

Round 9

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Tossups

(1) **As U.S. President, this man authorized the voyage of the Great White Fleet and brokered the Treaty of Portsmouth, ending the Russo-Japanese War. This man and his son Kermit went on a lengthy African (*) safari in 1909, rather than seek a third term in office. “Speak softly and carry a big stick” was a personal motto of, for ten points, what U.S. President who succeeded William McKinley, founded the Bull Moose Party, and is depicted on Mount Rushmore?**

ANSWER: Theodore “Teddy” Roosevelt (prompt on “Roosevelt” alone)

(2) **This civilization’s spiritual rituals were recorded in the Chilam Balam manuscripts and were based on a 260-day cycle that was extended by the Long Count system. A demon named Seven Macaw is defeated by Hunahpu [hoo-nah-poo] and Xbalanque [sh’bal-ahn-kay], the Hero Twins, as told by this culture’s (*) Popul Vuh. For ten points, name this Mesoamerican culture whose calendar did not actually predict a 2012 apocalypse and which built the Temple of Kukulcan at Chichen Itza.**

ANSWER: Mayan civilization (culture, etc.)

(3) **One type of this quantity is calculated by taking the square root of two times the gravitational constant times the mass of a planet divided by the distance between the object and the planet. That calculation finds the amount of this quantity needed to (*) escape a planet’s gravitational pull. Objects in free fall accelerate until they reach the terminal type of, for ten points, what vector quantity that describes speed in a direction?**

ANSWER: velocity (accept escape velocity or terminal velocity; prompt on speed before read)

(4) **Description acceptable. These documents use News Gothic Bold font and, except for the original production of the first one, the title written in Univers font. *Flash Gordon* film serials inspired these documents, the first of which began “It is a (*) period of civil war.” The phrase “A long time ago, in a galaxy far far away” precedes, for ten points, what documents that establish the plots of a series of George Lucas science fiction films?**

ANSWER: Star Wars opening crawls (accept any description of “the text shown at the opening of Star Wars movies”)

(5) **In a novel by this man, the protagonist hears a sermon on Jonah from Father Mapple. This author created a lawyer’s assistant who answers, “I would prefer not to” in response to every request in the story (*) “Bartleby the Scrivener.” In a novel by this man, a gold coin is nailed to the *Pequod*’s mast as an incentive for sailors like Queequeg and Ishmael. For ten points, name this author of a novel about Ahab’s search for a white whale, *Moby Dick*.**

ANSWER: Herman Melville

(6) **Functional groups are added to this compound in the Friedel-Crafts reactions. Michael Faraday isolated this sweet smelling compound from illuminating gas. August (*) Kekulé dreamed of a snake eating its own tail, inspiring his discovery of this molecule's resonance structure. Cyclohexane shares its chemical formula with, for ten points, what carcinogenic compound, a six-membered aromatic ring with chemical formula C₆H₆?**

ANSWER: benzene

(7) **One of this country's monarchs, John the Good, negotiated the Treaty of Bretigny [breh-ti-nee] after being captured at Poitiers [pwa-ti-yay]. This country lost a battle on St. Crispin's Day to an army under Henry V. Forces from this country rallied around the (*) "Maid of Orleans," who was burned at the stake. For ten points, name this country that was defended by Joan of Arc during its Hundred Years' War with England.**

ANSWER: Kingdom of France

(8) **A Chinese member of this family of instruments produces sound in fan yin, an yin, or san yin, depending on the position of the left hand; that instrument is the *guzhen* [goo-chin]. The (*) bouzouki is a member of this instrument family, as is an instrument sometimes played with hammers, the dulcimer. Zithers and sitars are examples from, for ten points, what family of instruments that create sound by plucking or strumming, as with guitars and violins?**

ANSWER: string instruments (accept chordophones; accept word forms; accept zither before mentioned)

(9) **In a story by this author, "The Lass of Aughrim" is sung while Gretta Conroy reminisces about Michael Furey. In a novel by this man, Blazes Boylan has an affair with Molly, the wife of (*) Leopold Bloom, who represents the title hero of this man's stream-of-consciousness novel *Ulysses*. For ten points, "The Dead" is a short story from *Dubliners*, a collection by this Irish author.**

ANSWER: James Augustine Aloysius Joyce

(10) **According to a 1946 work, members of this ethnic group were not interested in letting their families know they were safe in prison. This ethnic group's "shame culture" is thus contrasted with American "guilt culture" in Ruth Benedict's *The (*) Chrysanthemum and the Sword*. Nisei are children born to first-generation immigrants of, for ten points, what ethnic group that was persecuted in the U.S. during World War II after the Pearl Harbor attacks?**

ANSWER: Japanese-Americans

(11) **In this process, spliceosomes and ribozymes remove introns before exons leave the nucleolus. To begin this process, polymerase binds to a promoter like the TATA box and separates hydrogen bonds. In the elongation step, this process uses uracil to create a (*) single-stranded complementary polymer for gene expression. The product of this process can be used in translation. For ten points, name this process that creates messenger RNA from a strand of DNA.**

ANSWER: transcription

(12) **This country's last two presidential elections were narrowly lost by Henrique Capriles. In 2005, this country's leader promised free heating oil for poor Americans; that support was provided through Citgo, the American arm of this country's national oil company. Nicolas (*) Maduro now leads, for ten points, what country that was once led by Hugo Chavez, who controlled South America's largest oil reserves and a corrupt government in Caracas?**

ANSWER: Bolivarian Republic of Venezuela (accept República Bolivariana de Venezuela)

(13) **A ridge separates this sea from the incredibly salty Garabogazkol lagoon. The Absheron Peninsula, home to numerous oil production facilities at Baku, juts into this sea. The countries of the Caucasus Mountains lie between the (*) Black Sea on the west and this sea on the east. The Ural and Volga rivers flow into, for ten points, what sea north of Iran and south of Kazakhstan and Russia, the largest inland body of water in the world?**

ANSWER: Caspian Sea

(14) **This artist's work, including a marble version of *Eternal Springtime*, is the focus of a branch of the Philadelphia Museum of Art. A work by this man features six figures clad in rags and nooses. This sculptor of (*) *The Burghers of Calais* never finished his *Gates of Hell* series, which includes a statue of a man resting his chin on his hand. For ten points, identify this French sculptor of *The Thinker* and *The Kiss*.**

ANSWER: Auguste Rodin

(15) **These values exist at a function's critical points when the function is concave down. The graph of y equals x squared has no global one of these places, but y equals negative x squared has one at the (*) origin. A function has one of these points where its derivative changes from positive to negative; that is, it stops increasing and begins decreasing. For ten points, name these points, the highest point a graph reaches, contrasted with a function's minimum.**

ANSWER: maximum (accept supremum)

(16) **In *The Three Musketeers*, studs containing these objects belonging to Anne of Austria are given to the Duke of Buckingham and stolen by Milady de Winter. Mathilda Loisel goes into debt to replace paste replicas of these (*) gemstones, one of which is "As Big as the Ritz" in an F. Scott Fitzgerald short story. For ten points, name this precious stone set into jewelry in Guy de Maupassant's "The Necklace."**

ANSWER: diamonds

(17) **Pelagius taught that these actions are not inherited from one's parents, and outmoded types of these religious actions are *acedia* and *vainglory*. Believers may compensate for these actions by acquiring a plenary or partial (*) indulgence instead of serving temporal punishment on Earth or in Heaven. Gluttony and wrath are two of the Seven Deadly types of these actions. For ten points, name these actions that go against the commands of God.**

ANSWER: sins (accept reasonable equivalents like trespasses)

(18) **A group of people was subjected to this event after Elias Boudinot and other leaders signed the Treaty of New Echota. Present-day Oklahoma, then a territory, was the destination for many victims of this event, which got its name from the oppression of the (*) Cherokee nation during it. Andrew Jackson supported, for ten points, what nineteenth century event in which tribes of Native Americans were forcibly relocated west of the Mississippi River?**

ANSWER: Trail of Tears (prompt on descriptions, such as “removal of Native Americans,” before “relocated” is read)

(19) **A character in this play describes himself as “constant as the North star” after being asked to repeal Cimber’s banishment, and Artemidorus writes a letter telling the title man to “come not near Casca and have an eye to Cinna.” A funeral speech in this play begins, (*) “friends, Romans, countrymen, lend me your ears,” and mocks the title statesman’s killer, Brutus. FTP identify this Shakespeare tragedy about the death of a Roman emperor.**

ANSWER: The Tragedy of Julius Caesar

(20) **The field equations for a rotating one of these objects were solved by Roy Kerr. Objects above the Tolman-Oppenheimer-Volkoff limit are predicted to gravitationally collapse within the (*) Schwarzschild radius, thereby forming these objects. These objects only possess mass, charge, and angular momentum, as observable from beyond its event horizon. For ten points, name these regions of space whose gravitational fields are strong enough to prevent light from escaping.**

ANSWER: black holes

Bonuses

(1) This opera's title character answers Elsa's prayer by arriving in a swan-driven boat and swearing to protect her, so long as she never asks his name. For ten points each,

Name this 1848 opera about the son of Parsifal who is sworn to secrecy as a knight of the Holy Grail.

ANSWER: Lohengrin

Lohengrin is an opera by this prolific German composer, who used Germanic myth as the plot of his epic *Ring* cycle.

ANSWER: Richard Wagner [ree-kard vahg-ner]

Act 3 of *Lohengrin* opens just after Lohengrin and Elsa take part in this ceremony. Wagner's famous chorus, asking "Faithfully guided, draw near/to where the blessing of love shall preserve you," is now often played at these ceremonies today.

ANSWER: wedding (accept equivalents)

(2) This linguist recorded a tale in which Eru Ilúvatar creates the Ainur, who sing the world into being, in *The Silmarillion*. For ten points each,

Name this British creator of a complex mythology in which some Ainur travel Middle Earth disguised as wizards, like Alatar and Pallando the Blue and Radagast the Brown.

ANSWER: J(ohn) R(onald) R(euel) Tolkien

In some of Tolkien's novels, this "Grey" wizard helps Bilbo Baggins, and transforms into a "White" wizard after he is killed by the Balrog and resurrected.

ANSWER: Gandalf the Grey (accept Gandalf the White; accept Mithrandir; accept Olórin)

Gandalf returns from the dead to help Bilbo's nephew, Frodo Baggins, transport the title powerful piece of jewelry to Mordor to be destroyed in this three-book novel by Tolkien.

ANSWER: The Lord of the Rings

(3) The biotech company Oxitec released a “self-limiting” strain of *Aedes aegypti*, a type of this insect, in Juazeiro in 2015; that strain of this insect possesses a gene that kills offspring before they reach adulthood. For ten points each,

Name this insect, a common vector for dengue fever and West Nile virus.

ANSWER: mosquitoes

Mosquitoes are also blamed for spreading this viral disease, which broke out in Brazil in 2015.

ANSWER: Zika virus (accept Zika fever, disease, etc.)

Zika has somewhat mild common symptoms, including rash, pain, and fever, but it can cause severe fetal complications, such as this birth defect, in which the brain does not develop normally.

ANSWER: microcephaly

(4) Counting the dozens of these entities is complicated by their uneven starts and ends and their occasional control over separate territories instead of a single unified state, but traditional chronicles like the *Records of the Grand Historian* agree that the Xia [she-ah] was the first, and the last one, the Qing [ching], was replaced by a republic in 1912. For ten points each,

Name these ruling entities of a large Asian territory.

ANSWER: dynasties of China (prompt on partial answers)

After kings led the Shang and Zhou dynasties, Ying Zheng took the title of First Emperor – specifically, Shi Huangdi – when he founded this dynasty in 221 BC.

ANSWER: Qin dynasty (accept Qin Shi Huang(di))

After the Qin dynasty’s collapse, the peasant Liu Bang rose to power and founded this successor dynasty. This dynasty’s four centuries of power straddle the year 0 AD, and the majority ethnic group of China takes its name from this prosperous dynasty.

ANSWER: Han dynasty (accept Han people)

(5) For ten points each, answer the following about secretions in the human body.

The lachrymal glands secrete this saline mixture to flush pollutants and pathogens from your eye.

ANSWER: tears

This viscous fluid is filled with glycoproteins and antiseptic molecules like lysozyme. When produced by the respiratory system, this fluid is called phlegm [flem].

ANSWER: mucus (accept mucous membranes)

Patients with this genetic disease produce a thick, sticky mucus, leading to chronic lung infections and a life expectancy of roughly 40 years.

ANSWER: cystic fibrosis (accept CF)

(6) The Salat for this day is generally offered in a large, open hall or field and can only be performed in congregation. For ten points each,

Name this lavish celebration in Islam. This first day of the month of Shawwul marks the end of Ramadan.

ANSWER: **Eid al-Fitr** (prompt on “Eid” alone)

Eid al-Fitr [e-EED al-FEET-ur] ends the month of Ramadan, during which Muslims perform this action from sunrise to sunset. Very young, old, ill, and pregnant people may pay a fidyah instead of performing this action, since the loss of nutrients could harm their health.

ANSWER: **fasting** (accept **Sawm**; accept descriptions like **not eating** or **abstaining** from food and/or drink)

The dates for Ramadan move from year to year because the Islamic calendar is based on this system, causing the Islamic calendar to fall about ten days behind the Gregorian calendar each year.

ANSWER: **lunar** calendar (accept descriptions like **movements of the moon**)

(7) Identify some stories by Edgar Allan Poe in which mysterious organizations carry out sinister plots, for ten points each.

In this short story, a mysterious branch of the Spanish Inquisition performs elaborate tortures on an unnamed narrator, strapping him under a swinging blade and trapping him between red-hot iron walls and a seemingly bottomless hole.

ANSWER: The **Pit and the Pendulum**

Montresor jokes that he is a member of the Masons before walling up Fortunato in a cellar that does not actually contain the title wine in this short story.

ANSWER: The **Cask of Amontillado**

In this short story, William Legrand and his servant, Jupiter, discover a mysterious cipher that leads them through an elaborate path to a pirate treasure.

ANSWER: The **Gold Bug**

(8) For ten points each, answer the following about Buck Showalter shooting himself in the foot.

This team lost the 2016 AL Wild Card Game to Toronto while Zach Britton, whose 0.56 ERA was an all-time record low for a reliever, sat in the bullpen. Showalter, this team's manager, used six other relievers, ending with Ubaldo Jimenez, who gave up a game-ending home run.

ANSWER: **Baltimore Orioles** (accept either or both)

Pundits speculated, but Showalter denied, that Britton stayed in the bullpen because he wouldn't have earned this statistic. This statistic applies when a pitcher enters the game leading by 3 or fewer runs and completes the victory.

ANSWER: **save** (accept elaborations like **save** situation; do not accept hold)

This wasn't Showalter's first time ruining a season by not bringing in the closer; in 1995, as manager of this team, he left John Wetteland in the bullpen while Jack McDowell let the Seattle Mariners come back to win the ALCS. Mariano Rivera was also in this team's bullpen that day, as he was for the next 18 seasons.

ANSWER: New York **Yankees** (prompt on New York)

(9) For ten points each, answer the following about artwork commissioned by Pope Julius II.

Julius decorated the apartments of the Apostolic Palace with numerous frescoes, including *The School of Athens* and *La Disputa*, by this Italian artist.

ANSWER: **Raphael** Sanzio da Urbino

Julius hired Michelangelo to paint the ceiling of this chapel of the Apostolic Palace. Michelangelo's works on this room's ceiling include *The Creation of Adam*.

ANSWER: **Sistine** Chapel

Michelangelo was also commissioned to sculpt a depiction of this biblical figure for Julius' tomb. Due to an awkward translation in the Vulgate, this sculpture has horns.

ANSWER: Horned **Moses**

(10) For ten points each, answer the following about glycosidic bonds.

Glycosidic bonds are this type of bond, in which electron pairs are shared between the atoms.

ANSWER: **covalent** bond

Glycosidic bonds are made between a hydroxyl group and this type of biomolecule, which consist entirely of carbon, hydrogen, and oxygen. Sugars like glucose are an example of this type of molecule.

ANSWER: **carbohydrates** (accept **saccharides** and elaborations like polys**saccharides**)

Glycosidic bonds connect individual saccharide molecules in a polysaccharide, an example of this type of macromolecule constructed from repeated subunits. Cellulose is a natural example of these molecules made from repeated glucose units.

ANSWER: **polymer** (accept word forms, like **polymeric** molecule)

(11) For ten points each, name the following political frenemies of Alexander Hamilton.

This first Secretary of State and third U.S. President organized the Compromise of 1790 with Hamilton, who later supported him in the presidential election of 1800, but this man's disagreements with Hamilton over the proper size of the central government led to the development of the first political parties.

ANSWER: Thomas Jefferson

With Hamilton and John Jay, this Virginian wrote the *Federalist Papers*. Later, this leader of the Democratic-Republicans in the House opposed many of Hamilton's proposals.

ANSWER: James Madison

This first U.S. Attorney General generally agreed with Hamilton politically, but strongly opposed Hamilton's writing of the 1794 Jay Treaty with Great Britain.

ANSWER: Edmund Randolph

(12) In a formula often memorized by beginning calculus students, the sum of the first n of these numbers equals the square of the n th triangular number. For ten points each,

Name this type of number, whose first few examples include 1, 8, 27, 64, and 125.

ANSWER: perfect cubes (accept cubic numbers; accept any description of third powers of positive integers)

Calculus students are often told to memorize that formula in a lesson on simplifying the computation of Riemann sums, which are used in calculating this mathematical operation. The Fundamental Theorem of Calculus notes that differentiation is the inverse of this calculus operation.

ANSWER: integration (accept word forms, like finding integrals)

Though any shape could be used, a calculus student's first Riemann sums often involve this shape, a quadrilateral with four equal right angles, though not necessarily four equal side lengths.

ANSWER: rectangle

(13) The legendary first proof of this effect involved a brass band on a train. For ten points each,

Name this effect in which the pitch of a sound drops as the source of the sound passes and moves away from the observer.

ANSWER: Doppler effect

In the Doppler effect, a wave source moving towards you causes the waves to take less time to reach you, causing this property of the waves to increase. This quantity is inversely related to the wavelength, because a longer wavelength requires fewer repetitions of the wave per unit time.

ANSWER: frequency (accept wave number)

The Doppler effect also applies to light waves given off by distant stars. This phenomenon notes that, because the universe is expanding and stars are accelerating away from Earth, the wavelength of that light is increased.

ANSWER: redshift (accept negative blueshift)

(14) For ten points each, answer the following about American national forests.

Two of the three largest national forests – Tongass and Chugach – are, unsurprisingly, found in this largest U.S. state.

ANSWER: Alaska

Daniel Boone National Forest runs through the eastern half of this state, a little east of Lexington.

ANSWER: Kentucky

Malheur National Forest is in this state's section of the Blue Mountain range. South of the forest is this state's Malheur Wildlife Refuge, whose headquarters were sieged by domestic terrorists led by Ammon Bundy in 2016.

ANSWER: Oregon

(15) This expansive novel includes a nineteen-chapter analysis of the Battle of Waterloo. For ten points each,

Name this long French novel in which Inspector Javert [jah-VAYR] pursues the convict Jean Valjean [zhon val-ZHON], who saves Fantine's daughter, Cosette, from the cruel Thenardier [teh-nahr-dee-AY] family.

ANSWER: Les Misérables (accept The Miserables or The Miserable Ones)

Les Misérables is a novel by this author of *Toilers of the Sea* and *The Hunchback of Notre Dame*.

ANSWER: Victor Marie Hugo

In *Les Misérables*, Cosette falls in love with this revolutionary and member of the Friends of the ABC. During the June Rebellion, Jean Valjean saves this man, who rejects Éponine and marries Cosette.

ANSWER: Marius Pontmercy (prompt on "Pontmercy")

(16) This natural disaster destroyed the hundreds of buildings in a major European city. After residents fled to the banks of the Tagus River to escape the rubble, thousands of people died in a tsunami caused by this disaster. For ten points each,

Name this 1755 natural disaster, estimated at roughly 8.7 magnitude, that destroyed a major European capital city.

ANSWER: 1755 Great Lisbon earthquake (prompt on "earthquake" by asking "in what city?")

The 1755 Lisbon earthquake devastated this European kingdom, though this country did rebuild the city.

ANSWER: Portugal

The Lisbon earthquake destroyed dozens of churches on All Saints' Day, shaking many people's faith in a benevolent God and serving as a catalyst for this European intellectual movement. Voltaire and other thinkers in this movement promoted reason over faith.

ANSWER: the Enlightenment

(17) Ancient religions had a fascination with giants. For ten points each,

The word “giant” comes from the “Gigantes” [jee-GAN-teez], a race of extraordinarily strong creatures who were the children of Gaia and Uranus after this group of gods. These gods included Oceanus and Rhea, and they preceded the Olympians as the rulers of Greek mythology.

ANSWER: Titans

This race of mythical Norse giants were divided into groups of “frost” and “fire” giants, and were descended from Ymir. Loki was the son of Farbauti and was married to Angrboda, both of whom were these giants.

ANSWER: Jötunn (accept Jötnar)

The mysterious biblical term “nephilim” is often interpreted as “giants,” and describes the offspring of “the daughters of men” and “the sons of God;” some scholars believe that the “sons of God” were these winged, Heavenly messengers, who are divided into “choirs” like seraphim and cherubim.

ANSWER: angels (do not accept “archangels”)

(18) A group of women stops the Peloponnesian War with a peaceful protest in one of this author’s plays. For ten points each,

Name this ancient Greek comic playwright of *Lysistrata*, whose other works include *The Wasps*, *The Clouds*, *The Frogs*, and *The Birds*.

ANSWER: Aristophanes [air-ih-stah-fo-neez]

In Greek tragedy, this group of performers discusses the play’s events in unison and serves as a summarizing spectator. The *Wasps*, *Clouds*, *Birds*, and *Frogs* of Aristophanes’ plays serve this role, whose name now refers to a group of singers or a song’s refrain.

ANSWER: chorus (accept choregos)

In *The Wasps*, the “wasps” are actually old men who spend their days serving in these judicial bodies. In Aeschylus’s [ess-kuh-liss’s] *Eumenides*, [yoo-men-ih-dees], Athena leads one of these groups, which judges Orestes [or-est-ees] to be innocent.

ANSWER: jury

(19) Plant life in this biome is restricted to shrubs, mosses, and other small species that can survive the harsh conditions. For ten points each,

Name this biome that exists in Antarctica and above the “taiga belt” in the Arctic.

ANSWER: tundra

Temperatures in the tundra annually surpass the freezing point, but the ground temperature rarely does; the ground becomes this material if it experiences sub-freezing temperatures for more than two straight years.

ANSWER: permafrost

The environment may also take on tundra-like qualities at high altitudes, a biome known as Alpine tundra. This line marks the transition on a mountain between the Alpine tundra and sub-Alpine biomes.

ANSWER: tree line (accept descriptions of “the point where trees stop growing”)

(20) In announcing that striking governmental employees were in violation of federal law, this man noted “I’m maybe the first one ever to hold this office who is a lifetime member of an AFL-CIO union,” relating to his time as the President of the Screen Actors Guild. For ten points each,

Name this U.S. President who fired over 11,000 striking air traffic controllers in 1981.

ANSWER: Ronald Reagan

A few months prior, Reagan quipped to his surgeons, “I hope you’re all Republicans!” after he was wounded in an attempted assassination attempt by this deranged Jodie Foster fan. This man was released from a mental hospital in September 2016.

ANSWER: John Hinckley, Jr.

In 1984, in sound testing prior to a weekly radio address, Reagan joked that “I’m pleased to tell you that today I signed legislation that will outlaw” this country “forever. We begin bombing in five minutes.” This Cold War superpower and rival of the U.S. did not find the joke funny.

ANSWER: Russia (accept Soviet Union or USSR or the Union of Soviet Socialist Republics)