Tournament 32
Round 14
Tossups

1. Battle Abbey was founded to commemorate this engagement. The victorious side at this battle feigned a retreat to trick its enemy's housecarls into breaking their shield wall formation atop Senlac Hill. The losing side at this battle was weakened because it had fought the King of Norway three weeks earlier at $\mathbf{( *}^{*}$ ) Stamford Bridge. This battle appears in the Bayeux Tapestry, which depicts the death of Harold Godwinson in it. For 10 points, name this decisive 1066 battle in William of Normandy's conquest of England.
ANSWER: Battle of Hastings [or Battle of Senlac Hill before it is read]
080-12-69-14101
2. This team won one game over the Dallas Cowboys when Dwight Clark made a leaping grab of a pass for a touchdown in the final minute. That play for this team, known as "The Catch," paved the way for their first Super Bowl victory of four in the (*) 1980s. For 10 points, name this NFL team led to five Super Bowl victories between 1980 and 1995 with quarterbacks Joe Montana and Steve Young, and which is based out of California's Bay Area.
ANSWER: San Francisco 49ers [or San Francisco 49ers; or Niners]
3. A quantum field theory of this phenomenon is impossible because it is not renormalizable. This phenomenon is a result of the warping of spacetime according to general relativity. A constant equal to 6.67 times 10 to the negative 11 is multiplied by two masses and divided by the distance between them squared in $\left(^{*}\right.$ ) Newton's universal law of it. Another constant named for this weakest of the four fundamental forces is 9.8 meters per seconds squared. For 10 points, name this downward force that determines the weight of objects.
ANSWER: gravity [or word forms thereof; accept gravitational waves in the first sentence]
4. The bass segment of Richard Strauss's piece Metamorphosen quotes the C-minor second movement of this symphony. The second movement of this piece is a funeral march and its fourth movement reprised themes from the composer's ballet music for The $\left(^{*}\right.$ ) Creatures of Prometheus. Originally dedicated to Napoleon, this symphony's title was changed to reflect "the memory of a great man" after he offended the composer by crowning himself Emperor. For 10 points, name this "heroic" symphony by Beethoven.
ANSWER: Eroica Symphony [or Beethoven's Symphony No. 3 in E-flat Major, Op. 55; only 3rd is needed after mention of Beethoven, prompt on Symphony No. 3 before that]
5. In this novel, a poet finds himself in the seedy Cour des Miracles, where the King of Thunes nearly hangs him before a woman agrees to marry him. One chapter of this book expounds on how the printing press ended the supremacy of architecture. In this work, the stabbing of Captain (*) Phoebus is blamed on a gypsy with a pet goat. The protagonist of this novel hurls his former guardian, Claude Frollo, off a tower after witnessing the death of his love, La Esmeralda. For 10 points, name this Victor Hugo novel about the deformed bellringer Quasimodo.
ANSWER: The Hunchback of Notre Dame [or Notre Dame of Paris; or Notre Dame de Paris]
6. In one of these stories, an old donkey, dog, cat, and rooster leave their homes to become the Bremen Musicians. Another of them describes a tailor whose belt reads "seven at one blow," referring to the seven flies he once killed. In another of these tales, a dwarf screams "The devil told you that!" and smashes his right leg through the earth after a queen for whom he (*) spun gold guesses his name. For 10 points, name these folktales, including "Rumpelstiltskin" and "Hansel and Gretel," which were collected by a pair of German siblings.
ANSWER: Grimm's Fairy Tales [or the Tales of the Brothers Grimm; or equivalents]
7. One island in this body of water has a name literally meaning "the land of Moses," Abu Musa. The economy of one island country in this body of water was fueled almost entirely by the pearling industry. In this body of water the Clarence Strait separates Qeshm Island from the mainland. The (*) Shatt-al-Arab feeds this body of water, which is connected to the Gulf of Oman by the Strait of Hormuz. For 10 points, name this Middle Eastern body of water that borders Bahrain, Qatar, and Kuwait and forms the northern boundary of the Arabian Peninsula.
ANSWER: Persian Gulf [prompt on "Arabian Gulf"]
196-12-69-14107
8. The journalist Henrietta Stackpole joins the main character of this work at the country estate of Gardencourt. One character in this work wishes his daughter Pansy to marry a man his wife rejected, Lord Warburton. In Italy, the protagonist of this novel marries the expatriate (*) Gilbert Osmond at the connivance of Madame Merle, after her invalid cousin Ralph Touchett gives her his inheritance. For 10 points, name this Henry James novel about Isabel Archer.
ANSWER: The Portrait of a Lady
9. This organization was criticized in three reviews by a board headed by Clarence Darrow. Its head promoted a "blanket code" setting a minimum wage and abolishing child labor for all businesses. This organization under Hugh Johnson was abolished by the Supreme Court in a lawsuit by Schechter Poultry Corporation called the "sick chicken" case. This organization used the slogan (*) "We do our part" and adopted the Blue Eagle as its symbol. For 10 points, name this New Deal agency set up to promote fair practice in business.
ANSWER: NRA [or National Recovery Administration]
080-12-69-14109
10. The binding site of this molecule on the bcr-abl protein is blocked by imatinib, and it is synthesized by a protein containing an F0 base piece and an F1 rotor. This compound is transformed into a signaling molecule by adenylate cyclase, and $(*)$ kinases break ions off this molecule to attach to proteins. Two molecules of it are produced during glycolysis, though around 34 are created by oxidative phosphorylation of glucose. For 10 points, name this compound, the energy currency of the cell.
ANSWER: ATP [or adenosine triphosphate]
048-12-69-14110
11. Near the beginning of the Great Depression, this country's Credit Anstalt bank failed. In 1955, this European country declared a permanent neutrality. This country's chancellor Engelbert Dollfuss was assassinated, and his successor Kurt von Schuschnigg resigned after this country was (*) annexed by Nazi Germany in the Anschluss. For 10 points, name this country that was the imperial half of the Dual Monarchy with Hungary.
ANSWER: Republic of Austria [or Republik Oesterreich]
12. This property must be possessed by the "a over $b$ " parameter of a Lissajous curve for it to be closed. A theorem with this word in its name lists possible zeros of a polynomial using the factors of the leading coefficient and constant term; that is the this term's root theorem. Functions of this type are written as (*) quotients of polynomials, while the set of numbers of this type is denoted Q. For 10 points, give this term that describes numbers that can be written as a simple fraction.
ANSWER: rational
132-12-69-14112
13. Two players of this instrument, Kenny Clarke and Max Roach, were prominent bebop artists. Another player of this instrument, who recorded A Night in Birdland with the Jazz Messengers, was Art Blakey. Elvin Jones played this instrument on A Love Supreme. Gene Krupa was another player of this instrument, which often includes a $(*)$ hi-hat. For 10 points, name this percussion instrument that includes tom-toms, a snare, and cymbals.
ANSWER: drums [or drum set]
079-12-69-14113
14. This character abducts a ten-year-old girl named for the lavender plant to raise her to be his wife, but that lover is demonically possessed by his former mistress, the "Sixth Street Lady." His death is signified by a completely blank chapter entitled 'Vanished into the Clouds." Secretly the father of $\left({ }^{*}\right)$ Emperor Reizei, this man has affairs with Lady Rokujo and Yugao despite being in a loveless marriage to Aoi. For 10 points, name this philandering prince, the title character of a Heian-era novel by Lady Murasaki.
ANSWER: Hikaru Genji
15. Feast days in this religion include Ezili Danto and Danbala, and secret societies in this religion called Sanpwel serve a quasi-judicial function. Practitioners of this religion believe in a cosmic land called Ginen and hold that Iwa, Myste, and Anvizibs inhabit an unseen world. In this religion, humans are connected to protective spirits called (*) loas through an intermediary named Papa Legba. The top hat-wearing Baron Samedi is another spirit in this religion. For 10 points, name this religion in Haiti that is associated with zombies.
ANSWER: Voodoo [or Vodun; or Vaudou]
16. In Hebrew, this action is performed via patterns known as binyanim, which are illustrated in the shape of a menorah as a learning tool. In French, the words 'avoir" and "etre" follow a different set of rules regarding this action. This action, when performed, does not result in the formation of a new lexeme, unlike the related process of ${ }^{(*)}$ declension. This action yields "yo soy, tu eres, usted/el/ella (AY-ah) es, nostoros somos," and "ustedes/ellos (AY-ohs)/ella (AY-ahs) son" when performed on "ser," a Spanish infinitive meaning "to be." For 10 points, name this process of listing the different forms of a verb. ANSWER: verb conjugation [or word forms]
17. One of these objects, commissioned in 1308 in Siena, was the first major artwork to break from the standards of Byzantine art. Duccio's Maesta was one of these objects, whose frame is called the predella. The Just Judges was stolen from another of these objects, in which an animal gushes blood into a chalice in the lower-center. The (*) Adoration of the Mystic Lamb occupies the central panel of the most famous one. For 10 points, name these objects, such as the Ghent one by Jan van Eyck, which decorate a church structure.
ANSWER: altarpieces [or polyptyches, since the two works in the tossup are that; prompt on pictures; prompt on reliefs; prompt on paintings; prompt on panel works]

030-12-69-14117
18. Hydrogen gas is produced industrially via the reaction of this compound with carbon monoxide in its namesake 'gas shift reaction." A line in the phase diagram for this compound uniquely slopes to the left, because this compound's solid form is less dense than its (*) liquid form. The most famous compound to adopt a bent geometry, it weighs 18 grams $/ \mathrm{mol}$ and can be deprotonated to form the hydroxyl anion. NaCl can be perfectly ionized in, for 10 points, what "universal solvent" with formula H 2 O ?

19. One character in this play is told that he is his own shadow after asking, "Who is it that can tell me who I am?" Another character in this play declares, "Thou, nature, art my goddess," in a speech denouncing his status as a bastard and plotting to usurp the place of his brother (*) Edgar. In this play's final scene, the title character cries, "And my poor fool is hanged!" before collapsing over the body of his one faithful daughter, Cordelia. For 10 points, name this Shakespearean tragedy about a legendary British king.
ANSWER: King Lear
20. Under Rashid al-Gaylani, this country received assistance from Nazi Germany in trying to gain independence from Britain. This country's retreating army was bombarded along the Highway of Death. This country's air force bombed the town of Halabja with poison gas during the eight-year war it fought with an eastern neighbor. During its (*) Ba'athist regime, this country's annexation of Kuwait was undone by Operation Desert Storm. For 10 points, name this Middle Eastern country once led by Saddam Hussein.
ANSWER: Republic of Iraq [or Jumhuriyat al-Iraq]
080-12-69-14120
21. These events were used by Perlmutter to demonstrate that the Universe's expansion is accelerating. These events, which are theorized to create and spread elements heavier than iron, can be classified by the presence or absence of Balmer spectral lines. The first Messier object is a remnant from a (*) 1054 example; that object is the Crab Nebula. Tycho and Kepler each observed one in the Milky Way. For 10 points, name this powerful stellar explosions that can leave behind black holes, and that are the dying act of heavy stars.
ANSWER: supernova
22. The end of this poem features memorializes the poet himself as a "youth to fortune and to fame unknown." The speaker imagines "some Cromwell guiltless of his country's blood" or "some mute inglorious (*) Milton" in the title location. Describing a place "far from the madding crowd's ignoble strife," this poem states "the paths of glory lead but to the grave." For 10 points, name this poem beginning, "The curfew tolls the knell of parting day," a work of Thomas Gray.
ANSWER: "Elegy Written in a Country Churchyard"
23. Aldus Manutius established one of these objects in Venice, and William Caxton brought this invention to England. James Franklin brought one of them from England to the colonies and employed his brother, Ben Franklin, on it. This invention reduced the popularity of the calfskin-derived material, vellum. It was revolutionized by the invention of (*) movable type by Johannes Gutenberg. For 10 points, name this device that allowed for the mass production of books. ANSWER: printing presses

1. The time-independent form of this equation for one particle can explain quantum tunneling. For 10 points each:
[10] Name this equation, whose simplest formulation is itimes $h$ bar times $d$ wave function $d t$ is equal to the Hamiltonian times the wave function.
ANSWER: Schrodinger equation
[10] Schrodinger may be more famous for his thought experiment involving this animal in a box, simultaneously alive and dead.
ANSWER: cat
[10] Schrodinger took the wave side in the wave-particle duality problem, much like this Frenchman, whose equation demonstrated that wavelength was inversely proportional to momentum.
ANSWER: Louis-Victor-Pierre-Raymond, 7th duc de Broglie
020-12-69-14201
2. For 10 points each, name these 20th-century European playwrights.
[10] This Italian included characters like the Father and the Boy in his Six Characters in Search of an Author.
ANSWER: Luigi Pirandello
[10] This absurdist playwright wrote about all of the residents of a town except Berenger turning into the title creature in Rhinoceros.
ANSWER: Eugene Ionesco
[10] This French author wrote a play in which Solange and Claire pretend to be their mistress, The Maids, and a work in which the title characters wear masks for much of the play, The Blacks.
ANSWER: Jean Genet
192-12-69-14202
3. Answer the following about aviation disasters, for 10 points each.
[10] Flight 007 operated by this airline company was shot down over the Sea of Japan by a Soviet interceptor, killing all 269 on board.
ANSWER: Korean Air Lines
[10] Abdelbaset al-Megrahi, a native of this country, was released back here from life imprisonment for the bombing of Pan Am Flight 103 in Lockerbie.
ANSWER: Libya
[10] The passengers on this flight were able to regain some control from hijackers, causing it to crash-land in Pennsylvania and not some more important target on 9/11.
ANSWER: United Airlines Flight $\underline{93}$
4. This object belonged to the being sent by Nephele to rescue her children. For 10 points each:
[10] Name this object left in the care of Aeetes, which was sought by a group including Calais and Zetes.
ANSWER: Golden Fleece
[10] This man was sent after the Golden Fleece by his uncle Pelias and obtained it with the help of Medea. ANSWER: Jason
[10] This son of Athamas and Nephele was saved by the flying golden ram, though his sister Helle drowned.
ANSWER: Phrixus
105-12-69-14204
5. Born Free and Equal contains this man's photos of the Manzanar internment camp. For 10 points each:
[10] Name this photographer of the American West. His works include Moonrise, Hernandez, New Mexico. ANSWER: Ansel Easton Adams
[10] Adams is renowned for his work in this national park, whose features he captured in Moon and Half-Dome and El Capitan.
ANSWER: Yosemite National Park
[10] Adams was a founder of this San Francisco-based photography group, whose name is derived from the very small aperture setting that allowed them to capture sharp images of large-scale natural scenes.
ANSWER: Group $\mathbf{f / 6 4}$
195-12-69-14205
6. This policy weakened the Communist Party's censorship of the media, thus allowing the public to learn about the Chernobyl disaster. For 10 points each:
[10] Name this policy of "openness" promoted in the late Soviet Union.
ANSWER: glasnost
[10] Glasnost and perestroika were implemented by this final leader of the USSR.
ANSWER: Mikhail Sergeyevich Gorbachev
[10] Glasnost also permitted discussion of the desiccation of this body of water, which occurred due to
Soviet attempts to make "water serve the interests of socialism."
ANSWER: Aral Sea [or Orol]
080-12-69-14206
7. This country is historically divided into the provinces of Leinster, Ulster, Munster, and Connacht. For 10 points each:
[10] Name this island nation whose cities include Cork and Limerick.
ANSWER: Ireland
[10] This longest river on Ireland divides most of Connacht from the east of Ireland.
ANSWER: River Shannon
[10] This other Irish river runs through Dublin and has tributaries called the River Camac, River Dodder, and River Poddle.
ANSWER: Liffey
8. This period ended after Boabdil surrendered Granada to Ferdinand and Isabela. For 10 points each:
[10] Name this period of Spanish history whose high points included the Battle of Las Navas de Tolosa. In this period, Christians gradually took the Iberian peninsula back from its Muslim occupiers.
ANSWER: Reconquista [or Reconquest]
[10] This city was the capital of the Ummayads in Al-Andalus. Its mosque, the Mezquita, was later turned into a cathedral.
ANSWER: Cordoba [or Cordova]
[10] The Muslims took control of Spain from this Christian people. They were the western counterparts of the Ostrogoths.
ANSWER: Visigoths
080-12-69-14208
9. Lesions caused by this virus on the fingers are called whitlows, and it shares a family with the cytomegalovirus. For 10 points each:
[10] Name this virus, a sexually transmitted disease which is also responsible for cold sores. Treatment of this incurable virus uses nucleoside analogues like acyclovir and valacyclovir.
ANSWER: herpes simplex virus [or HSV]
[10] The herpes virus can also infect this organ when it lies latent in the trigeminal ganglion, where it can cause a condition called keratitis.
ANSWER: eye [accept cornea]
[10] Human herpesvirus 8 causes this condition, a form of red eruptions on the skin and gums. This condition is often seen in AIDS patients.
ANSWER: Kaposi's sarcoma
10. One poem in this collection asks the listener to "Call me by my pet name." For 10 points each: [10] Name this collection of forty-four poems, the most famous of which asks, "How do I love thee? Let me count the ways."
ANSWER: Sonnets from the Portuguese
[10] Sonnets from the Portuguese is a collection by this female poet who wrote Aurora Leigh. ANSWER: Elizabeth Barrett Browning [or Elizabeth Barrett Browning]
[10] At the end of "How do I love thee? Let me count the ways," the speaker remarks that if this figure choose, "I shall but love thee better after death." Zora Neale Hurston wrote a novel entitled "Their Eyes Were Watching" this figure.
ANSWER: God
11. One of the first examples of this device was a torsion variety, desinged by Harry Wood and J.A.

Anderson, which used a copper mass which reflected light onto photosensitive paper. For 10 points each: [10] Identify this kind of machine, which measures the strength of earthquakes.
ANSWER: seismometer [or seismograph]
[10] The idea of taking precise measurements with a torsion balance was earlier used by this British scientist, who used one to measure the mass of the Earth, and thus the gravitional constant, in 1798.
ANSWER: Henry Cavendish
[10] Quantitative instruments such as the seismograph are not used when evaluating earthquakes on this twelve-point scale, which relies on appraisal of damaging effects.
ANSWER: modified Mercalli intensity scale
12. This character's mother is Fantine, but she is raised by the Thénardiers in Montfermeil. For 10 points each:
[10] Name this young girl who is taken under the wing of Jean Valjean and eventually falls in love with Marius Pontmercy.
ANSWER: Cosette [or Euphrasie Fauchelevant Pontmercy; prompt on Ursule; prompt on Lark] [10] Cosette and Marius Pontmercy appear in this French novel about the former criminal Jean Valjean and his struggles with redemption as well as the relentless Inspector Javert.
ANSWER: Les Misérables [or The Miserable Ones]
[10] Les Misérables is a novel by this Romantic French novelist of Toilers of the Sea.
ANSWER: Victor Marie Hugo
196-12-69-14212
13. While living in a wooden hut next to a Norwegian fjord, this man developed the picture theory of meaning. For 10 points each:
[10] Name this Austrian philosopher who wrote "What we cannot speak about we must pass over in silence" in his Tractatus Logico-Philosophicus.
ANSWER: Ludwig Wittgenstein
[10] Ludwig Wittgenstein was a student of this philosopher, who was the president of the Campaign for Nuclear Disarmament and who wrote Principia Mathematica with Alfred North Whitehead.
ANSWER: Bertrand Russell
[10] Frank Ramsey and Moritz Schlick encouraged Wittgenstein to return to practicing philosophy.
Ramsey and Schlick were members of this philosophical group that espoused logical positivism and was named for a European capital.
ANSWER: Vienna Circle [or Wiener Kreis]
030-12-69-14213
14. A small boat can be seen in the bushes on the right side of the painting. For 10 points each:
[10] Name this painting that shows a spotted dog watching two men cross a river in the tutlar wooden horse-drawn cart.
ANSWER: The Hay Wain
[10] This English landscape artist was known for his depictions of Dedham Vale and Salisbury Cathedral as well as The Hay Wain.
ANSWER: John Constable
[10] This Constable landscape features a double rainbow and stormy clouds in the background as people walk among the titular ruins.
ANSWER: Stonehenge
196-12-69-14214
15. Answer these questions about interwar Germany, for 10 points each.
[10] Friedrich Ebert and Paul von Hindenburg served as president of this democratic government of Germany. It lasted from 1919 to 1933.
ANSWER: Weimar Republic
[10] Germany struggled to pay the harsh reparations imposed by this treaty, signed at the end of World War I.

ANSWER: Treaty of Versailles
[10] The Nazis used this 1933 event as part of their bid to take over the government. Blamed on the communist Marinus van der Lubbe, this action allowed the passage of the Enabling Act.
ANSWER: burning of the Reichstag [or Reichstag fire]
16. This problem was first formulated by Albert Tucker. For 10 points each:
[10] Name this problem in which two individuals who committed a robbery together are isolated and unaware of whether their partner will confess.
ANSWER: prisoner's dilemma
[10] This author of the thesis "Non-cooperative Games" developed his namesake equilibrium in which the optimal solution for a game is one in which no player has an incentive to change his strategy after considering his opponent's strategy.
ANSWER: John Nash
[10] In game theory, this type of game occurs when one participant's gains can only result in another participant's loss.
ANSWER: zero-sum game
17. This poet described a man "down on Lenox avenue" in "The Weary Blues." For 10 points each: [10] Name this man who wrote "Theme for English B" and "The Negro Speaks of Rivers."
ANSWER: Langston Hughes [or James Mercer Langston Hughes]
[10] Hughes asked "What happens to a dream deferred?" in a poem named after this New York neighborhood which was also the namesake of a "Renaissance" of which Hughes was a major figure.
ANSWER: Harlem
[10] Lorraine Hansberry used a quote from "Harlem" to title her play A Raisin in the Sun, which centers on this African American family's difficulties in moving to an all-white neighborhood.
ANSWER: the Youngers
18. This woman befriended Gilbert Gifford, a double agent who convinced her to send out her coded messages in beer barrels. For 10 points each:
[10] Name this woman who was executed after those messages were used to prove her complicity in the Babington Plot to overthrow her cousin, Elizabeth I.
ANSWER: Mary, Queen of Scots [or Mary Stuart; or Mary I of Scotland; prompt on Mary; do not accept "Mary Tudor," "Mary I of England," or "Bloody Mary"]
[10] This Elizabethan spymaster encouraged Mary's scheming through his employee, Gifford, in a successful attempt to secure her execution.
ANSWER: Francis Walsingham
[10] This son of Mary Stuart and target of the Gunpowder Plot came to the English throne after the death of Elizabeth.
ANSWER: James I of England [or James VI of Scotland; prompt on James]
080-12-69-14218
19. Consider a diatomic molecule of an unknown element. For 10 points each:
[10] Most diatomic molecules are in either the second period or this group of elements with seven valence electrons. Examples include fluorine and bromine.
ANSWER: halogens
[10] If you break the bond in the unknown molecule, you may end up with two of these species with unpaired electrons.
ANSWER: free radicals
[10] This theory explains the electronic structure of compounds like elemental oxygen and carbon monoxide. It uses namesake constructs that extend over multiple atoms.
ANSWER: molecular orbital theory
20. This set of legislation included the Quartering Act, which required colonists to provide housing for British soldiers. For 10 points each:
[10] Name this set of acts passed by Parliament in 1774 to punish American colonists.
ANSWER: Intolerable Acts [or Coercive Acts]
[10] The Intolerable Acts were a response to this disruptive incident, in which the Sons of Liberty destroyed a taxed commodity by throwing it into the harbor of a Massachusetts town.
ANSWER: Boston Tea Party
[10] Though not passed specifically to punish American colonists, this act was grouped in with the Intolerable Acts. It angered American colonists by giving recognition to the Catholic Church in its namesake territory.
ANSWER: Quebec Act
080-12-69-14220
21. For 10 points each, answer the following about Caribbean literature.
[10] This country's authors include the revolutionary hero Jose Marti and the man who wrote The Kingdom of this World, Alejo Carpentier.
ANSWER: Cuba [or Republic of Cuba; or Republica de Cuba]
[10] This author was the subject of controversy in 2011 for stating that women made inferior writers. This native of Trinidad and Tobago wrote about a man with six fingers in A House for Mr. Biswas.
ANSWER: V. S. Naipaul [or Vidiadhar Surajprasad Naipaul]
[10] This Nobel Laureate from St. Lucia is best known for his modern retelling of the Odyssey entitled Omeros.
ANSWER: Derek Walcott [or Derek Alton Walcott]

