWER: **Jewish** people (accept word forms like **Jews** or **Judaism**)

The victory of Mordecai and his cousin over Haman is celebrated on this Jewish holiday, named for Haman’s casting of lots to decide what he thought would be the day of the Jews’ destruction.

ANSWER: **Purim**

This Persian queen, the wife of King Ahasuerus and cousin of Mordecai, is the namesake of the scroll and biblical book that describe the events celebrated on Purim.

ANSWER: **Esther** (accept Book of **Esther**; accept Scroll of **Esther**)

(12) The United States has a reputation for athletic excellence on the world stage. Answer the following about American sports teams, for ten points each.

In 2019, Carli Lloyd, Alex Morgan, and Megan Rapinoe [rah-PEE-noh] helped the US become the first country to capture four FIFA Women’s World Cups in this sport.

ANSWER: **soccer** (accept association **football**; do not accept “American football”)

Kendall Coyne Schofield captains the US women’s national team in this sport, which won its fifth consecutive world championship in April 2019 with a controversial shootout win over Finland. Two of this sport’s other traditional powerhouses, Canada and Russia, met in the bronze medal game.

ANSWER: ice **hockey**

In contrast, the US men’s basketball team took an astonishingly low seventh place in the 2019 FIBA World Cup, losing to France and this country in the playoffs. This country’s national team is led by Bogdan Bogdanovic [bog-don-oh-vitch] and Nikola Jokic [joh-kitch].

ANSWER: Republic of **Serbia**

(13) This painting's reddish sky may have been inspired by the brilliant sunsets that affected western Europe after the eruption of Krakatoa. For ten points each,

Name this painting, in which a person stands near a railing on a hill overlooking Oslo Harbor, holding their hands to their head and opening their mouth to let out the title expression of horror.

ANSWER: The Scream (accept Skrik; accept Der Schrei der Natur or The Scream of Nature; accept Shriek; accept The Cry)

The Scream is by this Norwegian artist, whose *Frieze of Life* series includes a painting that shows the effect of his sister's death on his family, *Death in the Sickroom*.

ANSWER: Edvard Munch

Munch's painting *Love and Pain*, another work from the *Frieze of Life*, has been informally given this title. In the painting, a red-haired woman bends over a pale-faced man, and seems to be feeding from him like this title creature.

ANSWER: Vampire (accept vampires)

(14) In a novel by this author, the unnamed narrator escapes from the communist Brotherhood and the fanatical Ras the Exhorter, but barely escapes from a riot instigated by Ras when he returns to New York. For ten points each,

Name this American author of *Invisible Man* and *Juneteenth*.

ANSWER: Ralph Ellison (accept Ralph Waldo Ellison)

Ellison's work is often classified among the writers of the Black Arts Movement, and as part of the African-American artistic "Renaissance" named for this New York neighborhood.

ANSWER: Harlem Renaissance

The Black Arts Movement was founded by a follower of this man, whose black nationalism is evoked by the speeches of Ras the Exhorter in *Invisible Man*. This man's *Autobiography* was co-written with Alex Haley before this man was assassinated in 1965, three years before the assassination of Martin Luther King, Jr.

ANSWER: Malcolm X ["X"] (accept Malcolm Little)

(15) The Meselson-Stahl experiment proved that replication of this molecule is semi-conservative. For ten points each,

Name this nucleic acid that stores the genetic information of cells. Rosalind Franklin was key in discovering this substance's double helix shape.

ANSWER: DNA (accept deoxyribonucleic acid)

When DNA is replicated, there is a continuous leading strand and a lagging strand made of these short pieces that must later be joined together.

ANSWER: Okazaki fragments

Okazaki fragments, like all DNA, are built from these subunits that consist of a sugar, a phosphate group, and a base like guanine or cytosine.

ANSWER: nucleotides (do not accept or prompt on "nucleosides")

(16) This structure was initially derided as a “Folly” and a “Big Ditch,” but it greatly reduced transport costs between the Atlantic Ocean and inland United States. For ten points each,

Name this massive engineering project built between 1817 and 1825. It allowed ships to transport goods from the Hudson River directly to the Great Lakes.

ANSWER: Erie Canal

The Erie Canal is located in this state, connecting its city of Buffalo to its capital, Albany.

ANSWER: New York

Shipping was also made more efficient by the steamboat, the creation of this early American inventor.

ANSWER: Robert Fulton

(17) In this type of philosophical argument, one person asks questions in the hopes of exposing a flaw in the other person’s argument. For ten points each,

Name this method of philosophical discussion, named for an ancient Greek philosopher who used it with Euthyphro [yoo-thih-froh] to analyze his definition of piety in one of many dialogues preserved by his student.

ANSWER: Socratic method (accept Socratic dialogue, etc.; accept anything that mentions Socrates)

This student of Socrates wrote *Euthyphro*, as well as *The Republic* and numerous other dialogues between Socrates and other characters. This Athenian thinker founded the Academy, where he taught Aristotle.

ANSWER: Plato (accept Platon)

In a Socratic-style argument, one generally begins by asking about the starting definitions and premises. This five-letter term, used interchangeably in mathematics with “postulate,” is used for an initial assumption or definition that is taken to be true.

ANSWER: axioms

(18) European colonizing forces built a pair of modern African capital cities as far inland on this river as ships could sail from the Atlantic. For ten points each,

Name this African river that is shorter than the Nile and longer than the Niger. A pair of neighboring central African countries share the name of this river; one styles itself a Republic and the other a Democratic Republic.

ANSWER: Congo River

The Congo River flows between the capital cities of the Democratic Republic of the Congo and the Republic of the Congo. Name either capital city.

ANSWER: Kinshasa and/or Brazzaville

The French built Brazzaville, and this other European country built Kinshasa, which was originally named Leopoldville. King Leopold II owned the Congo Free State and exploited its citizens for labor while ruling from its capital, Brussels.

ANSWER: Kingdom of Belgium

(19) Although fanfiction dates back to the times of Milton and Cervantes, its recent proliferation has given modern authors wildly different opinions on it. For ten points each,

Twitter jerk and homophobe Orson Scott Card has published fanfiction based on the works of Asimov and Shakespeare, but hates when people write fanfiction about his novels, like this one in which Andrew Wiggin is trained to command troops in a future war against insect-like alien fleets.

ANSWER: Ender's Game

This author of *Interview with the Vampire* and other *Vampire Chronicles* became notorious in the early 2000s for her fans by mail and at their workplaces for writing fanfiction based on her works.

ANSWER: Anne Rice (accept Anne O'Brien Rice)

This English author has won Hugo awards for his Sherlock Holmes fanfiction, as well as for original novels like *Coraline* and *American Gods*. This man encourages authors of fanfiction, including those who write works based on *Good Omens*, which this man wrote with his close friend Terry Pratchett.

ANSWER: Neil Gaiman [gay-mun] (accept Neil Richard MacKinnon Gaiman)

(20) The *New Horizons* probe made a historic flyby of this body and its satellites in 2015. For ten points each,

Name this dwarf planet that was, at the time of *New Horizons*' launch in early 2006, still considered the ninth planet of the Solar System.

ANSWER: 134340 Pluto

New Horizons observed the probable presence of this simple organic gas in the atmosphere of Pluto and the north pole of its largest satellite, Charon. This gas has chemical formula CH₄.

ANSWER: methane

New Horizons continued on to study Ultima Thule, a pair of small bodies fused together, in January 2019. Like Pluto and several other dwarf planets, Ultima Thule is located in this "belt" of space that extends beyond Neptune's orbit and is home to numerous small, rocky bodies.

ANSWER: Edgeworth-Kuiper [kye-per] belt