

## **Bulldog High School Academic Tournament 2015 (XXIV): It's more than good...it's Grace!**

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Edited by Jacob Reed, with Grace Liu

### **Packet 9 Tossups**

1. *[Note to moderator: please read the gray-highlighted text SLOWLY.*

*Also, please read the answerline carefully—it makes some very fine distinctions]*

**Stirling's approximation for factorial has a " $n$  over this number, all to the  $n$ " term. The pdf of the standard normal distribution involves this number to the negative one-half  $x$  squared. The integral from 1 to this number of the function " $1$  over  $x$ " is equal to 1. This number equals the sum, over all the natural numbers  $n$ , of  $1$  over  $n$ -factorial. (\*) It's also the limit, as  $n$  goes to infinity, of the quantity " $1$  plus  $1$ -over- $n$ " to the  $n$ , which you might run into while calculating compound interest. The derivative of " $this\ number\ to\ the\ x$ ", is just " $this\ number\ to\ the\ x$ ." This transcendental irrational is the base of the natural logarithm. For 10 points, name this number approximately equal to 2.718.**

ANSWER:  $e$  [or Euler's number; or Napier's constant; do NOT accept or prompt on any answer with the words "constant" or "Mascheroni," since "Euler's constant" is a different number] <NW/JR>

2. **A failed operation in this region was called the Border Campaign. In a city in this region, nine people were killed in tumult after a 1935 Orange Order parade. A general strike in this region caused the collapse of the Sunningdale Agreement. In a 1981 hunger strike in this region protesting removal of "Special Category Status," Bobby Sands died. Eventually, self-government through "Power-sharing" was restored to this region in the (\*) Good Friday Agreement. A twentieth-century conflict in this region included 1972's "Bloody Sunday," was called "The Troubles," and involved the provisional IRA. For 10 points, name this largely Protestant region of the United Kingdom with capital Belfast.**

ANSWER: Northern Ireland [or Tuaisceart Éireann ["TOO-uh-sh-curt AY-run"]; accept Ulster; prompt on "United Kingdom [of Great Britain and Northern Ireland]" or "U.K." but do NOT accept or prompt on "Ireland," nor on "Britain"] <LL>

3. **One of these people attached torches to the tails of foxes to burn some fields. That one of these people finds a lion carcass filled with honey. Another of them selected an army of 300 men who lapped water like a dog, and put out a fleece to see if it would gather dew. One of them says "The mountains melted from before the Lord" in (\*) her "song." The most famous of these people slew a thousand Philistines with a donkey's jawbone. That one of these people was blinded after losing his strength from having his hair cut off, and was betrayed by Delilah. For 10 points, name this group of Biblical warriors, including Deborah, Gideon, and Samson.**

ANSWER: Judges [or Shoftim] <FM/JR>

4. **In this play, a man finds a bunch of turnips in his pockets. Two characters in this play give each other the nicknames "Gogo" and "Didi." This play begins as a character fails to remove his boot and says, "Nothing to be done." Before becoming mute between acts of this play, one character dances "The Net" and puts on a hat that forces him to (\*) "think." While hanging out beneath a tree, from which they consider hanging themselves, two bowler-hat-wearing characters meet Pozzo, who keeps Lucky on a rope leash. For 10 points, name this play about Vladimir and Estragon, a pair who never see the title character of this work by Samuel Beckett.**

ANSWER: Waiting for Godot [or En attendant Godot] <GL>

5. **One of these events was planned by a lottery winner formerly known as "Telemaque." Another of them**

included an attempted march from the Stono River to Spanish territory. In the aftermath of one of these events, Roger Sherman Baldwin and John Quincy Adams served as lawyers for one party. Another of them ended at Belmont in Southampton County. A rare successful one occurred aboard the (\*) ship *Amistad*. One of them near Richmond was planned by Gabriel Prosser, and one near Charleston was attempted by freedman Denmark Vesey. Often ending with mass lynchings and including one led by Nat Turner, these are—for 10 points—what insurrections feared by Southern plantation-owners?

ANSWER: slave revolts [or slave rebellions; or slave [ship] mutinies; accept equivalents concerning uprisings of slaves; prompt on answers about uprisings which do not mention slaves or slavery] <JW>

6. This man used Divine intervention to explain anomalies that were later accounted for in Laplace's calculus of variations. As part of this man's studies of alchemy, he translated the Emerald tablet, and he thought the world would end after 2060. In his more serious scientific endeavors, he related an object's temperature and the ambient temperature to its rate of (\*) cooling. He gave a mathematical basis to Kepler's laws of planetary motion in his *Philosophiae Naturalis Principia Mathematica*, which also contains his universal law of gravitation. For 10 points, name this English scientist who developed three laws of motion and discovered calculus concurrently with Leibniz.

ANSWER: Sir Isaac Newton <NW>

7. This character sometimes meets his indolent brother at the Diogenes Club, and he fails to rescue Paul Kratides, a man with plaster covering his face. This character, who once spent a morning stabbing a harpoon into a dead pig, notices that a portrait of a cavalier resembles the former schoolmaster Vandeleur. This man used the "curious case of the dog in the night time," to determine the whereabouts of a racehorse. He is menaced by the airgun-wielding Sebastian (\*) Moran, and he apparently dies at Reichenbach Falls with Professor Moriarty. For 10 points, identify this detective whose miraculous deductions are recorded by Dr. Watson, a creation of Sir Arthur Conan Doyle.

ANSWER: Sherlock Holmes [accept either underlined part] <GL>

8. Theocritus claims that this god is stung by bees when he attempts to steal honey, and he accidentally injures his mother while she watches Myrrha's son. This god sits on the lap of Sychaeus' widow while disguised as Ascanius, thereby enchanting Dido. He resurrects a girl who opened a box containing Proserpina's beauty, though that girl had earlier spilled hot lamp oil on (\*) his face. He eventually fathers Hedone, the goddess of pleasure, after he marries Psyche. For 10 points, identify this Greco-Roman son of Aphrodite who shoots arrows to induce feelings of love.

ANSWER: Cupid [or Eros] <GL>

9. One of this author's characters says that "motherhood was invented by someone who had to have a word for it because the ones that had the children didn't care whether there was a word for it or not." Another of his characters breaks a leg when Vernon Tull's bridge collapses. The first section of one of his novels is narrated by a boy whose sister "smelled like trees." A chapter in one of his novels is just (\*) Vardaman saying "my mother is a fish." Another of his novels features the mentally handicapped Benjy, who reminisces about his sister Caddy, and whose brother, Quentin Compson, commits suicide. For 10 points, name this Mississippian author of *As I Lay Dying* and *The Sound and the Fury*.

ANSWER: William [Cuthbert] Faulkner <FM>

10. [Note to moderator (please do **NOT** read this out loud!): the German text in the fourth line is pronounced as follows: "ZAY-lig zint dee dah "lied" TRAH-guhn," where the penultimate word rhymes with "eye"]

This composer's three piano sonatas are in C Major, F-sharp Minor and F Minor, and his three violin sonatas are in G Major, A Major, and D Minor. Late in life, he wrote two sonatas for clarinet or viola and

piano, as well as a B-minor clarinet quintet. This composer used the choral “St. Anthony” in his *Variations on a Theme by (\*) Haydn*. He hated Liszt’s “music of the future,” and Wagner hated this “conservative” composer’s music. One of his choral works begins “Selig sind, die da Leid tragen.” His first symphony, which his friend Clara Schumann disliked, was nicknamed “Beethoven’s Tenth.” For 10 points, name this composer of *A German Requiem* and twenty-one *Hungarian Dances*.

ANSWER: Johannes Brahms <JR>

11. This empire’s irrigation projects included Sudarshana Lake in Kathiawar. Capitals in this empire included Taxila and Ujjain. Megasthenes was an ambassador to this empire. This empire came between the Nanda and the Sunga. A ruler of this empire built a pillar at Sarnath featuring four (\*) lions. This empire’s founder fought off an invasion by Seleucus, and was advised by Chanakya, who might be the Kautilya who wrote the *Arthashastra*. After a bloody conquest of Kalinga, a ruler of this empire decided to promote Buddhism throughout his kingdom. For 10 points, name this Indian empire ruled by Ashoka and Chandragupta.

ANSWER: Mauryan Empire <MW/JR>

12. This nation’s oldest poetry collection begins with the sound of ospreys and describes a “modest, retiring, virtuous young lady.” In David Hinton’s translation, another poet from this nation notes that “A son’s birth means tragedy now,” after describing how “horses stomp and splutter” and “war-carts clatter and creak.” Another poet from this nation described thinking that moonlight at his bed was (\*) frost on the ground. Ezra Pound’s “The River-Merchant’s Wife” is based on a work from this nation, by the author of poems that have been titled “Drinking Alone Beneath the Moon” and “Thoughts in Night Quiet.” For 10 points, name this nation, home to poets like Du Fu and Li Bai.

ANSWER: China [or Zhongguo; accept any answer including either of those, e.g. “People’s Republic of China” or “Tang China”] <JR>

13. Wire-loop lesions in this organ can appear in the focal and diffuse stage of an autoimmune disease. This organ’s medullary pyramids are separated by Bertin columns. Those pyramids empty into a minor calyx, which eventually exits through this organ’s hilum. Function of this organ can be measured by injecting inulin to determine the GFR. (\*) ADH or vasopressin acts on the distal convoluted tubule of this organ, which controls the amount of water reabsorption. It takes fluid through the Bowman’s capsule and loop of Henle in its nephrons. For 10 points, identify this bean-shaped organ which filters blood to produce urine.

ANSWER: kidneys <HX>

14. This philosopher conceived of science as proceeding from self-evident first principles via demonstrative syllogisms. His works are cited using Bekker numbers. He used the example of a doctor to distinguish between empirical “experience” and *techne*, or “art,” in the first chapter of a work that postulates a (\*) “prime mover.” This man described virtues as means between extremes in a work that considers *eudaimonia*, or happiness, as the highest goal. This philosopher founded the Lyceum, and his lectures there were turned into the *Organon* and the *Nicomachean Ethics*. For 10 points, name this Greek philosopher who tutored Alexander the Great and studied with Plato.

ANSWER: Aristotle of Stagira [or Aristoteles] <JR>

15. A party in Belgium espousing this ideology received its support mainly from Catholic farmers and was led by Léon Degrelle, and was called “Rexist.” A Greek regime of this kind promoted a “Third Hellenic Civilization” and took power under Ioannis Metaxas on the 4th of August. A philosophy of it was written by Giovanni Gentile. A proponent of it launched campaigns like (\*) “Battle for Land,” “Battle for Wheat,” and “Battle for Births.” It takes its name from a symbolic bundle of rods used in Ancient Rome. This ideology combined

authoritarianism with crazy-extreme nationalism. For 10 points, a party of what kind led the March on Rome and was founded by Benito Mussolini?

ANSWER: fascism [accept word forms like fascist] <IKD>

16. A building of this kind is briefly invaded by cows and has trouble with dead rats, which sometimes appear in raincoats. At one point, residents of that building lose their voices to a man with a third nostril, though that man's nose is eventually sneezed off and served in spaghetti sauce. One edifice of this type has no (\*) nineteenth floor, which is not home to Miss Zarves. That building's top floor was once populated by Mrs. Gorf, who turned children into apples by wiggling her ears and sticking out her tongue. For 10 points, identify this type of building exemplified by Louis Sachar's *Wayside*, which has one classroom on each of its thirty floors.

ANSWER: elementary schools [or *Wayside school*; accept clear equivalents] <GL>

17. Compounds of these elements are where the Jahn-Teller effect is most commonly encountered. These elements are in the middle of sandwich compounds. Crystal field theory explains the intense colors of coordination complexes with these elements as the central atom. These elements or compounds of them are used as catalysts in the contact process, (\*) Haber process, and in catalytic converters. These are the only elements with partially-filled *d* shells. The oxidation states of these elements are often differentiated with the suffixes "-ous" and "-ic." For 10 points, name these elements in the middle of the periodic table that include nickel and iron.

ANSWER: transition metals [accept transition elements; prompt on just "metals"] <JR>

18. An artist best-known for these paintings often included small and "insignificant" *rückenfiguren*, or people with their backs to the viewer, in them. *The Stages of Life* is an allegorical painting of this kind. Durand's *Kindred Spirits* is a painting of this kind. Camille Corot is best known for his paintings of this kind. Caspar David Friedrich's *Tetschen Altar* was lambasted for basically being one of these paintings. (\*) Romantic artists focused on this kind of painting, often including ruins. Series of this kind of painting include *The Voyage of Life*. Huge ones were made by Albert Bierstadt, Thomas Cole, and other members of the Hudson River school. For 10 points, name these depictions of natural scenery.

ANSWER: landscape painting [or landscape art; accept seascape] <JR>

19. A Mennonite village with this name lies about ten miles south of Belmopan, Belize. One locale of this name anchors the north of the "Knowledge Corridor" and another is the largest drained by the Sangamon River. A town of this name is the most populous individual city in the Ozarks. The Naismith Memorial Basketball Hall of Fame is in one place of this name, whose armory produced years of namesake army (\*) rifles. Historically, one city of this name played host to Shays Rebellion and another was made state capital due to Abraham Lincoln's efforts. For 10 points, give this common U.S. town name, including the largest non-Boston-area city in Massachusetts and the capital of Illinois.

ANSWER: Springfield [or City of Springfield, Illinois; or City of Springfield, Massachusetts; or City of Springfield, Missouri] <JW>

20. This place is home to sculptures like *Winter* and *Apollo Tended by the Nymphs of Thetis*, as well as the *Latona Basin*. The Gobelin tapestry factory was nationalized to decorate it. Lemoyne made a massive painting of Hercules for this place. Jules Mansart planted an orange grove near it. It was designed by Le Nôtre, Le (\*) Brun, and Le Vau. It includes seven apartments corresponding to Roman deities and planets, all centering on the Sun or Apollo. Its gardens include two smaller palaces or "Trianons," and its main building includes a Hall of Mirrors. For 10 points, name this massive palace just outside of Paris, which took its modern form under Louis XIV.

ANSWER: Palace of Versailles [or Château de Versailles] <JR>

*Tiebreaker*

21. Description acceptable. **Caligula backed down from performing this action and collected seashells instead. One instance of this action targeted Dubris and started at Itius Portus. Another instance of it was facilitated by Hobart's Funnies and Mulberry Harbours. It was performed this action in 55 BC after the Veneti were subdued in northern Gaul by (\*) Julius Caesar.** A plan to do this was called Operation Sea Lion. It was done in Operation Neptune, the first phase of Operation Overlord, including the assault of Omaha Beach. For 10 points, name this action conducted by William the Conqueror shortly before the Battle of Hastings.

ANSWER: **crossing the English Channel** [accept any reasonable equivalents; if they give an answer involving invading Britain or France, prompt by saying "What part of the invasion?"; if they give an answer involving "amphibious invasion," "invading across a body of water," etc., prompt by asking "Where?" and see above if necessary] <FM/JR>

## Packet 9 Bonuses

1. The Romans completely razed two cities in the year 146 BC. Name them, and some stuff about them, for 10 points each.

[10] This North African city located in modern Tunisia held out under a three year siege until it was finally taken. That siege of this city is usually called the Third Punic War.

ANSWER: Carthage [or Karthago; be extremely lenient with vowels]

[10] The sack of Carthage was led by a man bearing this family name, an adopted grandson of his namesake, who defeated Hannibal in the Second Punic War.

ANSWER: Scipio [accept any answer containing that; prompt on just “Publius,” “Cornelius,” or “Africanus”]

[10] This other city was sacked in 146 BC by the general Lucius Mummius. It lies on an isthmus in Achaea, which helped it big-time when it came to trade.

ANSWER: Corinth [or Korinthos] <FM>

2. South Africa has three capitals. Name some things about each, for 10 points each.

[10] These *two* bodies of water are not actually divided at Cape Town, South Africa’s legislative capital, but rather at Cape Agulhas, about 100 miles away. Name *both*.

ANSWER: Indian Ocean AND [South/Southern] Atlantic Ocean [accept in either order; do **NOT** accept or prompt on just one answer]

[10] Bloemfontein, the judicial capital, lies just northeast of this desert region of southwestern South Africa. This semi-arid scrubland is divided into “Great” and “Little” portions.

ANSWER: the Karoo

[10] South Africa’s executive capital is this city in the Tshwane Municipality. Situated in Gauteng Province, this city is centered on Church Square and the Palace of Justice.

ANSWER: Pretoria <JW>

3. Early Renaissance altars had some pretty sweet decorations. Name some of them, for 10 points each.

[10] Two answers required. *Maestà* altarpieces, like Duccio’s, center on what two people? Nativity scenes also center on them, often to the exclusion of poor St. Joseph.

ANSWER: Madonna and Child [or equivalents like “The Virgin Mary” and Baby Jesus Christ]

[10] This first great Renaissance artist painted the famous *Ognissanti Madonna* and child.

ANSWER: Giotto di Bondone

[10] Giotto’s *Ognissanti Madonna*, like many of his works, uses a “primitive” version of *this* technique, which was developed by Brunelleschi. Alberti’s *De Pictura* contained the first scientific description of it.

ANSWER: linear perspective <FM>

4. You’re a programmer. Name some banes of your existence, for 10 points each.

[10] This problem might occur when you have too many levels of recursion. Because each function call allocates a new frame, the pointer for where the next frame should go overreaches the stack bounds and causes this.

ANSWER: stack overflow

[10] You might run into one of these if you try to free memory that has already been freed. A process that causes one of these exits with signal 11.

ANSWER: segfault [or segmentation fault]

[10] An off-by-one error, the worst kind of error, is often illustrated with fence posts: if you have 10 fence posts in a line, each placed 1 meter apart, how many meters does the fence span?

ANSWER: nine <HX>

5. In this novel, the artist Lily Briscoe tries to finish a painting of Mrs. Ramsey reading to her son. For 10 points

each:

[10] Name this novel which details James' desire to visit the title structure while he and his family are quartered on the Isle of Skye.

ANSWER: To the Lighthouse

[10] Another novel by the author of *To the Lighthouse* details Clarissa Dalloway's attempt to plan one of these events. During this event, she learns that war veteran Septimus Smith has committed suicide.

ANSWER: a dinner party [prompt on "dinner"; accept any answer involving festivities]

[10] *Mrs. Dalloway* and *To the Lighthouse* are stream-of-consciousness novels by this Bloomsbury Group writer.

She wrote about the necessary conditions for women to write in *A Room of One's Own*.

ANSWER: [Adeline] Virginia Woolf [or Adeline Virginia Stephen] <GL>

6. These kingdoms included the short-lived County of Edessa and the County of Tripoli. For 10 points each:

[10] Name these polities in the Levant. One of them, the Principality of Antioch, was ruled by six Princes named "Bohemond," while others were founded by Baldwin I.

ANSWER: crusader states

[10] The fall of one of the crusader states, the Kingdom of Jerusalem, led to this crusade, which was led by Philip II Augustus. Frederick Barbarossa drowned on his way to this crusade, in which the European forces defeated Saladin.

ANSWER: Third Crusade [or Kings' Crusade]

[10] The English king Richard I also fought in the Third Crusade. Due to his impressive courage and military success, Richard I is better-known by a nickname that suggests he has the "heart" of one of these majestic animals.

ANSWER: a lion [accept Richard the Lionheart; accept Richard Cœur de Lion] <JR>

7. Let's fill in some quotes from first Corinthians, for 10 points each.

[10] Paul claims that this thing is "patient," and "kind," and that it never fails.

ANSWER: love [or charity; or caritas; or agape]

[10] Ever since Paul put away "childish" things, three things remain, one of which is the aforementioned love. Name either of the other two things.

ANSWER: faith or hope

[10] In chapter 15, verse 55, Paul asks *this* rhetorical question of "O death."

ANSWER: "where is thy sting?" [accept any close translations] <JR>

8. Examples of them include the Book of Kells, and they often include richly decorated initial capital letters. For 10 points each:

[10] Name these Medieval manuscripts that are decorated with illustrations and gold and silver inlay.

ANSWER: illuminated manuscript [accept word forms like illumination; accept engrossed and word forms]

[10] An expensive dye in *this* color was made from crushed lapis lazuli and was often used in illuminated manuscripts for rich people.

ANSWER: blue [or ultramarine]

[10] For instance, deep blue ultramarine dye was used all over a "Très Riches" one of *these* books for the Duke of Berry. These books usually included a Christian calendar and a bunch of important prayers and psalms.

ANSWER: book of hours [or horae; or livre d'heures; accept *Les Très Riches Heures du duc de Berry*] <JR>

9. This process is accomplished by microRNA and siRNA. For 10 points each:

[10] Name this kind of gene silencing, in which messenger RNA is destroyed by other RNA.

ANSWER: RNA interference [or RNAi; or ribonucleic acid interference; prompt on just "interference"]

[10] RNA interference occurs before translation and after *this* process, in which RNA polymerase copies DNA into messenger RNA.

ANSWER: **transcription**

[10] Another thing that happens after transcription is this removal of introns by SNRPS [“snurps”].

ANSWER: **splicing** <JR>

10. Some creatures were often at odds with the Aesir. For 10 points each:

[10] Many of these creatures populate the icy realm of Niflheim. The world was formed from the corpse of Ymir, a huge primordial one of these creatures.

ANSWER: **giants** [or frost **giants**; or **jotun**; or **jotnar**; or **ettin**]

[10] This giant dragon sits at the base of Yggdrasil, the tree of life, and constantly gnaws at the roots until it eventually brings about the death of the tree and the end of the world.

ANSWER: **Nidhogg**

[10] This series of catastrophic events at the end of the world includes a huge battle that kills most of the gods and a giant flood that destroys and renews the world for a new age.

ANSWER: **Ragnarok** <FM>

11. This president once said to a delegation of African-American professionals, “Segregation is not a humiliation but a benefit, and ought to be so regarded by you gentlemen.” For 10 points each:

[10] Name this president who also did good things like passing the Clayton Antitrust Act, Federal Reserve Act, and Keating-Owen Act.

ANSWER: [Thomas] Woodrow **Wilson**

[10] Wilson worked hard to promote this international organization, although U.S. entry into this organization was blocked by Henry Cabot Lodge and others. It was replaced by the United Nations.

ANSWER: **League of Nations**

[10] Wilson might have won in 1916 by snubbing Hiram Johnson, a popular governor of *this* state. Earl Warren was governor of this state before becoming Chief Justice.

ANSWER: State of **California** <LL/JR>

12. Everyone loves gas laws! Answer some questions about them, for 10 points each.

[10] Description acceptable. Take a fixed number of moles of an ideal gas. If you double the pressure and halve the volume, what happens to the temperature?

ANSWER: it stays **constant** [accept answers like **no change**, **zero change**, or even just **nothing**]

[10] The ideal gas equation can be derived entirely from kinetic molecular theory. Given the same assumptions, we can also compute this quantity for the gas particles. It is equal to “square root of  $3 R T$  over  $M$ ”

ANSWER: **root-mean-square** speed [or **rms**; accept “velocity” for “speed”; prompt on just “velocity” or “speed”]

[10] Unfortunately, gases aren’t actually ideal. This equation sometimes does a better job of modeling real gases by adding terms containing  $a$  and  $b$  to the ideal gas law.

ANSWER: **Van der Waals** equation. <JR>

13. *Star Wars* videogames are awesome. Answer some questions about them, for 10 points each.

[10] In a 2003 game, you attend the Academy to become one of these good guys of the *Star Wars* universe. They wield blue, green, and yellow lightsabers and use the Light Side of the Force.

ANSWER: **Jedi** Knight

[10] Pandemic developed these games, which have modes like “Galactic Conquest” and, in the second installment, “Rise of the Empire.” You play on the front lines as various troops from the CIS, Republic, Rebellion, or Empire.

ANSWER: *Star Wars*: **Battlefront** [accept specific iterations like **Battlefront II**]

[10] In the first *Star Wars: Knights of the Old Republic*, you’re accompanied by this female Jedi, who used her “Battle Meditation” to capture Darth Revan.

ANSWER: **Bastila Shan** [accept either] <JR>



14. One of his works includes awesome musical depictions of scenes like “there came all manner of flies and lice in all quarters.” For 10 points each:

[10] Name this composer of choruses like “See the conquering hero come” and instrumentals like “The Arrival of the Queen of Sheba.”

ANSWER: George Frideric Handel [accept any similar pronunciations, especially “Hendel”]

[10] Handel is most famous for this oratorio about the life of Jesus. It includes the “Hallelujah Chorus.”

ANSWER: Messiah, HWV 56 [accept either underlined part]

[10] The third part of *Messiah* includes the bass aria “The [*this instrument*] shall sound.” Most baroque works including these instruments are in D Major, since the older version of this brass instrument did not have valves.

ANSWER: trumpets [accept “The trumpet shall sound”] <JR>

15. This author imagined a machine developed by the Old Commandant; that machine stabs the Officer instead of inscribing “Be Just” on his skin. For 10 points each:

[10] Identify this author who depicted a civilized ape in “A Report to the Academy” and wrote “The Judgment” and “Jackals and Arabs.”

ANSWER: Franz Kafka

[10] This novella by Kafka focuses on Gregor Samsa, a traveling salesman who wakes up one morning as a giant “monstrous vermin.”

ANSWER: *The* Metamorphosis [or *Die Verwandlung*]

[10] Gregor’s back becomes horribly inflamed after one of these objects is thrown at him by his father. This object gets imbedded in his exoskeleton and rots, causing his death.

ANSWER: apples <GL>

16. His namesake scattering is proportional to the fourth power of the cosecant of half the scattering angle of the incoming alpha particles. For 10 points each:

[10] Name this physicist who proved that atoms have nuclei in the gold foil experiment.

ANSWER: Ernest Rutherford, 1st Baron Rutherford of Nelson

[10] The Rutherford gold foil experiment was actually carried out by Ernest Marsden and this man. He also names a common device for measuring radiation.

ANSWER: Hans Geiger [or Johannes Wilhelm Geiger]

[10] Arthur Compton won a Nobel prize for discovering *this* kind of scattering of a photon by an electron. This property in Compton scattering differentiates it from Thomson scattering.

ANSWER: inelastic [do NOT accept or prompt on “elastic”] <NW>

17. The Greeks sure liked their plays. Answer some questions about them, for 10 points each.

[10] The Old style of *this* genre of Greek plays often included prominent men in the audience. The later New style was adopted by Menander and copied by Romans like Terence.

ANSWER: comedy

[10] This man, the master of Old Comedy, graced his audiences with ancient poop and fart jokes in *The Birds*, *The Frogs*, and *The Knights*.

ANSWER: Aristophanes

[10] In Aristophanes’ *The Clouds*, this man tries to outsmart his debtors by learning logic at Socrates’ Thinkery and worshipping the title goddesses.

ANSWER: Strepsiades <FM>

18. This country secured independence from colonial powers for 40 years, after its forces under Menelik II beat Italy at the 1896 Battle of Adwa. For 10 points each:

[10] Identify this northeast African nation that would later be occupied by Benito Mussolini's Italy in 1936.

ANSWER: Ethiopian Empire [or Mangesta It'op'p'ya; or Abyssinia; or People's Democratic Republic of Ethiopia]

[10] This last Ethiopian emperor took the throne in 1930 but was deposed by the Derg, a communist junta, in 1974.

ANSWER: Haile Selassie I [or Ras Tafari Makonnen Woldemikael]

[10] This country secured its independence from Ethiopia in 1993 after a 29 year armed insurgency by the EPLF, headed by Isaias Afwerki.

ANSWER: State of Eritrea [or Hagere Ertra; or Dawlat Iritriya] <MW>

19. Per an authorial illustration, these creatures look like toilet plungers with a hand on top and an eye within the hand. For 10 points each:

[10] Identify this alien race that can see in the fourth dimension of time. They intone, "So it goes," whenever anyone dies.

ANSWER: Tralfamadorians [or aliens from Tralfamadore]

[10] This soldier is present during the firebombing of Dresden. He is kidnapped by the Tralfamadorians after he becomes "unstuck in time" and has a child with Montana Wildhack.

ANSWER: Billy Pilgrim [accept either underlined part]

[10] Billy Pilgrim's spatiotemporal adventures feature in this author's novel *Slaughterhouse-Five*.

ANSWER: Kurt Vonnegut, Jr. <GL>

20. She gave special privileges to third-graders with a certain eye color, such as extra recess time and seconds at lunch. For 10 points each:

[10] Identify this schoolteacher who artificially created a racism-like experience with her blue eyes-brown eyes exercise.

ANSWER: Jane Elliott

[10] Another study of racism found that African-American children attending segregated schools preferred playing with the white one of these toys. A "Bobo" one of them was used by Albert Bandura in his study of social learning.

ANSWER: dolls [or Bobo doll]

[10] Many white individuals have a subconscious preference for white individuals over black individuals, as demonstrated by IATs, which test the "implicit," "automatic" kind of this phenomenon.

ANSWER: associations [accept implicit association; accept Implicit Association Test] <HX>

### *Tiebreaker*

21. According to this principle, if an equilibrium has more moles of gas on the left side, then increasing the pressure favors the products. For 10 points each:

[10] Name this chemical principle that basically states that an equilibrium always shifts to counteract a change.

ANSWER: Le Châtelier's principle

[10] In reactions of *this* type, if you increase the temperature, the equilibrium shifts to the right, favoring the products.

ANSWER: endothermic

[10] Description acceptable. Using Le Châtelier's principle, what is generally the effect on an equilibrium if you add a catalyst?

ANSWER: no effect [accept any answer that describes no change; the catalyst works on both sides of the reaction equally] <JR>