

Bowl Round 9

First Half

(Tossup 1) **In the Einstein cross, one of these bodies appears four times due to gravitational lensing. They are split into radio-quiet and radio-silent varieties, and when their jets are aligned towards Earth, they are called(*) blazars.** These active galactic nuclei are formed when material from an accretion disk falls into a black hole and releases large amounts of radiation. For ten points, name these powerful and luminous objects whose common name is a contraction of quasi-stellar radio source.

Answer: quasars (accept quasi stellar objects or quasi-stellar radio sources before mentioned)

(Bonus 1) The magnitudes of these natural events are measured by the Richter scale. For 10 points each:

[10] Name these natural disasters in which the ground shakes due to seismic waves from the lithosphere.

ANSWER: earthquakes

[10] These seismic waves, which follow p-waves, move rock particles up and down rather than compressing them.

ANSWER: S-waves [or secondary waves]

[10] This other scale, modified from a scale created by an Italian scientist, classifies earthquakes based not on their magnitude, but rather the damage they cause to buildings and people.

ANSWER: modified Mercalli scale

(Tossup 2) **An artist from this nation created the *Dinner Party*, a triangular table with place settings for historical women like Empress Theodora and Virginia Woolf. Another artist from this nation, a pupil of Edgar Degas, first gained prominence after premiering works like *The Boating Party* at Paul Durand-Ruel's art exhibition. A third artist from this nation who married(*) photographer Alfred Stieglitz used flowers like hollyhocks and canna lilies as a representation of the female form.** For ten points, name this home of artists Judy Chicago and Georgia O'Keeffe.

Answer: USA [Accept America]

(Bonus 2) Salon des Indépendants removed this artist's "obscene" depiction of Marie Bonaparte in the controversial work, *Princess X*. For ten points each:

Part 1: Name this Romanian sculptor, a modernist who had many of his works on display at the Armory Show. He created a portrait of James Joyce and of the work, *Sleeping Muse*.

Answer: Constantin Brancusi

Part 2 This art of Brancusi faced import duties due to it not being considered art by the customs agent, due to not depicting the avian accurately according to the official.

Answer: *Bird in Space*

Part 3: This proto-cubist work by Brancusi depicts lovers embracing each other.

Answer: *The Kiss*

(Tossup 3) **Empress Wu claimed to have re-established this dynasty during a brief interruption of the Tang Dynasty. This dynasty seized control following the Battle of Muye. Philosophers active during this dynasty include Sunzi, (*) Laozi, and Confucius. This dynasty's Eastern period is divided into the Spring and Autumn and Warring States Periods. For ten points, name this dynasty that was succeeded by the Qin.**

Answer: Zhou Dynasty

(Bonus 3) David of Sasun is an epic hero in the folklore of this country. For ten points each:

Part 1: Name this Central Asian country with capital at Yerevan whose people were targeted by a genocide during World War I.

Answer: Republic of **Armenia**

Part 2: David's opponent, the evil king Melik, may represent the leaders of this empire which committed the Armenian Genocide.

Answer: **Ottoman** Empire

Part 3: Melik is directly modeled after this Egyptian leader from the Book of Exodus who refuses to let Moses and the Israelites leave Egypt.

Answer: **Pharaoh**

(Tossup 4) **A character in this play repeatedly skips her typing classes at business college to visit penguins at the zoo, and is given the nickname "Blue Roses" by a man who comes to dinner as a (*) "gentleman caller." After the lights go out in this play, Laura is told to "blow out the candles" by her brother, Tom. Amanda Wingfield is the matriarch of the central family in, for ten points, what Tennessee Williams play about a delicate figurine collection?**

Answer: The Glass Menagerie

(Bonus 4) Bengy and Quentin are among the four narrators of non-linear novel by this author published in 1929. For ten points each,

Part 1: Name this author who wrote about the Compson family in *The Sound and the Fury*.

Answer: William **Faulkner**

Part 2: In this Faulkner novel, the members of the Bundren family embark on a journey to bury their matriarch Addie in her desired resting place.

Answer: *As I Lay Dying*

Part 3: This state is the primary setting of both *The Sound and the Fury* and *As I Lay Dying*. Faulkner lived in New Albany and Oxford in this southern state.

Answer: Mississippi

(Tossup 5) **The only surviving text of antiquity solely on this subject is Vegetius' *Epitoma*. A 5th century BCE text named for these events claims that these events "rely on deception."** In *The End of History and the Last Man*, Francis Fukuyama argues that these events would no longer occur in compliance with the(*) Deomcratic Peace Theory. For ten points, name this act of two more or opposing sides entering into conflict.

Answer: Warfare [Accept Military; Accept Conflicts before mentioned]

(Bonus 5) This man conducted an experiment to see if letters titled to well-known medical associations and charities are more likely to reach their destination than letters titled to controversial groups like the American Nazi Party. For ten points each:

Part 1: Name this psychologist that devised a controversial shock experiment which led to the paper "Behavioral Study of Obedience."

Answer: Stanley Milgram

Part 2: Milgram's look into obedience has been used to argue why the US soldiers in this Vietnam War atrocity committed war crimes in a namesake hamlet.

Answer: My Lai Massacre

Part 3: Milgram was high school friends with fellow psychologist Philip Zimbardo, who developed a similarly controversial "Prison Experiment" at this California University.

Answer: Stanford University

(Tossup 6) **A quantum computer algorithm for performing this task was invented by MIT professor Peter Shor. The RSA cryptosystem relies on the difficulty of performing this task on large numbers. When doing this task on(*) n using trial division, one must only check numbers up to the square root of n. For prime numbers, this task returns the original number.** For 10 points, name this task that breaks an integer into a product of primes.

ANSWER: prime factorization [or factoring]

(Bonus 6)The "density" one of these is used in physics, while another type is used cryptographically in the Hill cipher. For 10 points each:

[10] Name these arrays of numbers whose identity type has ones along the main diagonal.

ANSWER: matrix [or matrices]

[10] Entries in adjacency matrices represent the number of these entities belonging to each node. When all of these entities are bidirectional in a graph, the graph is undirected.

ANSWER: edges

[10] Nodes on a graph are also known by this term, denoted v. This term also denotes points where two rays or line segments meet.

ANSWER: vertex [or vertices]

(Tossup 7) **Outnumbered two to one, an army from this nation defeated the Ottomans at Breadfield, thanks in part, to the professional "Black Army." Eventually overthrown by the**

Arrow Cross, Miklos Horthy led this nation as an Axis ally until 1944. The earlier Treaty of(*) Trianon freed Croatia and gave Transylvania back to Romania at the expense of this kingdom. For ten points, name this Magyar kingdom centered in Budapest.

Answer: Kingdom of Hungary

(Bonus 7) French-Africans in the 18th century would commiserate to make music in this city's Congo Square on Rampart Street. For ten points each:

Part 1: Name this Louisiana city home to the French Quarter.

Answer: New Orleans

Part 2: New Orleans is on the shores of this lake connected to Lake Borgne and the rest of the Gulf of Mexico by the Rigolets.

ANSWER: Lake Pontchartrain

Part 3: Ferrying folk around Lake Pontchartrain is a historic sternwheel steamboat that shares its name with a Native American group led by Tattooed Serpent and a southern Mississippi city.

ANSWER: Natchez [Accept SS Natchez]

(Tossup 8) **This play opens outside of a church in Covent Garden, where Freddy Eynsford-Hill bumps into a girl who is selling flowers and knocks her into the mud. In this play, Colonel Pickering and (*) Henry Higgins, a phonetics professor, try to teach Eliza Doolittle to speak without her Cockney accent. The musical *My Fair Lady* is based on, for ten points, what George Bernard Shaw play titled for a mythical sculptor?**

Answer: Pygmalion

(Bonus 8) Authors from this family used the pseudonyms Acton, Currer, and Ellis Bell on some of their works so that readers would think they were men. For ten points each,

Part 1: Give this real last name shared by the sisters Anne, Charlotte, and Emily, the authors of works like *Agnes Grey* and *Villette*.

Answer: Brontë (accept Anne, Charlotte, and/or Emily Brontë; accept the Brontës or the Brontë sisters)

Part 2: Charlotte Brontë wrote this novel, in which an orphaned woman leaves her job as a governess at Thornfield Hall when she discovers that its owner, Mr Rochester, has a secret wife hidden in his attic.

Answer: Jane Eyre

Part 3: In this novel by Emily Brontë, Heathcliff takes over the title estate to get revenge for his mistreatment as a child, and ruins the lives of his neighbors when his sweetheart, Catherine, marries Edgar Linton.

Answer: Wuthering Heights

Sixty-Second Round

The categories are...

1. Steelmaking
2. The Hunchback of Notre Dame
3. Irish Home Rule

Steelmaking

Name the...

Part 1: Element that reacts with steel to form rust.

Answer: oxygen [or O]

Part 2: Element alloyed with iron in steel.

Answer: carbon [or C]

Part 3: Element introduced to steel to make stainless steel.

Answer: chromium [or Cr]

Part 4: Process used to commercially manufacture steel.

Answer: Bessemer process

Part 5: Animal that names crude iron used in the steelmaking process.

Answer: pig [or pig iron]

Part 6: Rapid cooling process steel can undergo to harden.

Answer: quenching

The Hunchback of Notre Dame

In relation to the novel *The Hunchback of Notre Dame*, who or what is...

Part 1: The job of the title man, Quasimodo, who lives in the cathedral?

Answer: bellringer (accept word forms like ringing bells)

Part 2: The author of the book, who also wrote *Les Miserables*?

Answer: Victor Hugo (accept Victor Marie Hugo)

Part 3: The beautiful street dancer who was switched with Quasimodo as a baby?

Answer: La Esmeralda (accept Agnès Guybertaut)

Part 4: Quasimodo's guardian, a cruel archdeacon who falls in love with the street dancer?

Answer: Claude Frollo (accept Dom Claude Frollo or Monseigneur Claude Frollo)

Part 5: The captain of the King's Archers, with whom the street dancer falls in love?

Answer: Captain Phoebus de Chateaupers (accept either underlined name)

Part 6: The poet to whom the street dancer is married?

Answer: Pierre Gringoire

Irish Home Rule

During the period of Irish Home Rule, name the...

Part 1: Capital of Ireland that was the setting of many violent protests?

Answer: Dublin

Part 2: Early 20th-century war that led to the end of the Irish Home Rule movement?

Answer: World War I

Part 3: Christian spring holiday that names a 1916 armed insurrection in Dublin that led to the passage of the Third Irish Home Rule Act?

Answer: Easter

Part 4: Opponent of Benjamin Disraeli and four-time Prime Minister who tried to pass Home Rule legislation?

Answer: William Gladstone

Part 5: Supporter of Irish Home Rule and lover of Kitty O'Shea who is commemorated on Ivy Day?

Answer: Charles Stewart Parnell

Part 6: Sinn Fein leader whose negotiations for Irish independence led to his 1922 assassination by fellow IRA members?

Answer: Michael Collins

Second Half

(Tossup 9) **King Ziusudra is warned of one of these events by the Sumerian god Enki. Emperor Yu the Great became Xia Emperor after successfully managing one of these events. A survivor of one of these events in Babylonian myth was named Utnapishtim. A pair of humans who threw stones over their backs were notable for surviving one of these events and were named Pyrrha (*) and Deucalion. A Biblical character waits on the mountains of Ararat for one of these events to end with his son Japheth. For ten points, name this event that Noah survived by building an ark.**

ANSWER: **flood**

(Bonus 9) This man fails to stay awake long enough to pass Utnapishtim's trial. For ten points each,

[10] Name this Sumerian king who seeks immortality in an ancient "Epic". This king befriends Enkidu, a wild man who is punished by the gods for slaying the Bull of Heaven.

ANSWER: **Gilgamesh**

[10] The Epic of Gilgamesh is from this Middle-Eastern region located in between the Tigris and Euphrates Rivers. This region flourished under the reign of rulers like Sargon and Hammurabi.

ANSWER: **Mesopotamia**

[10] One of Gilgamesh's foes was this terrible guardian of the Cedar Forest. A sun god named Shamash binds this beast with his winds, allowing Gilgamesh and Enkidu slay it.

ANSWER: **Humbaba**

(Tossup 10) **The Jurassic-era Sinoconodon is an early example of this class. This is the only class of animals to possess a neocortex, which is used for complex thinking. Along with birds, this class contains the(*) endothermic vertebrates. The only egg laying examples of this**

class are the monotremes, which include platypus and echidna. For ten points, name this class of animals, whose members possess fur and feed their young milk.

Answer: mammals (or mammalia)

(Bonus 10) Answer the following questions about the assumptions of Hardy-Weinberg equilibrium, which says that allele and genotype frequencies do not change between generations. For ten points each,

Part 1: Under Hardy-Weinberg equilibrium, this process is always random. When it occurs between individuals that are related, this process is called inbreeding.

Answer: **mating** (accept sexual reproduction; accept fertilization; accept sex; accept other answers that indicate two individuals producing offspring)

Part 2: Hardy-Weinberg always assumes a large population size to offset this effect, which is the change in allele frequency in a population due to random sampling, not selection.

Answer: **genetic drift**

Part 3: These events do not happen under Hardy-Weinberg equilibrium because they alter the genome of an organism. They can be classified as "point" or "frameshift."

Answer: **mutations**

(Tossup 11) **This instrument represents "The Perennial Question of Existence" in the Charles Ives series *The Unanswered Question*. Anton Weidinger developed a keyed one of these instruments, leading to Haydn composing a concerto for this (*) instrument. The word for "Fanfare" likely comes from the Arabic word for this instrument, and the similar cornet is used exclusively over this instrument in British military bands. For ten points, name this brass instrument played by jazz artist Louis Armstrong.**

Answer: Trumpet

(Bonus 11) The popularity of this musical genre increased demand for pianos in the U.S. For 10 points each:

Part 1: What highly syncopated musical form was developed by Black musicians around St. Louis in the late 19th century?

Answer: Rag or Ragtime

Part 2: This composer of the opera *Treemonisha* and the rag standard "The Entertainer" is the best-known Ragtime musician.

Answer: Scott Joplin

Part 3 Perhaps the best-known Ragtime song is this work by Joplin named for a club in Sedalia, Missouri.

Answer: Maple Leaf Rag

(Tossup 12) **The partition coefficient represents a ratio of values for this property, which is used to separate compounds during liquid-liquid extraction. A reaction's "K sub sp" is also called the "product" for this intensive property. (*)** Salts containing alkali metals, nitrate, and ammonium ions always have this property in water. For ten points, name this property which measures the ability of compounds to dissolve in other compounds.

ANSWER: **solubility**(accept soluble)

(Bonus 12) For ten points each, answer the following about the Hall-Heroult process.

[10] The Hall-Heroult process uses the ore bauxite as a source for this metallic element, which has atomic number 13 and is used to make kitchen foil.

ANSWER: **aluminum** (accept |Al|; accept |aluminium|)

[10] Dissolved aluminum oxide undergoes this process to purify the elemental aluminum. This process can also separate water into hydrogen and oxygen using a direct electrical current.

ANSWER: **electrolysis**

[10] The Hall-Heroult process uses a solvent of molten cryolite, which contains 6 atoms of this element. This is the most electronegative element.

ANSWER: **fluorine** (accept |F|)

(Tossup 13) **The killing of Ephraim's concubine in this book led to the sacking of the allied Benjamite city of Gibeah. A prophetess in this book cries out a namesake "Song" after Barak leads the Israelites to victory over the Canaanites at Sisera. A namesake leader in this biblical book was betrayed by his lover (*)** Delilah, who betrayed that immensely powerful man to the Philistines. For ten points, name this Old Testament book that recounts the exploits of Deborah and Samson.

Answer: Book of Judges

(Bonus 13) This leader had Michael Servetus burned at the stake for heresy. For ten points each,

[10] Name this early believer in predestination. This thinker laid out his belief in God's absolute sovereignty in his work *Institutes of the Christian Religion*.

ANSWER: John **Calvin**

[10] Calvinism is a branch of this denomination of Christianity, which broke from Catholicism over the sale of indulgences. This is the largest Christian denomination in the United States.

ANSWER: **Protestantism** (anti-prompt on "Baptism")

[10] John Calvin used this term to describe those who were chosen by God to enter heaven. According to Calvin, everyone not in this group was condemned to eternal damnation.

ANSWER: the **Elect**

(Tossup 14) **Despite this event's target requesting it, an X-ray machine belonging to Thomas Edison was not used to help find a stray bullet. This event was carried out by Leon Czolgosz, an anarchist inspired by Emma Goldman. This (*)** event, which occurred at the Pan-American Exposition in Buffalo, New York, resulted in its target's death of gangrene eight days later. For ten points, name this assassination of the president who preceded Theodore Roosevelt.

Answer: assassination of William McKinley (accept any answer indicating the killing of William McKinley)

(Bonus 14) The first wave of feminism was a time of great progress for women's rights. For ten points each, answer some things about that movement.

Part 1: This Quaker suffragette published the magazine "The Revolution" and was arrested for voting and refusing to pay a fine.

Answer: Susan Brownell Anthony

Part 2: This constitutional amendment states that citizens can not be denied the ability to vote based on sex and was supported by the suffragettes.

Answer: 19th Amendment

Part 3: This female writer is said to have begun the "Second Wave" of feminism in the U.S. with her book *The Feminine Mystique*.

Answer: Betty Friedan

(Tossup 15) **In a play about this legendary figure, he kills Valentine in a duel and seduces Valentine's sister, Gretchen. In a play titled for this character, he asks "was this the face that launch'd a thousand ships?" when confronted with the ghost of (*) Helen of Troy, who has been summoned by Mephistopheles, a demon. Christopher Marlowe and Johann von Goethe wrote plays about, for ten points, what legendary man who makes a pact with the devil?**

Answer: Faust (accept Doctor Faustus)

(Bonus 15) Edward FitzGerald first translated this set of quatrains into English in the 1850s. FTPE,

Part 1: Name this set of poems. The speaker of one of these poems wishes for "A Book of Verses underneath the Bough, / A Jug of Wine, a Loaf of Bread- and Thou" to make his "Wilderness" a "Paradise."

Answer: The Rubaiyat (accept, but do not otherwise reveal, The Rubaiyat of Omar Khayyam)

Part 2: The *Rubaiyat* is attributed to this 11th Century author.

Answer: Omar Khayyam

Part 3: Khayyam originally wrote the *Rubaiyat* in this language spoken in western Iran. This language traces its heritage back to a namesake ancient empire based in Iran.

Answer: Persian (or Farsi)

(Tossup 16) **U.S. chess champion Bobby Fisher sought asylum in Japan and Iceland after breaking a travel order to play a match in this country. This country's National Liberation**

Army was led by a man who threatened to "send one" killer to Moscow in response to Soviet sponsored assassination attempts. (*) The breakup of this country led to the independence of Serbia and Croatia. For ten points, name this Slavic Balkan country led in World War II by Josip Broz Tito.

Answer: Yugoslavia

(Bonus 16) This war was ended by the Treaty of Utrecht in 1713. FTPE,

Part 1: Name this war that was triggered by Charles II's death, leaving the namesake Iberian country's throne to Philip of Anjou.

Answer: War of the Spanish Succession

Part 2: This "Sun King " led France during the War of the Spanish Succession. He is also known for the construction of the palace of Versailles.

Answer: Louis XIV [the fourteenth] (prompt on "Louis")

Part 3: This country gained Gibraltar as a result of the Treaty of Utrecht. This country's first prime minister, Sir Robert Walpole, dealt with the bursting of the South Sea Bubble.

Answer: Great Britain (accept England)

Tiebreaker

(Tossup 17) **One holder of this title stated "If it is so, it will be my retirement." after learning that he was deposed by a bloodless coup. The first holder of this non-European title faced a rebellion by the Confederation of the Equator. (*)** A daughter of one holder of this title signed the Lei Áurea, ending slavery in a certain country. For ten points, name this title held by Pedro I and Pedro II, the rulers of the largest South American country.

Answer: Emperor of Brazil (accept monarch, ruler, king, etc in place of "Emperor")

(Bonus 17) This man acts as a vanguard, always on alert for the onset of Ragnarok. For ten points each:

Part 1: What Norse god's mothers are sometimes said to be ocean waves? He is the guardian of the rainbow bridge into Asgard.

Answer: Heimdallr

Part 2: The rainbow bridge in Norse myth is given this name.

Answer: Bifrost

Part 3: Heimdall will signal the beginning of Ragnarok by sounding a note on this horn.

ANSWER: Gjallarhorn