Bulldog High School Academic Tournament 2014 (XXIII): Tonight I Can Write The Hardest Lines
Written by Yale Student Academic Competitions
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Packet 4 Tossups

1. A khanate named for this region changed hands via the Treaty of Kuchuk Kainarji. Ottoman general Gedik Ahmed Pasha conquered lands in this region that were once colonies of Genoa, including the port which may have introduced the Black Death to Europe called Kaffa. Florence Nightingale served as a nurse in this region. A disastrous excursion by a cavalry unit in this region was led by the Earl of Cardigan as part of a larger successful siege of its port city of Sevastopol. For 10 points, identify this peninsula, the site of the Battle of Balaclava in a namesake war in which France and Britain stopped Russian gains against the Ottomans in the Black Sea.
ANSWER: **Crimea**n Peninsula [or The **Crimea**; or **Krym**; or **Qirim**] <MW>

2. In the Prologue of Offenbach's *Tales of Hoffmann*, Nicklausse sings an excerpt from this earlier opera, which the opera house next door is performing. That same excerpt from this opera is the basis for the twenty-second of Beethoven's *Diabelli Variations*. In its aria "Il mio tesoro," Don Ottavio swears vengeance for the murder of Donna Anna's father. At the end of this opera, a statue of the Commendatore comes to life and drags the title character to hell. In its "Catalogue Aria," Leporello recounts the numerous romantic conquests of his master, this opera's title character. For 10 points, name this Mozart opera about a legendary seducer.
ANSWER: ***Don Giovanni*** <KK>

3. This god is often shown wearing a hat with a peacock feather in it. In one text, this god likens three temperaments called *gunas* to fruit. This god was threatened by the poison breastmilk of the demoness Putana. Bhaktivedanta Swami Prabhupada founded a society devoted to this god, who met Radha, befriended cowherd girls, and stole butter during his childhood. This god said "Now I am become death, destroyer of worlds" and revealed his full glory after asking Arjuna to keep fighting in his role as a charioteer. For 10 points, name this god who speaks in the *Bhagavad Gita,* the eighth avatar of Vishnu, who is addressed at the start of a great mantra after the word "Hare" ("HAH-rey").
ANSWER: **Krishna** [or **Krsna**; prompt on "Vishnu" until mentioned] <MJ>

4. In one poem, this man wrote "I no longer love her, that's certain, but maybe I love her. / Love is so short, forgetting is so long." As translated by W.S. Merwin, he also wrote "I want / to do with you what spring does with the cherry trees," in a collection whose last poem opens "The memory of you emerges from the night around me," after his poem that begins "Tonight I can write the saddest lines." This Stalinist addressed ordinary objects such as tuna in *Elemental Odes*, and wrote a section on conquistadors in his sprawling poetic account of Latin America. For 10 points, name this Chilean poet of *Canto General,* who wrote *Twenty Love Poems and a Song of Despair*.
ANSWER: Pablo **Neruda** <JR>

5. In this location, compounds like *O-N*-acetylglucosamine are attached to sequences like asparagine-anything-serine as part of glycosylation. This location is where signal patches on proteins are recognized, prompting them to eventually be directed to the lysosome, possibly with the addition of mannose-6-phosphate. Proteins headed for this location may be coated in COPII ("cop two") protein. The *cis* face of this organelle, which is composed of cisternae, receives vesicles from the endoplasmic reticulum. For 10 points, name this eponymous "apparatus" which processes proteins before they are secreted.
ANSWER: **Golgi** apparatus [or **Golgi** complex; or **Golgi** body] <AS>

6. While working as an advertiser, this man coined the term "coffee break" for Maxwell House. A later experiment by this psychologist involved a noise heard when rats ran into maze walls that had been changed in length from previous runs. This lover of Rosalie Raynor and deviser of the "Kerplunk" experiment claimed he could raise any of twelve children to enter whatever profession he desired. His most famous experiment led the test subject to fear all objects appearing white or fuzzy, "even Santa Claus". For 10 points, identify this founding behaviorist psychologist who classically conditioned "Little Albert" by ringing a gong each time the child was held a white rat.
ANSWER: John Broadus **Watson** <EB/MW>

7. A novel by this author features the scientist Beenay from Saro University in Lagash, who learns about the Apostles of Flame. Alexander Adell and Bertram Lupov pose the title inquiry for the first time to Multivac in a short story by this man. Roj Nemmenuh Sarton, a resident of Spacetown, is found murdered in this author's *The Caves of Steel.* In another of his novels, Hari Seldon's development of psychohistory uses the laws of mass action to predict the future. This author of "The Last Question" and *Nightfall* put forth "Three Laws" for machines in the short story "Runaround" For 10 points, name this American science fiction author of the *Foundation* series and "I, Robot."
ANSWER: Isaac **Asimov** <HX>

8. New York's DUMBO neighborhood is named for one of these structures. An early example of these things at Clifton was designed by Isambard Kingdom Brunel. The largest example of this type of structure, named Akashi Kaikyo, is a few miles from downtown Kobe, Japan. The son of John Roebling, a pioneer of these edifices, was injured while building one of their caissons. One of these in California is continually painted international orange; another, nicknamed Galloping Gertie, collapsed into Puget Sound. For 10 points, name this type of two-towered, gap-spanning structure supported by cables, whose examples span Tacoma Narrows and the Golden Gate.
ANSWER: **suspension bridge**s [accept **bridge**s, road **bridge**s, or bridge **overpass**es before "Clifton" is read and prompt on them on or after "Clifton" is read; accept train **bridge**s before "Clifton" is read, but do NOT accept or prompt on it on or after "Clifton" is read] <JW>

9. Smedley Butler uncovered a planned response to this initiative, the Business Plot, while Rexford Tugwell spearheaded its greenbelt towns. Its opponents included the "Four Horsemen," and it was furthered by Frances Perkins, the first female Cabinet official. Part of this agenda was struck down in *Schecter Poultry v. US,* the "sick chicken case," ending an agency which used a blue eagle symbol. The labor-strengthening Wagner Act was part of this initiative along with the bank-strengthening FDIC and building-repairing WPA. For 10 points, name this set of government-expanding economic reforms, aimed at alleviating the Great Depression under Franklin Roosevelt.
ANSWER: **New Deal** [prompt on more general answers indicating initiatives started at the behest of President Franklin Delano Roosevelt] <JW>

10. The integral with respect to this quantity of a Lagrangian yields an action. The principle of detailed balance requires that dynamics be symmetric under the reversal of this variable, which is conjugate to energy. If a quantity's value is independent of this variable, the quantity is conserved. The SI unit of this variable is defined by a device that employs cesium. This quantity experiences "dilation" at relativistic speeds. The derivative of momentum with respect to this quantity is force. Entropy may explain why the so-called "arrow" of this phenomenon is unidirectional. For 10 points, name this dimension that is used to describe which things happen before or after other things.
ANSWER: **time** <AS>

11. This rival of Michael Foot and David Steel once filled the position of Foreign Secretary with Lord Carrington. This leader held firm after the battle of Orgreave and passed an ordinance banning "flying pickets" in response to Arthur Scargill, who led a large coal miners' strike. The unpopular "Community Charge," which was in reality a poll tax, contributed to the downfall of this elected official, who negotiated the creation of Zimbabwe and sent troops to Argentina to defend the Falkland Islands in 1982. For 10 points, name this Conservative British Prime Minister nicknamed the "Iron Lady."
ANSWER: Margaret Hilda **Thatcher**, Baroness Thatcher <LL>

12. In one portrait by this artist, a woman wears a black headband and an empire-waist dress while reclining on an antique settee. Another of his portraits shows soldiers pushing cannons in the background; the left foreground of that painting features stones inscribed with "Carolus Magnus" and "Hannibal." Besides painting Madame Recamier and depicting a red-caped figure atop a rearing horse, this artist showed a turbaned man clutching a piece of paper in a bathtub. For 10 points, name this French Neoclassicical painter of *Napoleon Crossing the Alps, The Death of Marat*, and *The Death of Socrates*.
ANSWER: Jacques-Louis **David** <GL>

13. One of these systems consisting entirely of photons enclosed in a perfectly absorptive container is a model for blackbody radiation. One basic model of these things describes pressure as arising from elastic collisions with their containers. A more-sophisticated law describing these things accounts for compressibility and intermolecular forces using "*a*" and "*b*" parameters, and was developed by van der Waals. A constant named for these things is about 8.31 in SI units and is denoted by the letter "R". For 10 points, name these gases which are described by their namesake law, which reads "*P V* equals *n R T*".
ANSWER: **ideal gas**es [accept **ideal** after "gases" is read; prompt on "gas" or word forms] <JR>

14. This character studies alongside a boy who saw this character's father commit suicide by jumping in front of a train. This man compares himself to Jesus Christ in his poem "Hamlet. " This sometime member of the Forest Brotherhood faints while walking through Voskoboynikov's gardens two years after his mother's funeral. This man's love interest attempts to shoot Komarovsky and marries a general nicknamed Strelnikov but named Pasha Antipov. This man, who studies medicine with Misha Gordon, flees by train during the Bolshevik revolution. For 10 points, name this lover of Lara, the title poet and medical man of a Russian novel by Boris Pasternak.
ANSWER: Doctor **Yuri** **Zhivago** [accept either underlined part; or **Yura**; or **Yurochka**] <JR>

15. This character's great-great-great-granduncle invented golf at the Battle of Green Fields by decapitating an enemy. His Sackville relative Lobelia steals his silver spoons before he returns during an auction, and he donates a *mithril* mail shirt to a local museum. Besides hiding a fabulous white gem in his pillow, this character shelters with a bear-man and turns some trolls to stone. Accompanied by a wizard who battles the Necromancer, this character journeys to the Lonely Mountain and wins an item that turns him invisible in a riddle game with Gollum. For 10 points, name this hobbit who helps defeat the dragon Smaug and gives the One Ring to his "nephew," Frodo.
ANSWER: **B**ilbo **Baggins** [or **Bilbo**; prompt on "Baggins;" prompt on "the Hobbit"] <GL>

16. This object can be rotated into itself and reflected into itself in 12 distinct ways each, for a total of 4-factorial isometries. This object is the convex hull of four mutually equidistant points, and is thus the 3-simplex. These objects have one-sixth the volume of their enclosing parallelepiped. This self-dual object makes up the 3-dimensional Sierpinski gasket. An octahedron can be stellated by gluing one of these objects to each face of the octahedron. Root 3 times edge length squared gives the surface area of this simplest Platonic solid, a variety of triangular pyramid. For 10 points, name this regular polyhedron with four triangular faces.
ANSWER: regular **tetrahedron** [or regular **tetrahedra**; or regular 3-**simplex** before "simplex" is read; prompt on "triangular pyramid"] <AS>

17. This war was started by a series of guerilla attacks called Red All Saints' Day. Infighting between two parties in this conflict led to a series of assassinations called the Café Wars. After this conflict, the harkis were threatened for their collaboration with *pied-noirs,* who migrated to Europe *en masse* after the Evian Accords ended this war. Ahmed Ben Bella helped lead the FLN in this war, during which the May 1958 crisis caused the colonial power's side to collapse and re-form as the Fifth Republic under Charles de Gaulle. For 10 points, name this anti-colonial conflict which led to a large North African state becoming independent of France.
ANSWER: Franco-**Algerian** War [or **Algerian** War of Independence; or **Algerian** Revolution; or **Algerian** Crisis]
<MW>

18. A set of 12 "Academic" sonatas for this instrument, including one in E minor, were written by Veracini. Up to four of these instruments play the solos in *L'estro armonico*. Bach's concerti for this instrument are in A minor and E Major. Corelli's Op. 5, a set of 12 sonatas for this instrument, ends with a version of "La Follia." Bach's *Sonatas and Partitas* for this instrument solo include a lengthy D minor chaconne. Bach wrote a D minor "double concerto" for two of this instrument. This instrument imitates hunting horns by playing double stops on its A and E strings in Vivaldi's "Autumn," part of *The Four Seasons*. For 10 points, name this highest string instrument.
ANSWER: **violin** <JR>

19. Many sources conflate this deity with the ruler of a legendary city known as Tollan. This god poured his own blood over bones retrieved from the underworld in order to create humans for the fifth world era. This god looked into a mirror after sleeping with his celibate priestess sister, prompting him to throw himself on a pyre in shame. This god of the morning star had an aspect called Ehecatl who controlled the wind. Under the fifth sun, this rival of Tezcatlipoca sailed east on a raft of serpents, which may have caused worshippers of this god to conflate him with Hernan Cortez. For 10 points, name this Aztec "feathered serpent" god.
ANSWER: **Quetzalcoatl** <MW>

20. One of these characters harangued a sailor in Aleppo after the sailor's wife was stingy about handing out the chestnuts in her lap; that one had previously fled the stage to rejoin Grimalkin. Thomas Middleton added many lines for this set of characters, who work to present "a Child crowned, with a tree in his hand" after mentioning a "liver of blaspheming Jew." When "the hurly-burly's done," these characters meet near Forres upon a heath. These oddly-bearded characters serve Hecate, and promise future kingship to the descendants of Banquo. For 10 points, name these supernatural women who chant "Double, double, toil and trouble" in Shakespeare's *Macbeth*.
ANSWER: the three **witches** from *Macbeth* [or the **Weird Sisters**] <MJ>

21. A mayor of this city was fatally wounded in Miami during an assassination attempt on Franklin Roosevelt. One act of violence in this city took place in a warehouse on Clark Street; another began after Samuel Fielden's speech to a large crowd. Montgomery Ward and Sears were founded in this city where Fort Dearborn was an early settlement. John Rockefeller helped open a university in this city which was later home to Pile-1, the first nuclear reactor. This city was the site of the St. Valentine's Day Massacre carried out by Al Capone and the unusually violent 1968 Democratic National Convention. For 10 points, name this Midwestern city ravaged by a great fire in 1871.
ANSWER: **Chicago**, Illinois <ATo>

Bonuses

1. Many of his songs were popularized by the Christy Minstrels, a blackface theatrical troupe who bought exclusive rights to his song "Old Folks at Home." For 10 points each:
[10] Name this "father of American music," who composed minstrel and parlor songs such as "My Old Kentucky Home," "Beautiful Dreamer," and "Camptown Races."
ANSWER: Stephen Collins **Foster**
[10] One of Foster's best-known songs was this one, whose singer comes "from Alabama with a banjo on my knee" and tells the title woman, "don't you cry for me."
ANSWER: "**Oh! Susanna**"
[10] Foster's songs are often quoted in the works of this American composer, who wrote *Three Places in New England*, the *Concord Sonata*, and *The Unanswered Question*.
ANSWER: Charles Edward **Ives** <KK>

2. In this novel, Adenti hypothesizes that the Holy Grail was a radioactive energy source, and one character uses a computer nicknamed Abulafia. For 10 points each:
[10] Name this novel in which Causabon, Diotallevi, and Jacopo Belbo invent a conspiracy about the Knights Templar called "The Plan."
ANSWER: ***Foucault's Pendulum***
[10] In this other novel by the author of *Foucault's Pendulum*, Adso of Melk accompanies William of Baskerville as he solves a series of murders in a monastery.
ANSWER: The **Name of the Rose** [or Il **Nome della Rosa**]
[10] This Italian author of *Travels in Hyperreality* wrote *Foucault's Pendulum* and *The Name of the Rose*.
ANSWER: Umberto **Eco** <HX>

3. Tops remain upright because this quantity is conserved. For 10 points each:
[10] Name this quantity which is equal to the position vector crossed with the momentum vector. It is conserved when there are no net external torques.
ANSWER: **angular momentum** [or **rotational momentum**; do not prompt on or accept "momentum"]
[10] Suppose you have an atomic orbital with principal quantum number "n equals 3". What are the possible values of the orbital angular momentum quantum number "L" for that orbital? *All* possible values required.
ANSWER: **zero**, **one**, and **two** [all three answers required; accept in any order]
[10] In quantum mechanics, orbital angular momentum is distinguished from this type of angular momentum, which is intrinsic to a particle. Two electrons can occupy the same orbital if they have different values for this quantity.
ANSWER: **spin** angular momentum <AS>

4. A late 2013 example of one of these incidents occurred in Spuyten Duyvil on Metro-North's Hudson Line. For 10 points each:
[10] Name this type of disaster. Recent examples include explosion-causing ones in Lac-Mégantic, Quebec and Casselton, North Dakota, and one in Spain caused by a distracted driver neglecting a curve's speed limit.
ANSWER: **train crash**es [or train **derail**ments; or **train wreck**s; accept equivalents; prompt on answers not indicating that a train, tracks, or a derailment is involved in the crash]
[10] On the Northeast Corridor line between *these two cities*, a train crashed in 2013 outside Fairfield, Connecticut. One of these cities contains the Prudential Tower; the other contains the Smithsonian. Name both.
ANSWER: **Boston**, Massachusetts AND **Washington**, District of Columbia [accept **DC** instead of Washington]
[10] This system of monitoring and controlling trains remotely could have stopped many of the recent crashes. Under a law passed under President Bush, all major railroads must have this safety system by 2015.
ANSWER: **positive train control** [or **PTC**] <JW>

5. Answer the following questions about early investigative journalists, for 10 points each.

[10] Ida Tarbell wrote an expose about the production of this natural commodity. This good names a John D. Rockefeller company, later broken up into Mobil and Chevron, which monopolized its refining.

ANSWER: crude **oil** [or **petroleum**; or **gas**oline]

[10] Slum conditions in these places were flash-photographed by Jacob Riis in *How the Other Half Lives*. These edifices often had a dumbbell-shaped floor plan with thin air shafts.

ANSWER: **tenement**s [or **apartment**s; or **flat**s; accept equivalent answers which refer to multifamily city domiciles; prompt on "homes" or equivalents]

[10] This muckraker and circumnavigator of the globe wrote *Ten Days in a Mad-House* after faking insanity in 1887 to document life inside a mental asylum.

ANSWER: Nellie **Bly** [or Elizabeth Jane "Pinky" **Cochran**e; or Elizabeth Jane "Pink" **Cochran**e] <JW>

6. Pseudolus and Palaestrio are examples of this type of character in Greco-Roman comedy. For 10 points each:

[10] Name this lowest class of people from the ancient world. Pseudolus is a clever one of these people from Roman comedy, who meddles in his household's affairs.

ANSWER: house **slave**s [prompt on "servants"]

[10] This Athenian comic playwright included slaves named Xanthias in his plays about Dionysus's trip to the underworld and Strepsiades's faulty education at The Thinkery.

ANSWER: **Aristophanes**

[10] This Roman comic playwright of *Pseudolus* also wrote about a braggart soldier, or *Miles Gloriosus*, and about two twin brothers both named Menaechmus. He lifted many plots from Menander.

ANSWER: Titus Maccius **Plautus** [or Marcus Accius **Plautus**] <FM>

7. After being redshirted his freshman season behind EJ Manuel, he completed 25 of 27 passes for four touchdowns against Pittsburgh in his first start. For 10 points each:

[10] Name this Florida State quarterback and Heisman winner, who escaped sexual assault charges after a December 2012 incident.

ANSWER: Jameis **Winston**

[10] Florida State won its first two national championships under this coach, the winningest coach in Division 1 FBS history.

ANSWER: Robert Cleckler "Bobby" **Bowden**

[10] In 1993, the Seminoles got their first national championship despite losing to this team 24 to 31; this team proceeded to lose to fellow Catholic school Boston College the next week.

ANSWER: University of **Notre Dame** du Lac [or **Fighting Irish**; prompt on "N.D."] <NW>

8. A tall tale about this French philosopher claims that he devised his arguments while shut inside a stove. For 10 points each:

[10] Name this man who invented the x-y coordinate graphing system. In his *Discourse on Method,* he assured himself of his own existence by saying "I think, therefore I am."

ANSWER: Rene **Descartes** [or Renatus **Cartesius**]

[10] Descartes may have ripped off this earlier thinker, who wrote "If I am deceived, then I am" in his *City of God*. This late Roman bishop of Hippo described his conversion in *Confessions*.

ANSWER: Saint **Augustine** of Hippo [or **Augustinus**; do NOT accept or prompt on "Saint Augustine of Canterbury"]

[10] Descartes attacks this view, which holds that the believer's mind is the only existent thing. If I believe in this idea, I can't know if the external world or the people I'm reading this question to are real, since they're not me.

ANSWER: **solipsism** [accept word forms such as **solipsist**ic; prompt on "skepticism"] <MJ>

9. This law states that the absorbance of a liquid is proportional to the extinction coefficient of the absorber times the distance light must travel through it. For 10 points each:
[10] Name this law that describes how well light is transmitted through a solution.
ANSWER: **Beer**'s law [or **Beer**-Lambert-Bouguer law; or Lambert-**Beer** law; prompt on "Lambert's law"]
[10] Beer's law can be used to calculate this property of an absorber in solution. The molar form of this quantity equals the number of moles of solute divided by the volume of the solvent.
ANSWER: molar **concentration** [prompt on "molarity"]
[10] Beer's law is fundamental to this technique, in which the absorbance and reflectance of a substance is measured. In this technique, one example of which is colorimetry, the sample is typically placed in a cuvette.
ANSWER: **spectrophotometry** [or word forms; prompt on "spectroscopy"] <JR>

10. The "Albigensian" one of these campaigns targeted a peaceable dualistic sect in southern France called the Cathars, and another went on a Constantinople-sacking detour in 1204. For 10 points each:
[10] Name these holy wars, which pitted medieval Christian armies against Muslims for control of the Holy Land.
ANSWER: **Crusade**s
[10] This pope organized the Fourth and Albigensian Crusades and convoked the Fourth Lateran Council.
ANSWER: Pope **Innocent III** [or **Lotario** dei Conti di Segni; prompt on "Innocent']
[10] Pope Innocent III died on a trip to de-excommunicate this Tuscan city, which was a rival of Genoa. This city also hosted a 1409 church council that failed to resolve the Great Schism.
ANSWER: **Pisa** <JR>

11. Name these Victorian institutions that got satirized in the works of Charles Dickens, for 10 points each:
[10] In *Bleak House*, Dickens mocks this institution for being incredibly slow, costing the Jarndyce family tens of thousands of pounds.
ANSWER: **court** system [or the **judicial** system; or the **judiciary**; or the **courthouse**; or **trial** law; accept equivalents; prompt on "legal system" or "the law"]
[10] *Nicholas Nickleby* prominently features one of these institutions named Dotheboys Hall, where Wackford Squeers cruelly beats the boys who attend it.
ANSWER: boarding **school**s [or **academy**/ies; or **education** system; do not accept or prompt on "orphanages"]
[10] Amy, the title character of *Little Dorrit*, grows up in one of these places named Marshalsea, because her father is forced to live there.
ANSWER: **debtor's prison**s [prompt on "prisons" or equivalents like "jails"] <JR>

12. These geologic features can be described by the Strahler order, and meandering ones often form oxbow lakes. For 10 points each:
[10] Name these bodies of water which can form from alluvial fans or end in deltas.
ANSWER: **river**s
[10] This river, one of five in the Greek underworld, is made of fire and runs parallel to the Styx. According to Dante, people guilty of violent crimes against others were condemned to spend eternity in this river.
ANSWER: **Phlegethon** [or **Pyriphlegethon**]
[10] In this novel, the ferryman Vasudeva takes the title character across a river, where he meets and marries Kamala. He later returns to the river and takes Vasudeva's place as a ferryman.
ANSWER: *Siddhartha. An Indian Poem* [or *Siddhartha. Eine indische Dichtung*] <HX>

13. For 10 points each, consider two individuals that obey Mendelian genetics for a gene that exhibits ordinary dominance.
[10] If you cross a homozygous dominant individual with a heterozygous individual, what will the ratio of homozygous genotypes to heterozygous genotypes in their offspring be?
ANSWER: **one homozygous** to **one heterozygous** [accept in either order; or **one to one**; or equivalents like **they will be equal**]
[10] Simple genetic cross problems can be solved by constructing squares named for this man. Possible maternal gametes are placed on the left side of his diagram and possible paternal gametes are place on the top.
ANSWER: Reginald Crundall **Punnett**
[10] This sort of genetic expression occurs when both alleles for a given gene locus are expressed in the phenotype. The ABO blood system is an example of this.
ANSWER: **co-dominance** [do NOT accept or prompt on "incomplete dominance"] <GL>

14. One of these objects was stolen by Nader Shah after the battle of Karnal, and resembled a peacock. For 10 points each:
[10] Name this type of furniture. African examples of it include the *pempi* and the sacred Golden Stool of the Ashanti, which had to be held off the ground at all times.
ANSWER: **throne**s
[10] This ruler built the Peacock throne and placed it in the Red Fort in Delhi, also built by him.
ANSWER: Shah **Jahan** [or A'la Azad Abul Muzaffar Shahab ud-Din Mohammad **Khurram**; or ab-ud-din Muhammad **Khurram**]
[10] Shah Jahan ruled this Muslim empire, which was established by Babur at the First Battle of Panipat and built the Taj Mahal.
ANSWER: **Mughal** Empire [or **Mogul** Empire; accept equivalents; prompt on "Gurkani," "Gurkanian Dynasty," or equivalents; prompt on "Timurid," "Timurid Dynasty," or equivalents] <LL>

15. Answer these questions about walls from Greek mythology, for 10 points each.
[10] This city's walls were built when Zethus carried rocks, and his twin brother Amphion played them into place with his lyre. Capaneus later scaled this city's walls among seven men who fought against it.
ANSWER: **Thebes** [or **Thiva**; or **Thebai**]
[10] This city's walls were built by Poseidon and Apollo for its king Laomedon, who got sea-monster'd for refusing to pay for them. Achilles slew this city's champion, Hector.
ANSWER: **Troy** [or **Ilium**; or **Ilion**]
[10] These three figures from Greek myth included Aeacus, a grandfather of Achilles who helped build the walls of Troy, as well as the Cretan brothers Rhadamanthys and Minos.
ANSWER: the **judge**s of the **dead** [or **judge**s of the **underworld**; accept equivalents indicating people who determine the appropriate fate for dead souls] <FM>

16. Answer the following about numerically-named groups in ancient Greece, for 10 points each.
[10] Three hundred Spartans made a last stand at this battle, in which Leonidas "[fought] in the shade" under arrows launched by Xerxes' Persians.
ANSWER: Battle of **Thermopylae** [or Mache ton **Thermopylon**; or **Thermopyles**]
[10] After the Peloponnesian War, a defeated Athens was ruled by Thirty of these non-hereditary, autocratic leaders. Hipparchus and Pisistratus ruled Athens as these people.
ANSWER: **tyrant**s [or **tyrannos**; or **tyrannoi**; prompt on "despots"; do NOT accept or prompt on "kings," "archons," "dictators," "autocrats," "emperors," or any term implying hereditary rule]
[10] This Greek historian chronicled the fighting retreat of the Ten Thousand, a Greek mercenary army in Persia, in his *Anabasis*. This student of Socrates also wrote a biography of Cyrus the Great.
ANSWER: **Xenophon** <JW>

17. One way of defining this operation is by using the limit of a difference quotient. For 10 points each:
[10] Name this operation which, when applied to a function at a point, returns the slope of the tangent line to the function at that point.
ANSWER: **differentiation** [or taking the **derivative**; or word forms of either]
[10] A function with this property has derivatives of all orders, but need not be analytic. The set of functions with this property is typically written "C superscript infinity".
ANSWER: **smooth** [or word forms; prompt on "infinitely differentiable"]
[10] These functions are sums of terms of the form "a times x to the n" and are all smooth. The roots of those of degree 2 are easily found using the quadratic formula.
ANSWER: **polynomial**s <NW>

18. In the first painting in this series, the protagonist is getting fitted for clothes, while rejecting a fiancee who appears later in the series with their child. For 10 points each:
[10] Name this eight-painting series in which Tom's debauchery ends with him locked up in the Bedlam mental asylum.
ANSWER: *A **Rake's Progress***
[10] This English painter, whose moralizing paintings include *Beer Street and Gin Lane* and *Marriage a-la-Mode*, made *A Rake's Progress*.
ANSWER: William **Hogarth**
[10] Hogarth depicted soldiers and a priest looking at a large piece of roast in a work titled for this city. Rodin sculpted six of its citizens offering themselves to Edward III in return for this city's safety.
ANSWER: **Calais** [or **Kales**] <NW>

19. Name these American poets who wrote about cemeteries, for 10 points each.
[10] This "belle of Amherst" described a country cemetery as a "passive place a Summer's nimble mansion." She also wrote "I heard a fly buzz—when I died" and "Because I could not stop for Death."
ANSWER: Emily **Dickinson**
[10] This poet wrote of "The long, mysterious Exodus of Death" in "The Jewish Cemetery at Newport." His longer poems include *Evangeline* and *The Courtship of Miles Standish*.
ANSWER: Henry Wadsworth **Longfellow**
[10] This poet of "Skunk Hour" wrote that "The Lord survives the rainbow of his will" in "The Quaker Graveyard in Nantucket," from the collection *Lord Weary's Castle*. He wrote about Boston Common in "For the Union Dead."
ANSWER: Robert Traill Spence "Cal" **Lowell** IV <JR>

20. Answer these questions about Christian groups or practices which emerged in the Americas, for 10 points each.
[10] This church is the American branch of the Anglican Communion, but doesn't swear fealty to the English king. Its ordination of gay priests such as Gene Robinson led to a bit of an internal schism.
ANSWER: **Episcopal** Church [or **Episcopalian**ism]
[10] Jehovah's Witnesses carry small cards to indicate their refusal of this medical procedure, which is banned due to their interpretation of Genesis 9 and commands against eating a life-carrying substance in Leviticus.
ANSWER: **blood transfusion**s
[10] Further south, this type of heterodox Catholic teaching was pioneered by Gustavo Gutierrez in Latin America. It incorporates Marxist ideas of class struggle.
ANSWER: **liberation theology** <MJ>

21. Apparently, there are three of these things for Muster Mark. For 10 points each:
[10] Name these subatomic particles that come in six varieties, including up and strange. Neutrons are made of three of these particles.
ANSWER: **quark**s
[10] This quark was the last to be discovered, mostly because it is the most massive elementary particle.
ANSWER: **top** quark [or **t** quark]
[10] Since the top quark decays very quickly, it does not have time to form these composite particles. One facility named for these particles recently reported the discovery of an elementary particle of mass about 126 GeV.
ANSWER: **hadron**s [accept Large **Hadron** Collider] <NW>