1. In one of this man's movies, the camera moves in as the angle of view expands while looking down a stairwell, illustrating the protagonist's dizziness as he chases a woman up a bell tower. That protagonist was played by Jimmy Stewart, who also starred as an invalid photographer who suspects a neighbor of (*) murder. In another of his movies, a man at a bus stop points out there are no crops to be dusted right before the crop duster starts shooting at Cary Grant. For 10 points, name this director of Vertigo and North by Northwest.
ANSWER: Alfred Hitchcock
2. Rudi Dornbusch modeled the short-term volatility of these quantities in his "overshooting model." The Big Mac Index purports to determine which ones are over- and undervalued. Until 1971, these quantities were determined by the Bretton Woods system, which established a (*) "pegged" regime for them, as opposed to one in which they "float." These quantities often do not correspond to those predicted by purchasing power parity. For 10 points, name these quantities that measure how much one country's currency is worth in terms of another's.
ANSWER: the foreign currency exchange rate [or value of a currency; or more specific equivalents, like the dollar exchange rate; or the value of the dollar]

080-12-69-13102
3. The Legendre symbol has value one whenever an argument is this kind of residue, and the law of this type of reciprocity was proved by Gauss. This kind of polynomial is the simplest to have a vertex, and equations of this type can be solved by completing the $\left(^{*}\right)$ square. Equations described by this adjective can be solved by applying the formula negative $b$ plus or minus square root $b$ squared minus $4 \mathrm{a} c$ all over 2 a and include parabolas. For 10 points, name this term describing equations in the form a x squared plus $\mathrm{b} x$ plus c .
ANSWER: quadratic [accept degree two after "polynomial"]
4. This poet's major work contains a description of the goddess of wisdom's visit to Envy, who eats vipers to sustain her venom. He wrote a series of letters from mythological women to the heroes who abandoned them, the Heroides. His exile to Tomis may have had to do with his writing a scandalous guidebook for lovers called the (*) Ars Amatoria. In an epic poem, he wove together a series of stories from classical myth that each end with a transformation. For 10 points, name this Roman poet of the Metamorphoses.
ANSWER: Ovid [or Publius Ovidius Naso]
5. This philosopher argued for using the same methods in human sciences and natural sciences in the last book of his A System of Logic. This man was influenced by his wife Harriet Taylor when he wrote in support of women's suffrage in (*) The Subjection of Women. He advocated for freedom to do anything that doesn't hurt another, the "harm principle," in his essay On Liberty. For 10 points, name this British philosopher who followed Jeremy Bentham in supporting utilitarianism.
ANSWER: John Stuart Mill
6. This man's country was targeted by the "soft underbelly" invasion strategy. His share in parliament was increased to two-thirds by the Acerbo law, and he controlled the OVRA police force. This leader's men set fire to the quarters of a socialist newspaper he once edited. He and the Catholic Church signed the (*) Lateran Accords seven years after a 1922 march to his country's capital by his Blackshirts. For 10 points, name this ally of Hitler who was called "Il Duce" while leading Fascist Italy. ANSWER: Benito Amilcare Andrea Mussolini

104-12-69-13106
7. This author described the training of a dog named Lion by the McCaslin family in one work, and in another, Joanna Burden is killed by the mulatto Joe Christmas. This author of Go Down, (*) Moses wrote a novel whose first section is narrated by a mentally handicapped man cared for by Caddy. He also described Darl's journey with his family to bury his mother Addie Bundren. For 10 points, name this Southern author of Light in August, The Sound and the Fury, and As I Lay Dying.
ANSWER: William Faulkner [or William Cuthbert Faulkner]
8. One dictator of this country established a paramilitary force called the Dignity Battalions and may have been involved in the death of his predecessor, Omar Torrijos. This country signed the Hay-Bunau-Varilla Treaty with the United States. George H.W. Bush invaded this country in Operation Just Cause, which overthrew its dictator, (*) Manuel Noriega. With American support, it separated itself from Colombia in 1903. For 10 points, name this Central American country that owns an important canal.
ANSWER: Republic of Panama [or Republica de Panama]
9. Dali's "Corpus Hypercubus" shows this scene. This subject is depicted in a triptych with an orange background and grotesque gray bodies representing the Furies. Francis Bacon painted 'three studies for figures at the base of" this scene, whose immediate aftermath is depicted in "depositions." A particularly gruesome version of this scene occupies the center of (*) Grunewald's Isenheim Altarpiece. A lance wound on the side and nails puncturing hands are common fixtures of, for 10 points, what popular scene in art that shows Christ's death?
ANSWER: crucifixion of Jesus Christ [prompt on the execution of Jesus and other synonyms]
079-12-69-13109
10. Enzymes that reduce this compound are inhibited by trimethoprim and methotrexate, and it is often conjugated to polyglutamate in dietary sources. This compound is used as a cofactor in enzymes responsible for one-carbon transfers, and like vitamin B12 its deficiency causes (*) megaloblastic anemia. It is given to pregnant mothers to prevent spina bifida in the fetus. For 10 points, identify this important metabolite found in leafy green vegetables like spinach.
ANSWER: folate [accept dihydrofolate, tetrahydrofolate, THF, or vitamin B9]
11. The last of this composer's three mature concerti with opus numbers is his violin concerto in $\mathbf{E}$ minor. A French horn trio is part of the minuet he wrote into the third movement con moto moderato of his fourth symphony, which includes themes based on the tarantella and saltarello. A trip to the (*) Hebrides inspired his Fingal's Cave. This composer of the Italian Symphony included a "Wedding March" in a Shakespeare-inspired work. For 10 points, name this composer of incidental music for A Midsummer Night's Dream.
ANSWER: Felix Mendelssohn-Bartholdy
12. This singer is ready to give up "the keys to the castle" to Scarlett Johansson in one music video that opens with two baglamas harmonizing. This collaborator with Timbaland states that he "can see us holding hands/walking on the beach" in another song. This singer of (*) "Cry Me A River" and "My Love" declared "I'm bringin' sexy back." This singer starred alongside Mila Kunis in Friends with Benefits. For 10 points, name this former member of ' N Sync who along with Andy Samberg sung "Mother Lover."

ANSWER: Justin Timberlake
13. One island in this country contains the city of Dunedin and the Southern Alps. Its national anthems are "God Defend [this country]" and "God Save the Queen." The Foveaux Strait separates Stewart Island from one section of this country known as (*) South Island. Flightless birds that are endemic to this nation include the extinct Moa and the still-present Kiwi birds. This country is separated from its northwestern neighbor by the Tasman Strait. The Maori are the indigenous people of, for 10 points, what country whose capital is Wellington?
ANSWER: New Zealand
14. Finite state automata accept languages, which are a set of these constructs. Regular expressions work on these constructs. In Java, these constructs can be concatenated with a plus symbol. They are terminated with a null character in $C$. Their printf format is a percent sign followed by a ${ }^{(*)} \mathrm{s}$. They are most often surrounded by double quotes when declared. For 10 points, identify this data type that consists of a sequence of characters.
ANSWER: string
15. In this novel, a dispute between a wife's brothers and husband is settled by the egwugwu, one of whom is played by the protagonist. In this novel, Mr. Brown is allowed to build a church in the 'Evil (*) Forest," although that church is burned down after Reverend Smith takes over. The protagonist of this novel violates the "Week of Peace," and helps kill his foster son Ikemefuna. He hangs himself after failing to incite rebellion against the British. For 10 points, name this novel about Okonkwo written by Chinua Achebe.

ANSWER: Things Fall Apart
16. The smith Wayland and his brothers captured three of these beings and held them for nine years. These beings, who could turn into swans, wore shining armor that was responsible for the Northern Lights. A magic potion made a hero forget about one of these beings after that hero rescued her from a ring of fire where she was in a magic sleep. (*) Brynhildr (brin-HILD) was one of these beings, who selected the Einherjar (ayn-HERR-yar), fallen heroes whom they bore off to Valhalla. For 10 points, name these warrior women from Norse myth.
ANSWER: the Valkyries
17. This council defined the sacraments and set their number at seven, and it required bishops to reside in their parishes. This council was temporarily moved to Bologna by the pope who convoked it, Paul III. This last church council for 300 years until the (*) First Vatican reaffirmed the importance of sacred tradition against the principle of sola scriptura and upheld the Church's right to give out indulgences. For 10 points, name this sixteenth-century ecumenical council that started the Counter-Reformation.
ANSWER: Council of Trent
18. This element is doubly bonded to oxygen and singly bonded to two methyl groups in the least toxic of the polar aprotic solvents. Recovered from the Claus process, this element is bonded to hydrogen in the mercaptan functional group. The best-known compound to contain this element, whose elemental form includes $(*)$ eight atoms, is produced via the contact process and is the only diprotic member of the six strongest acids. For 10 points, name this element with a foul odor of rotting eggs.
ANSWER: sulfur [or $\underline{\mathbf{S}}$ ]
19. This poet asked God to "break, blow, burn and make me new" in one poem. This poet stated that 'thy firmness makes my circle just, and makes me end where I begun' in a poem which uses a metaphor comparing his and his lover's souls to twin compasses. This author of "A (*) Valediction: Forbidding Mourning" called a certain figure "slave to fate, chance, kings, and desperate men" in another sonnet. For 10 points, identify this English metaphysical poet who wrote "Death, be not proud" in one of his Holy Sonnets.
ANSWER: John Donne
126-12-69-13119
20. A speech this man gave at Fisk University sparked student protests that unseated university president Fayette Mackenzie. This longtime editor of The Crisis advocated the development of an "aristocracy of talent" called the "talented tenth." By founding the Niagara Movement and writing ${ }^{(*)}$ The Souls of Black Folk, this man promoted the use of education and agitation, rather than compromise, to effect social change. For 10 points, name this civil rights leader and rival of Booker T. Washington. ANSWER: W. E. B. Du Bois [or William Edward Burghardt Du Bois]
21. The Oren-Nayar model for this phenomenon is more accurate than Lambert's law. This phenomenon can either be diffuse or specular, depending on the texture of the surface. Another form of this phenomenon only occurs above the critical angle and is known as the (*) "total internal" kind, which is used in fiber optics. The "retro" version of this always sends light back to its source. For 10 points, name this phenomenon where a beam of light bounces off a surface, which is best exemplified by a mirror. ANSWER: reflection [accept word forms]
22. This empire's Ecloga law code recommended punishments like nose-slitting, and one of its emperors was nicknamed 'Slit-Nosed.' This empire controlled the Exarchate of Ravenna in Italy and owned most of Asia Minor until its defeat by the Seljuk Turks at Manzikert. This empire ended after a (*) 1453 conquest by the Ottomans under Mehmet II. The Corpus Juris Civilis was compiled under one of its emperors, Justinian. For 10 points, name this Eastern successor to the Roman Empire that had its capital at Constantinople.
ANSWER: Byzantine Empire [or Byzantium; or Rum; or Eastern Roman Empire until "Eastern" is read; prompt on Roman Empire]

080-12-69-13122
23. One character in this novel bets on the horse Throwaway. Another character in this novel wears a Latin Quarter hat and is haunted by the ghost of his mother. Its protagonist lusts after Gerty McDowell. Another character lives in Martello Tower with Buck (*) Mulligan. Blazes Boylan has an affair with the protagonist's wife, Molly, who delivers a soliloquy at the end of this novel. Stephen Dedalus and Leopold Bloom are featured in, for 10 points, what James Joyce novel inspired by The Odyssey?
ANSWER: Ulysses

## hsapq

1. Name some mortals who ran afoul of the Greek gods, for 10 points each:
[10] This woman was changed into a spider by Athena for her hubris of not only daring to compete at weaving with the goddess but also depicting the affairs of the gods in her tapestry.
ANSWER: Arachne
[10] This king of Phrygia was given ass's ears for judging Pan's music to be better than Apollo's. ANSWER: Midas
[10] After accidentally seeing the goddess Artemis naked at her bath, this man was turned into a stag and devoured by his own hounds.
ANSWER: Actaeon (ACK-tee-on)
105-12-69-13201
2. This piece was orchestrated by Ferde Grofe at its premiere. For 10 points each:
[10] Name this "Experiment in Modern Music" by the composer of An American in Paris that fuses elements of jazz and classical and was inspired by a train ride from Boston to New York.
ANSWER: Rhapsody in Blue
[10] Rhapsody in Blue is a composition by this American man, who also wrote the opera Porgy and Bess. ANSWER: George Gershwin
[10] Rhapsody in Blue opens with a glissando being played by this woodwind instrument.
ANSWER: clarinet
192-12-69-13202
3. Large examples of these divisions include Amazonas and Mato Grosso; a proposal to split Para into two of them was rejected in a 2011 plebiscite. For 10 points each:
[10] Identify these twenty-six political units, which also include Minas Gerais and Bahia.
ANSWER: states of Brazil [or estados de Brasil; or Brazilian states or other obvious equivalents]
[10] This Brazilian state contains, and shares its name with, the most populous city in the Southern Hemisphere.
ANSWER: Sao Paulo
[10] This state is named for its presence on the river that joins the Urugay to form the Rio de la Plata and powers the enormous Itaipu Dam.
ANSWER: Parana
4. In the wake of this event, Edward III issued the Statute of Laborers in a failed attempt to cap rising wages. For 10 points each:
[10] Name this fourteenth century pandemic spread by rats that may have killed as many as one hundred million people.
ANSWER: Black Plague [or Black Death; or bubonic plague]
[10] In 1381, the social unrest in the wake of the Black Plague erupted in a peasant revolt led by this man along with John Ball and Jack Straw.
ANSWER: Wat Tyler [or Walter Tyler]
[10] The plague may have spread to Europe when Yannibeg, a khan of this state, besieged the Geonese at Kaffa. Founded by Batu Khan, it controlled much of Russia and Eastern Europe until the fifteenth century. ANSWER: Golden Horde [or Kipchak Khanate; or Ulus Juchi]
5. One law student in this work is named Eugene de Rastignac. For 10 points each:
[10] Name this novel which ends at the title character's funeral, which is not attended by his two ungrateful daughters, whom he has spent his entire fortune on.
ANSWER: Old Goriot [or Father Goriot; or Pere Goriot]
[10] Old Goriot is a novel by this Frenchman, who also wrote Cousin Bette.
ANSWER: Honore de Balzac
[10] Both Old Goriot and Cousin Bette are part of this long series of novels by Balzac that depict 19th-century French life.
ANSWER: The Human Comedy [or La Comedie Humaine]
192-12-69-13205
6. This condition follows for triangles from the side-angle-side condition, but not the angle-side-side condition. For 10 points each:
[10] Give this term for a pair of figures that are identical in both size and shape.
ANSWER: congruent
[10] The angle-side-side condition does not guarantee congruence because it leads to this special case of the law of sines, wherein one unknown angle may be either acute or obtuse.
ANSWER: ambiguous case
[10] The "swinging" side in the ambiguous case must be longer than this line, which is perpendicular to a base of the triangle and passes through the vertex not on that base.
ANSWER: altitude
132-12-69-13206
7. In this novel, the main character befriends John Wemmick while working in the law firm of Herbert Pocket. For 10 points each:
[10] Name this novel, which sees Abel Magwitch reveal that he, and not Miss Havisham, is the anonymous benefactor of the protagonist.
ANSWER: Great Expectations
[10] This character is the protagonist of Great Expectations. He falls in love with Estella, even though she warns him Miss Havisham trained her to break hearts.
ANSWER: Pip [or Phillip Pirrip; or Phillip Pirrip]
[10] Great Expectations was written by this British novelist of David Copperfield.
ANSWER: Charles Dickens [or Charles John Huffam Dickens]
186-12-69-13207
8. This concept was introduced by Rudolf Clausius, who noted that its change was equal to the change in heat divided by the temperature. For 10 points each:
[10] Name this thermodynamic quantity related to the amount of disorder in a system.
ANSWER: entropy
[10] Entropy always increases in a spontaneous reaction according to this law.
ANSWER: second law of thermodynamics
[10] Clausius was studying this theoretical process, which consists of two isothermal steps and two reversible adiabatic steps.
ANSWER: Carnot cycle
9. Gerrit Smith belonged to this man's Secret Six, which gave this man financial support. For 10 points each:
[10] Name this abolitionist who led both the Pottawatomie Massacre in Kansas and the raid on Harpers Ferry.

## ANSWER: John Brown

[10] This man put down Brown's insurrection at Harpers Ferry, and had distinguished himself in the Mexican War by such acts as finding a flanking route during the Battle of Cerro Gordo.
ANSWER: Robert Edward Lee
[10] This man volunteered as an aide for Lee at Harpers Ferry, but was less helpful for Lee when his cavalry was away for too long before the Battle of Gettysburg.
ANSWER: Jeb Stuart [or James Ewell Brown Stuart]
023-12-69-13209
10. The protagonist of this play gives stockings to "The Woman," with whom he has an affair in one of its many flashback scenes. For 10 points each:
[10] Name this Arthur Miller play in which Willy Loman crashes his car to commit suicide after being fired from his job.
ANSWER: Death of a Salesman
[10] Willy Loman ignores Happy in favor of this older son in Death of a Salesman. This compulsive thief loses his football scholarship after catching his dad cheating.
ANSWER: Biff Loman
[10] Willy Loman imagines success stories from a brother with this name, who got rich in Africa. The title animal of Faulkner's short story "The Bear" is also given this name.
ANSWER: Ben [or Uncle Ben Loman; or Old Ben ]
104-12-69-13210
11. This tradition's major branches are the Theravada and Mahayana schools, and it holds that desire for physical pleasures causes suffering, or dukkha. For 10 points each:
[10] Name this Asian religion whose founder was Siddhartha Gautama. In this religion, the ultimate goal for a human being is enlightenment, or nirvana.
ANSWER: Buddhism
[10] This set of guidelines serves as a roadmap to the attainment of nirvana. The last of the Four Noble Truths asserts that it is the way to end suffering.
ANSWER: the Noble Eightfold Path [or the Eightfold Way]
[10] The attainment of nirvana ends this continuous cycle of jati, or reincarnation into suffering.
ANSWER: samsara
080-12-69-13211
12. This artist's most famous painting includes a rectangle-covered figure and a circle-covered figure set against a dull gold background. For 10 points each:
[10] Name this artist of Danae, the Beethoven Frieze, and two portraits of Adele Bloch-Bauer. He led the Vienna Secession.
ANSWER: Gustav Klimt
[10] Klimt's most famous painting depicts this action, also shown in an abstract sculpture by Constantin Brancusi and in Rodin's sculpture depicting Paolo Malatesta and Francesca da Rimini.
ANSWER: a kiss [accept all synonyms]
[10] The use of gold leaf in Klimt's painting The Kiss was inspired by Byzantine artworks of this kind, which are assembled from small pieces of glass and stone.
ANSWER: mosaics
13. This country experienced a massive blackout at the end of July 2012, affecting nearly $10 \%$ of the world's population. For 10 points each:
[10] Name this Asian nation whose political parties include the Hindu nationalist BJP.
ANSWER: Republic of India [or Bharat Ganarajya]
[10] This current Prime Minister of India is the first non-Hindu to hold the post. He came to power after Sonia Gandhi, leader of the Indian National Congress, declined the position.
ANSWER: Manmohan Singh
[10] This man succeeded Pratibha Patil as Indian President after a July 2012 election. He formerly held the post of Finance Minister.
ANSWER: Pranab Mukherjee
192-12-69-13213
14. Name the following about the choreographer Jerome Robbins, for 10 points each:
[10] Jerome Robbins won a Tony for choreographing this Leonard Bernstein musical in which Riff and Bernardo are killed in a knife fight in "The Rumble."
ANSWER: West Side Story
[10] Robbins choreographed this 1956 film based on a musical. It includes a scene in which Anna
Leonowens teaches the titular Yul Brenner-portrayed character to dance the polka in the number "Shall We Dance?"
ANSWER: The King and I
[10] Robbins also chroeographed this musical in which includes Tzeitel and Motel's union is celebrated in "The Wedding Dance." Other songs in this musical include "Tradition" and "If I Were a Rich Man. ANSWER: Fiddler on the Roof
15. The rejection of this bill sparked riots that destroyed the Bishop's Palace in Bristol. For 10 points each: [10] Name this bill passed by Earl Grey's ministry. It eliminated most of the "rotten boroughs" and extended the franchise to about one-seventh of all adult males in England.
ANSWER: Great Reform Bill [or Reform Bill of 1832; prompt on Reform Bill]
[10] Earl Grey was a member of this British political party, to which Thomas Babington Macaulay also belonged. It was the primary opposition to the Tories until the formation of the Liberal Party.
ANSWER: Whigs
[10] In 1829, another reforming act provided "relief" to practitioners of this religion, which was common in Ireland.
ANSWER: Catholicism [prompt on Christianity]
080-12-69-13215
16. Cornudet whistles "La Marseillaise" at the end of this short story. For 10 points each:
[10] Name this short story in which the title French prostitute sleeps with a Prussian officer so that her carriage-mates may continue upon their journey.
ANSWER: "Ball of Fat" [or "Boule de Suif"]
[10] The protagonists of this other story by the author of "Ball of Fat" lose the title piece of jewelry, leading them to spend ten years attempting to make up the cost of replacing it.
ANSWER: "The Necklace" [or "La Parure"]
[10] Both "Ball of Fat" and "The Necklace" were written by this French author of Bel Ami.
ANSWER: Guy de Maupassant
17. This number is denoted Z . For 10 points each:
[10] Name this number, which for an atom is given by the number of protons in the nucleus.
ANSWER: atomic number
[10] The atomic number is decreased by one, but the mass number is unchanged, in this process that is regarded as "inverse beta decay."
ANSWER: electron capture [or k-capture; or l-capture]
[10] The mass number is determined by the combined number of protons and of this neutral particle in the nucleus.
ANSWER: neutron
020-12-69-13217
18. Elena Poniatowska (uh-LAY-nuh pown-yuh-TUFF-skuh) wrote about the 1985 earthquake in this city in Nothing No One. For 10 points each:
[10] Name this capital city in which dozens of student protesters were killed in the Tlatelolco massacre by the army shortly before the Summer Olympics.
ANSWER: Mexico City [or Ciudad de México; or México Distrito Federal; or México D.F.; do not accept or prompt on "Mexico"]
[10] The Tlatelolco protests occurred in this year, the same year that Parisian students went on strike in May and riots occurred in the United States after the assassination of Martin Luther King in April.
ANSWER: 1968
[10] 1968 was also the year of a massacre in this Vietnamese village, though it was not public knowledge until Seymour Hersh's report one year later. William Calley was the only soldier convicted of murder here, where between 300 and 500 Vietnamese civilians were killed.
ANSWER: My Lai massacre [ $\mathrm{Or} \underline{\text { Son My massacre] }]}$
121-12-69-13218
19. Name these Asian languages, for 10 points each.
[10] This primary language of islands such as Shikoku and Kyushu uses many of the same characters as Chinese, with much of that influence growing during the Heian period.
ANSWER: Japanese [or Nihongo]
[10] This language isolate was standardized in the hangul system of writing by Sejong the Great, although aristocratic preferences led to coexistence of the hanja form of writing this language for centuries.
ANSWER: Korean
[10] This primary dialect of the Philippines is the basis for much of the standardized Filipino language. ANSWER: Tagalog

192-12-69-13219
20. Answer some questions about using a microscope, for 10 points each:
[10] This is the name given to each of the three or four lens in an optical microscope, which can be rotated between by turning the nosepiece.
ANSWER: objective
[10] This type of electron microscope can be used to image the internal structure of organelles. It is contrasted with the scanning electron microscope, which images surfaces.
ANSWER: tunneling electron microscope
[10] This kind of high-powered objective on an optical microscope requires placing a drop of viscous substance on the coverslip on the slide to get a high-resolution image.
ANSWER: oil immersion lens
21. The protagonist of this novel is saved by a solar eclipse in the year 528 . For 10 points each:
[10] Name this satire of British imperialism in which Hank Morgan befriends a page named Clarence and quickly modernizes the title location.
ANSWER: A Connecticut Yankee in King Arthur's Court
[10] This author of A Connecticut Yankee in King Arthur's Court also wrote a story in which a jumping frog is foiled by quail-shot. He created Tom Sawyer and Huck Finn.
ANSWER: Mark Twain [or Samuel Langhorne Clemens]
[10] In this Twain short story, Mary and Edward discover a bag of gold that is revealed to be fake only after eighteen citizens make false claims to it.
ANSWER: "The Man That Corrupted Hadleyburg"

