1. The Black Swan-class sloop Crane was damaged by friendly fire during this event. The Sevres Protocol was signed in response to this event, during which paratroopers landed at Parker's Memorial in order to take the Mitla Pass. One country's response to it was Operation Kadesh, while Operation Musketeer was the British and (*) French intervention in this incident. Resolution 1001 created the UN Emergency Force during this event, which was ended through the efforts of Lester Pearson. Anthony Eden resigned after this event. It was triggered by the closing of the Straits of Tiran during an attempt to raise revenue to build the Aswan High Dam. For 10 points, identify this incident in which Gamal Abdel Nasser nationalized the namesake Egyptian canal.
ANSWER: Suez Crisis [or Tripartite Aggression or Suez War]
<Mukherjee>
2. Looping magnetic fields in this region form areas with long, pointed peaks known as helmet streamers. Bernard Lyot invented the first method for continuous imaging of this region. Spectral lines produced in this region were initially attributed to an unknown gas named after it, but were later determined to come from ionized iron. Lockyer and Frankland's studies of this region led to their coining the term $\left(^{*}\right)$ "helium" for a gas first observed here. "Holes" in this region are the origin of the solar wind, bursts of which include this region's namesake "mass ejections." This region is seen when the moon blocks out the photosphere during a solar eclipse. For 10 points, name this outermost layer of the Sun.
ANSWER: corona [prompt on "Sun"]
3. This state's John Day Fossil Beds are the source of brontothere specimens. Eagle Cap Wilderness is located in this state's Wallowa Mountains, part of a national forest that contains the southern part of Joseph Canyon and adjoins the western side of Hells Canyon. In this state, Wizard Island lies in a lake that was formed when the eruption of Mount (*) Mazama caused a caldera to fill with water. Crater Lake and Mount Hood are landmarks in this state's section of the Cascade Range. For 10 points, the Willamette Valley of what northwestern state was the destination of 19th-century pioneers who traveled on a cross-country trail?
ANSWER: Oregon
4. This composer used a constant open fifth drone to simulate a hurdy-gurdy in "Der Liermann," the final piece in a work that begins with the singer writing the words "Good Night" on his beloved's door. This composer's works are catalogued by $D$ numbers. The final movement of his fourteenth string quartet includes a tarantella representing Death. During the 1820s, his works were often performed at small gatherings in the private homes of his friends and patrons. This composer of the song cycle (*) Winterreise and the string quartet Death and the Maiden wrote over 600 lieder, including "Gretchen at the Spinning Wheel" and "Der Erlkönig." For 10 points, name this 19th-century Austrian composer who left his eighth symphony "Unfinished."
ANSWER: Franz Schubert
5. A 2010 book by Richard Wrangham argues that a certain behavioral innovation led to the rise of this species, citing its considerably smaller and simpler digestive tract. This species made extensive use of the Acheulean artifacts and may have experienced a case of island dwarfism leading to the evolution of Homo floresiensis, or "Hobbit man." Richard Leakey's 1984 discovery of (*) "Turkana Boy" ignited an extended debate over this species' connection with Homo ergaster. Eugene Dubois discovered its first known specimen in 1891. Living 1.3 to 1.8 million years ago, this species mastered fire and was the first hominid to appear outside of Africa. Peking Man and Java Man are examples of, for 10 points, what hominid whose name means "upright man?"
ANSWER: Homo erectus [or $\underline{\boldsymbol{H} . \text { erectus; }}$ accept $\underline{\boldsymbol{H}}$ omo ergaster before mentioned due to the unresolved conflation; prompt on "upright man" before mentioned]
<Ray>
6. One story states that these creatures were born from the blood of Achelous's broken horn. Upon dying, several of these creatures turned white and transformed into islands in the sea of Aptera. They were granted wings after the abduction of their childhood playmate Persephone, but their feathers were plucked by the Muses after Hera coaxed them into a singing contest. Aphrodite saved Butes from these figures, from whom the (*) Argonauts were protected by Orpheus' music. One hero put beeswax in his ears and was tied to the mast of his ship to gain immunity against their power. For 10 points, name these maidens encountered by Odysseus, who sang so beautifully that ships crashed into their island. ANSWER: Sirens
<Mukherjee>
7. In one of this author's stories, a postcard arrives in Seattle to Ruma from her father out of the blue. In another story by this author, the title word is whispered in the Mapparium to Miranda, who hears it again when a seven-year-old helps her put on a silver cocktail dress for an extramarital affair. This author of "Unaccustomed Earth" and "Sexy" penned a story which ends with (*) monkeys attacking the illegitimate child Bobby; in that story, Mrs. Das becomes the object of affection of the tour guide Mr. Kapasi, who also works as a translator. For 10 points, name this Bengali-American woman who wrote about Gogol Ganguli in The Namesake and penned the short story collection Interpreter of Maladies.
ANSWER: Jhumpa Lahiri
8. This plan was opposed by an organization headed by Frank Garnett, Amos Pinchott, and Edward Rumley called the NCUCG. It advocated the creation of "proctors" and the ability of officials to "float" in order to combat backlog. After Joseph T. Robinson died during debate over this plan, Alben Barkley defeated Pat Harrison to become the new Senate majority leader. Homer Cummings's testimony in favor of it cited the need for (*) "new" blood, and it advocated ten-year term limits. This plan was derailed by the events of "White Monday," and by Owen Roberts changing his mind in the "switch in time that saved nine". It targeted the "Four Horsemen". For 10 points, identify this plan to stack the Supreme Court with supporters of the New Deal.
ANSWER: Franklin Roosevelt's court-packing scheme [or Judicial Procedures Reform Bill of 1937]
9. One character in this play tells a story about a tailor who took three months to make a pair of trousers, infuriating his customer, who cried that God only took six days to make the world. Another character asks for his painkiller six times before it is time for $i t$, at which point he learns that none is left. One character in this play claims that "Nothing is funnier than unhappiness"'. In this play, whose set is laid out like a human skull, a husband and wife are unable to kiss each other because they have no ${ }^{(*)}$ legs and live in dustbins. This play depicts a potentially post-apocalyptic world, where Nagg and Nell live with Hamm and his servant Clov. For 10 points, name this Samuel Beckett play with a title inspired by chess.
ANSWER: Endgame [or Fin de Partie]
10. The standardized method of measuring this quantity is the Harned cell. One instrument used to measure this contains an internal electrode, a reference electrode, and an ion-selective glass tip. For antimonial compounds, the Hammett function is often used instead of this quantity. Compounds like Tris, MOPS, and HEPES are designed to keep this quantity constant. Popular methods of noting changes in this quantity involve adding ${ }^{(*)}$ methyl red and bromophenol blue. A sudden jump in this quantity occurs around the equivalence point of a standard titration, and indicators like phenolphthalein show changes in it by changing color. It is found by taking the negative logarithm of the concentration of hydrogen ions. For 10 points, name this measure of acidity.
ANSWER: pH [prompt on "acidity" or "basicity"; accept pOH until "hydrogen"]
<Mukherjee>
11. This man's government was responsible for the disappearance of Charles Horman, and his government employed Michael Townley to assassinate Orlando Letelier in Washington, DC. A state visit by John Paul II encouraged him to hold a democratic election. A group taught by Arnold Herberger worked for this man while lowering tariffs and privatizing several industries and were known as the (*) Chicago Boys. This employer of Milton Friedman as an economic advisor used Dignity Colony and the ship Esmeralda as torture centers. This head of the DINA secret police and participant in Operation Condor overthrew the Popular Unity-controlled government on September 11, 1973. For 10 points, identify this dictator of Chile, who overthrew Salvador Allende.
ANSWER: Augusto José Ramón Pinochet Ugarte
<Mukherjee>
12. One law named for this man states that mass equals $\mathbf{Q}$ over $\mathbf{F}$ times molar mass over valency. Optical isolators are based on an effect named for this man governed by a law in which the path length and flux density are related to the angle of rotation by the Verdet constant. He stated that the mass of substance transformed at an electrode is proportional to the applied charge in one of his two laws of electrolysis. Another law named for him subsumes (*) Lenz's law due to the presence of a minus sign, and states that the voltage is equal to the time derivative of the magnetic flux. That law is used to find the EMF around a loop of current-carrying wire. For 10 points, name this English physicist and namesake of a law of electromagnetic induction.
ANSWER: Michael Faraday
13. In this opera's third act, its main character sings "En vain pour éviter" while turning over an ace of spades representing death. In addition to singing the Card aria, this opera's main character sings "L'amour est un oiseau rebelle" in its first act before throwing flowers from her bodice at a soldier. In its second act, that soldier's eventual rival sings "Votre toast" and flirts with the title character, a worker at a (*) cigarette factory in Seville. Its final act is set at one of Escamillo's bullfights, where the title character is fatally stabbed by Don Jose. For 10 points, name this opera about a seductive gypsy composed by George Bizet.
ANSWER: Carmen
14. After lying that she was Abraham's sister rather than his wife, Sarai and her family were banished from this place. One inhabitant of this place has a dream in which birds eat baked goods out of a basket on his head while another dreams about seven fat and seven thin cows. When visiting this country, one character has a (*) silver cup placed in his sack, resulting in him being taken prisoner. A man dies in this country as he blesses his sons Reuben and Benjamin. After being seduced by Potiphar's wife, Joseph is imprisoned here and achieves a high position under the king. This country is ravaged by plagues of locusts, hail, and the deaths of its firstborn. For 10 points, name this country in which the Israelites were slaves until being freed by Moses.
ANSWER: Ancient Egypt [or Mitzrayim]
15. Near the end of this novel, a central character's corpse vomits a disgusting black liquid while it is being dressed for a funeral. At the behest of this novel's protagonist, the enamored young boy Justin goes to fetch a small blue bottle against the decree of his master, Monsieur Homais. In this novel, Berthe is forced to work on a cotton mill after the death of her father, who had earlier botched an attempt to $(*)$ operate on Hippolite's clubfoot. After borrowing too much money from Monsieur Lheureux, the title character of this work commits suicide by drinking arsenic, although her lovers Leon and Rodolphe remain apathetic. For 10 points, name this novel about the wife of a country doctor, written by Gustave Flaubert.
ANSWER: Madame Bovary
16. One section of this work states that one should praise the talented but not "put away" the incompetent, because everyone has a role. An early section of this work compares virtue to the pole star, because all other stars turn towards it. This book bashes a figure who isolated himself after noting how disorder permeated society. It lists stinginess and oppression as two of the four "bad practices" to contrast with the "five excellent practices" required of (*) rulers. Another section states that fraternal submission and filial piety are two qualities required of a gentleman, or Junzi. It consists of 20 books compiled by the students of its central figure during the Warring States Period. For 10 points, name this collection of the sayings of Confucius.
ANSWER: The Analects [accept Lunyu]
17. In one story by this author, a character poses the question "You ever ate a chicken that was two days old?'" to the atheist Hulga, after which that character, a Bible-seller named Manley Pointer, steals her prosthetic leg and runs away. She also wrote of a woman traveling to a reducing class at the $Y$ with her son Julian, whose dignity is offended by a hat-wearing (*) black woman who forbids her child from accepting a penny. In another of her stories, a woman talks to Red Sammy at The Tower on the way to a vacation in Florida with her family; a panicking cat later causes that character's car to crash, after which the Misfit kills her. For 10 points, name this author of "Good Country People", "Everything That Rises Must Converge", and "A Good Man is Hard to Find."
ANSWER: Flannery O'Connor [or Mary Flannery O'Connor]
18. This artist worked with Léonide Massine to create large, colorful backdrops for the ballet Aleko. A man plays a violin while sitting on a large chicken as two people float by in his The Marriage on the Eiffel Tower. He used spokes of color to decorate the ceiling of the (*) Paris Opera House. This artist's The Tribe of Levi was created in stained glass. He painted over the words "Ich bin Jude" and included Nazi soldiers in a 1938 painting where a menorah rests under the feet of Jesus, his White Crucifixion. In another of his works, a man with a sickle stands next to an upside-down woman and a green face looks at a goat. For 10 points, name this Russian-born Jewish artist of I and the Village.
ANSWER: Marc Chagall
<Bentley>
19. One isoform of this protein is targeted by autoantibodies in Goodpasture's syndrome, and one mutation in this protein causes characteristic blue sclera. ADAMTS2 cleaves its precursors, which is why ADAMTS2 mutation causes Ehlers-Danlos syndrome. This protein is glycosylated with two-sugar units, and its lysine residues are crosslinked after secretion. Hydroxylysine and hydroxyproline are unique amino acids found in this molecule, whose synthesis requires (*) vitamin C. This protein contains glycine at almost every third residue, which allows it to form a compact triple helix. This protein binds to integrins and fibronectins in the extracellular matrix, and gives tissues its tensile strength. For 10 points, name this fibrous protein found in gelatin.
ANSWER: collagen
20. While in Sicily, this man executed Gnaeus Papirius Carbo, earning the epithet "boy butcher." This man married the already-married Aemilia Scaura on the recommendation of her stepfather, Sulla. He forced the Senate into granting him imperium in Hispania to put down the revolt of Quintus Sertorius. This man's chief rival proclaimed that he "does not know how to win a war' after he didn't press the advantage from his defense of a siege at (*) Dyrrhachium. The Lex Gabinia granted this man unprecedented power to fight pirates in the Mediterranean Sea. He was ultimately defeated at the Battle of Pharsalus, after which his head was sent to Julius Caesar. For 10 points, name this man who, with Caesar and Marcus Licinius Crassus, made up the First Triumvirate.
ANSWER: Pompey the Great [or Gnaeus Pompeius Magnus]
> 21. This man wrote a story in which George Fotheringay accidentally sends Constable Winch to Hades. This author of "The Man Who Could Work Miracles" and The Outline of History wrote of George Ponderevo's attempts to market his uncle Edward's miracle cure in another novel. One of his novels opens at the Coach and Horses Inn and sees the protagonist launch a "reign of terror" from the apartment of Dr. Kemp. This author of (*) Tono-Bungay created a man who restocks his supply of matches in a ruined museum and rescues Weena from drowning. One of his novels features the societies of the Eloi and the Morlocks, while in another of his novels, Griffin changes his refractive index. For 10 points, name this author of The Time Machine and The Invisible Man.

ANSWER: Herbert George Wells
22. A double pointwise type of this operation is used to construct the indicator function of the rationals. One method of evaluating this operation is to find a pair of functions that bound the input and use the Squeeze Theorem. Proving that the result of this operation exists is done using the epsilon-delta method. Solving improper integrals requires taking this operation on one of the bounds. When substitution yields indeterminate forms, this operation is solved using (*) L'Hôpital's Rule. The result of this operation exists if and only if its left and right versions are equal, and this operation taken on $h$ is used to define the derivative. For 10 points, name this operation that gives the value of a function as the input approaches a given value.
ANSWER: limit [accept more specific answers, like taking the limit as $x$ goes to some number]
<Mukherjee>
23. Rhaus and Raptus were kings of one subgroup of this people, who were divided into Silingi and Hasdingi branches. One king of this people was implored by Licinia Eudoxia to overthrow Petronius Maximus. The final king of this people was besieged at Mt. Pappua by the general Pharas. Tzazo was the brother of one leader of this people, and (*) Belisarius defeated that king, Gelimer, at Ad Decimum and Tricamerum. Hippo Regius was besieged by another member of this people. Though they are not the Huns, one of their leaders was implored by Pope Leo the Great not to destroy buildings during his most famous military action. For 10 points, name these barbarians that, under Geiseric, sacked Rome in 455. ANSWER: Vandals
24. Sing Sing prison is the setting of this man's Big Electric Chair. He created a red-toned image of car accident victims as part of his Death and Disasters series, and his hair extends wildly to the top-left on the canvas in Camouflage Self-Portrait. This man screened films he created like Batman Dracula and a slow motion recording of the (*) Empire State building at the Factory in New York City. The title pop-star aims a gun at the viewer and is rendered multiple times in his Eight Elvises. He also created a silkscreen diptych showing many copies of the star of Some Like It Hot. For 10 points, name this American Pop Artist known for painting Campbell's Soup Cans.
ANSWER: Andy Warhol

1. One of these figures was instantly revived after being struck down in his homeland Pallene, so his opponent dragged him across the Thracian border to kill him. For 10 points each:
[10] Alcyoneus led what group of figures with serpent tails for feet against the Olympians after the latter defeated the Titans?
ANSWER: Giants [or Gigantes]
[10] The Giants were incited against the Olympians by this Earth goddess, whose union with Uranus produced the Titans.
ANSWER: Gaia [or Gaea; or Gea; or Terra]
[10] The only Giant to survive the war shares this name with the son of Apollo and Cyrene, a culture hero who discovered bee-keeping and chased Eurydice on the night that she died.
ANSWER: Aristaeus [or Aristaios]
<Gupta>
2. Mundell and Fleming's extension of this model implies that it precludes the "Inconsistent Trinity" of a fixed exchange rate, free capital flow, and an independent monetary policy. For 10 points each:
[10] Identify this graph which uses its namesake curves to illustrate the effect of interest rate on economic output.
ANSWER: IS/LM Model or Investment Saving/Liquidity Preference Model
[10] The horizontal axis of the IS/LM model consists of this value's "real" form. Its "nominal" form measures the total value of goods and services produced in a country, but not goods and services produced by that country's citizens abroad.
ANSWER: Gross Domestic Product [or GDP; do NOT accept "Gross National Product" or "GNP"]
[10] The formulator of the IS/LM model, John Hicks, names a type of demand that can be related via the Slutsky equation to the demand named for this other economist. He authored the 1890 text Principles of Economics.
ANSWER: Alfred Marshall
<Ray>
3. Quantum chromodynamics predicts the existence of 8 different types of these particles, whose existence has been inferred from three-jet events. For 10 points each:
[10] Name these particles which carry the color charge that holds quarks together within a nucleon.
ANSWER: gluons
[10] Gluons mediate this fundamental force, which has not yet been combined mathematically with the electroweak force and gravity.
ANSWER: strong force
[10] This class of elementary particles, which includes the electron, muon, and tau, are not subject to the strong force. They are a subclass of fermions, since they all have spin one-half.
ANSWER: leptons
4. This work posits that the title concept is "the profoundest fact of the human condition." For 10 points each:
[10] Identify this series of essays including "The Day of the Dead" and "From Independence to the Revolution," an analysis of Mexican culture and identity.
ANSWER: The Labyrinth of Solitude [or El Laberinto de la Soledad]
[10] Essay collections by this Mexican Nobel Laureate include Alternating Current and The Bow and the Lyre, as well as The Labyrinth of Solitude. He used the Aztec calendar as inspiration for his poem "Piedra de sol," or "Sunstone."
ANSWER: Octavio Paz Lozano
[10] Paz wrote a collection titled for this type of "grammarian" in which Hanuman contemplates the Garden of Ravana. In the Chinese classic Journey to the West, Xuanzang is accompanied by Sun Wukong, the king of these creatures.
ANSWER: monkeys [prompt on "apes" or equivalents]
<Thompson>
5. This incidental music was written sixteen years after its composer's concert overture on the same play, which was written when its composer was only 17 . For 10 points each:
[10] Name this incidental music to a Shakespeare play, which includes a Bergomask accompanying a dance for clowns and a prominent Wedding March.
ANSWER: A Midsummer Night's Dream
[10] This German composer, whose sister Fanny was an accomplished pianist, wrote that incidental music to A Midsummer Night's Dream. He also composed the Scottish and Italian symphonies.
ANSWER: Felix Mendelssohn Bartholdy
[10] Mendelssohn composed his overture to A Midsummer Night's Dream one year after writing this piece, his Opus 20. Its third movement scherzo was inspired by the Walpurgisnacht section of Goethe's Faust, and it is scored for a large number of string instruments.
ANSWER: string octet in E flat major
<Magin>
6. This city-state signed the Treaty of Ninfeo in 1261, forming an alliance with the Byzantine Empire. For 10 points each:
[10] Name this city which was controlled by powerful families such as the Spinola and Boccanegra, and won the 1284 Battle of Meloria under Benedetto Zaccaria.
ANSWER: Genoa [or Genova]
[10] This site of a 1409 council which attempted to resolve the Western schism by electing a third Pope was a rival of Genoa in the thirteenth century. It lost at Meloria and is now known for a poorly engineered bell tower.
ANSWER: Pisa
[10] This accomplished admiral and leader of Genoa in the sixteenth century defeated the Fieschi conspiracy and won against the Ottomans at Koroni and Patras, though he lost the Battle of Preveza to the Ottoman admiral Barbarossa.
ANSWER: Andrea Doria
7. Identify some poetic works by John Milton, for 10 points each.
[10] This poem begins with a ten-line preamble that dismisses "vain deluding Joys" and praises the goddess "divinest Melancholy". It is paired with a contrasting poem whose speaker invokes Euphrosyne, the goddess of Mirth.
ANSWER: "Il Penseroso"
[10] Milton's best-known work is this attempt to "justify the ways of God to man", a Biblical epic whose two narrative arcs focus on the fallen Satan and Adam and Eve.
ANSWER: Paradise Lost
[10] Milton included an apocalyptic image of a "two-handed engine at the door" that "stands ready to smite once and smite no more" in this powerful elegy written on the death of his friend Edward King.
ANSWER: "Lycidas"
8. This city was the destination of the Mariel Boatlift, a mass exodus of Cuban refugees assisted by the USS Saipan. For 10 points each:
[10] Identify this city that was also home to the Liberty City Riots in the 1980s. This seat of Dade county was one site of recounts during the 2000 elections.
ANSWER: Miami
[10] Miami was also hit hard by this phenomenon, in which the Miami Zoo was destroyed. This 1992 weather disaster also caused up to ninety-five percent of Homestead and Sweetwater to be flooded.
ANSWER: Hurricane Andrew
[10] In 1999, Miami was where Border Patrol agents seized this child, returning him to his father in Cuba. The affair over this child led to modifications in the "wet feet, dry feet" policy.
ANSWER: Elian Gonzalez
9. Domenico Ghirlandaio painted the fresco The Vocation of the Apostles for this building. For 10 points each:
[10] Identify this building which contains Perugino's Christ Delivering the Keys of the Kingdom to Saint Peter.
ANSWER: The Sistine Chapel [or Sacellum Sixtinum or Cappella Sistina; do not accept "Ceiling of the Sistine Chapel" because the works described are not on the ceiling]
[10] Two bored-looking cherubs with green and red wings rest their arms on the bottom of this Italian Renaissance artist's Sistine Madonna.
ANSWER: Raphael Sanzio da Urbino
[10] This artist painted The Last Judgment for the Sistine Chapel. He also depicted the Creation of Adam on the building's ceiling.
ANSWER: Michelangelo di Lodovico Buonarroti Simoni
10. This gene is activated downstream of Ku heterodimers binding to damaged DNA sites, and it is responsible for arresting the cell cycle. For 10 points each:
[10] Name this tumor suppressor gene that is named for its molecular weight. It is sometimes referred to as the "guardian angel of the genome" due to its importance.
ANSWER: p53
[10] Mdm2 binding moves p53 from the nucleus to this compartment of the cell. This compartment of the cell contains all the organelles and is bounded by the cell membrane.
ANSWER: cytoplasm [or cytosol]
[10] Mdm2 destroys p53 by attaching this 76-amino acid peptide to it. This peptide sends its targets to the proteasome to be degraded.
ANSWER: ubiquitin
<Mukherjee>
11. It maintains that Hod, Gervurah and Keter are three of ten regions from which God emanates. For 10 points each:
[10] Name this branch of mystical Judaism whose texts include the Zohar and The Book of Creation. ANSWER: Kabbalah
[10] One practice central to Kabbalah is assigning numbers to words or phrases using this system, in which each letter of the alphabet corresponds to a number. For example, "chai", the Hebrew word for "life", is equal to 18 .
ANSWER: gematria
[10] Prior to the emergence of Kabbalah, in the era named for this Jewish text composed of the Mishnah and Gemarah, only a few men, such as Akiva, were allowed to dabble in mysticism.
ANSWER: Talmud
12. Answer the following about what the New York Times has called the "growing rebellion against austerity" in Europe, for 10 points each.
[10] Inconclusive May 2012 elections in this country, in which right- and left-wing parties polled better than expected, did not allow either its socialist Pasok party or the New Democracy party to form a government. Another round of elections will be necessary.
ANSWER: Greece
[10] François Hollande, the candidate of this party, defeated Nicolas Sarkozy in France's presidential election, leading many analysts to doubt the viability of Sarkozy's economic partnership with Angela Merkel.
ANSWER: Parti Socialiste [or Socialist Party]
[10] In April 2012, Mark Rutte submitted his resignation as prime minister of this country after his coalition collapsed during a debate over the country's budget. Rutte leads this country's People's Party for Freedom and Democracy.
ANSWER: Netherlands [or Nederland]
13. Welch's version of this test approximately solves the Behrens-Fisher problem. For 10 points each:
[10] Name this statistical test whose usual, or "Student's," version can be "unpaired" when testing if two populations' means are equal.
ANSWER: Student's t-test
[10] This term is the statement that statistical tests hope to prove false or "reject."
ANSWER: null hypothesis
[10] T-tests can be generalized beyond two groups of data with this statistical model, usually abbreviated, which uses its namesake measure within-sample and between-samples to get an F-ratio.
ANSWER: Multiple ANalysis Of VAriance [or MANOVA]
14. In one of this man's plays, the residents of the title town rescue Laurencia and Frondoso by murdering the villainous Commander; when questioned, they all claim that the town did it. For 10 points each: [10] Identify this incredibly prolific Golden Age Spanish author, a predecessor to Tirso de Molina and Calderon de la Barca, who wrote the aforementioned Fuenteovejuna in addition to 1800 other plays. ANSWER: Lope de Vega [or Félix Arturo Lope de Vega y Carpio]
[10] Lope de Vega's play El Perro del Hortelano is an adaptation of "The Dog in the Manger", one of many fables attributed to this ancient Greek storyteller.
ANSWER: Aesop [or Aisopos]
[10] This French author wrote a collection of tales about the relationships between the sexes called the Contes, but is more famous for his twelve books of Fables, drawn from sources like Aesop and the Panchatantra.
ANSWER: Jean de La Fontaine
15. A girl holds her hands behind her back and wears a yellow cotton dress in a bronze sculpture by this artist of The Spanish Dancer. For 10 points each:
[10] Identify this French artist who exhibited The Little Fourteen-Year-Old Dancer at the Sixth Impressionist exhibition.
ANSWER: Edgar Degas [Hilaire-Germain-Edgar De Gas]
[10] Degas used lead to create one of these objects in a sculpture where a woman holds her right arm to her left foot. A mother dips her child's foot into one of these objects in a Mary Cassatt painting.
ANSWER: tub [or bath]
[10] Degas created several wax sculptures of these animals, including one with its head lowered. Many of these animals are depicted in a namesake Fair in an 1853 painting by Rosa Bonheur.
ANSWER: horses [or thoroughbreds]
16. Garnet Wolseley and his namesake ring fought in the third conflict between Britain and this empire, whose capital was located at Kumasi. For 10 points each:
[10] Name this empire, located in modern-day Ghana, which fought a series of four wars with Britain. Its kings include Opoku Ware and Osei Tutu.
ANSWER: Ashanti
[10] This artifact was said to descend from heaven onto the head of the first Ashanti king. Frederick Hodgson started a war named for this object when he demanded that Queen Yaa hand it over.
ANSWER: the Golden Stool
[10] After winning the Third Ashanti War, Garnet Wolseley was dispatched to this present-day country to suppress the Urabi Revolt. This colony was also home to the anti-British Wafd Party.
ANSWER: Egypt
17. Clifford Geertz adapted his term "thick description" from this author of Plato's Progress, whose most famous work warned of the danger of "category mistakes." For 10 points each:
[10] Name this British ordinary language philosopher who published The Concept of Mind in 1949. ANSWER: Gilbert Ryle
[10] Ryle's work Dilemmas examines the story of Achilles and the tortoise, one of these contradictory complications examined by Zeno which led him to conclude that motion is an illusion.
ANSWER: Zeno's paradoxes
[10] Gilbert Ryle's The Concept of Mind criticizes this philosophical view held by Rene Descartes as belief in a "ghost in the machine." It posits that the immaterial mind is distinct from the material body.
ANSWER: mind-body dualism [or dualist philosophy and other word forms; prompt on "mind-body separation/problem" and similar]
<Jackson>
18. One member of this genus generates a lecithinase toxin and is known for causing gas gangrene, while another is responsible for post-antibiotic diarrhea. For 10 points each:
[10] Name this genus of gram-positive bacteria, which includes the causative agents of both tetanus and botulism.
ANSWER: Clostridium
[10] Botulinum toxin interferes with the release of this neurotransmitter responsible for transmitting signals to skeletal muscles. It has both nicotinic and muscarinic receptors.
ANSWER: acetylcholine [or ACh ("ack" or "a-c-h")]
[10] Acetylcholine is the neurotransmitter of choice for the post-ganglionic neurons of this part of the autonomic nervous system, which opposes the "fight-or-flight" response, maintains digestion, and slows the heart rate.
ANSWER: parasympathetic nervous system [prompt on "peripheral" nervous system or "autonomic" nervous system; do NOT accept "sympathetic" nervous system]
<Mukherjee>
19. This man became an adviser to the Spartans, and later the satrap Tissaphernes, after he was sentenced to death in his home city. For 10 points each:
[10] Name this Athenian leader who argued for and initially led the Sicilian Expedition. This man was a student of Socrates, and features in several Socratic dialogues.
ANSWER: Alcibiades
[10] The Sicilian Expedition was an unsuccessful campaign by Athens during this war, in which Athens and its allies fought Sparta and its allies. Much of what is known about it comes from a work by Thucydides.
ANSWER: Peloponnesian War
[10] Alcibiades was one of the main advocates for overturning this peace treaty signed with Sparta in 421 BCE. This treaty stipulated the return of most lands seized by both sides during the war and was meant to last fifty years. In fact, it only lasted six before fighting resumed.
ANSWER: Peace of Nicias
20. The patriarch of this family exclaims "Durn that road", seeks to get a new set of dentures, and never learns that the preacher Whitfield fathered a member of this family who secretly buys a horse. For 10 points each:
[10] Name this family which includes Anse and Jewel, as well as Jewel's thoughtful brother Darl. They travel to bury their matriarch Addie in the novel As I Lay Dying.
ANSWER: the Bundren family [or the Bundrens]
[10] This author of As I Lay Dying wrote The Hamlet, The Town, and The Mansion, which make up his Snopes trilogy. He also penned Light in August and The Sound and the Fury.
ANSWER: William Cuthbert Faulkner
[10] Chapter 19 of As I Lay Dying is narrated by the youngest Bundren, Vardaman, and consists entirely of this five-word sentence.
ANSWER: "My mother is a fish."

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21. One of these is used to confine plasmas in a tokamak, and in general they are generated by moving charges or oscillating electric fields. For 10 points each:
[10] Identify these phenomena which impart forces on charges perpendicular to their directions. They are symbolized B and usually radiate from the north pole to the south pole.

## ANSWER: magnetic field

[10] This value, symbolized mu, is the ability of a material to allow a magnetic field to pass through it. For free space, it is equal to four pi times ten to the negative seventh newtons per ampere squared.
ANSWER: permeability [or permeability of free space; do NOT accept "permittivity"]
[10] The strength of a magnetic field in matter is symbolized by this letter. It is equal to the B-field divided by the permeability of free space, all minus the induced magnetization.
ANSWER: $\underline{\mathbf{H}}$
<Mukherjee>
22. This naval battle ensured British naval supremacy for a hundred years and saw a successful "crossing of the T". For 10 points each:
[10] Name this battle fought in 1805 between British forces under the command of Lord Nelson and the combined Spanish and French fleets.
ANSWER: Battle of Trafalgar
[10] Nelson's flagship was this one-hundred-four-gun ship of the line, which is now a museum ship and the oldest warship still in commission.
ANSWER: HMS Victory
[10] This French commander at Trafalgar was captured by the British aboard his flagship, the Bucentaure. He had earlier commanded one of only two ships to escape the Battle of the Nile.
ANSWER: Pierre-Charles-Jean-Baptiste-Silvestre de Villeneuve
<Bentley>
23. Answer these questions about postmodern American literature, for 10 points each.
[10] In this Don Delillo novel, Hitler Studies professor Jack Gladney learns that his wife Babette has been cheating on him to obtain Dylar and obsesses over his impending death after coming into contact with the Airborne Toxic Event.
ANSWER: White Noise
[10] This author included ludicrous features like the Peter Pequid society, a hyper right-wing organization that opposes capitalism because it leads to communism, in The Crying of Lot 49. This reclusive author also wrote $V$. and Mason and Dixon.
ANSWER: Thomas Ruggles Pynchon, Jr.
[10] This John Barth novel concerns Billy Bockfuss, a man raised as a farm animal, who is trained by the giant computer WESCAC to become the messianic Grand Tutor of New Tammany College.
ANSWER: Giles Goat-Boy [or The Revised New Syllabus of George Giles our Grand Tutor]

