

Brookwood Invitational Scholars' Bowl

Round 11

Written and edited by Zach Billett, Mostafa Bhuiyan, Joseph Reifenberger, Adam Silverman, Brady Weiler, and Jacky Zhu

Tossups

1. **Spyridon Louis gained his fame at this event. The Zappas cousins funded this event, which was planned to occur on the 75th anniversary of an Ottoman massacre in Constantinople. This 19th century event was attended by newly crowned King George I and was planned by Pierre de Coubertin [coo-bare-TAW]. In a public park named for this event's hundred-year anniversary, Eric Rudolph set a bomb in (*) Atlanta. The marble Panathenaic [pan-uh-the-NAY-ick] Stadium was constructed for this event. This event, the first put on by the IOC, occurred in April 1896. For 10 points, name this event which popularized the modern marathon, and symbolically took place in Greece.**

ANSWER: 1896 Athens Summer Olympics [or the 1896 Olympics until it is read; or the first modern Olympics; accept Olympic Games instead of Olympics in any answer]

2. **This book is often published with an epistle written to Cangrande [can-GRAWND]. A painting used as this book's cover depicts its author wearing a red robe, holding this book, under a starlit sky. William Blake's watercolors popularized this book, which was translated into English by Longfellow. This work, set during the week of (*) Easter, is written in an extended rhyme scheme of ABABCBCDC, in one hundred total cantos of *terza rima* [TURR-zuh REE-muh]. Its first section describes symbolic punishment of crimes. Beatrice and Virgil serve as the narrator's guides in this poem. For 10 points, name this epic in Italian consisting of the *Paradiso*, *Purgatorio*, and *Inferno*, written by Dante.**

ANSWER: *The* Divine Comedy [or the Divina Commedia; prompt on Inferno; prompt on Purgatorio; prompt on Paradiso]

3. **This object's theme consists of descending A minor thirds for four notes, which then reverse and ascend. A four-minute E-flat drone begins an opera titled for this object. The character who creates this object is forced to renounce love by some river-maidens. After this object and Tarnhelm are stolen, the (*) "Death-Curse" motif is first heard. A fight over it leaves Hagen drowned and causes the rest of the gods to die in an inferno. A giant who possesses this object turns into a dragon. This object is created by the dwarf Alberich in *The Rhinegold*. For 10 points, name this object which titles an operatic cycle including *Siegfried* and *The Valkyrie* by Richard Wagner.**

ANSWER: the Ring of the Nibelungs [or *Der* Ring *des Nibelungen*; or *Das Rheingold* or *The Rhine* Gold until it is read, since the Ring is made from the Rheingold]

4. **This action is performed by Iranians on Chahar Shanbe Souri, the Persian New Year. This action is done on Holika Dahan, the night before Holi. Jews cut their hair and perform this tradition on Lag B'Omer [LOG buh-OWE-mare]. This action is done in Spain on June 23 to celebrate Saint John. During the evening, Hindus celebrate Lohri [LOW-ree] by performing this action while praying to (*) Agni. Pagans celebrated Walpurgis Night by performing this action, then jumping, in order to ensure fertility. Every November 5, the English perform this action to commemorate Guy Fawkes Day. For 10 points, name this activity which is often used to destroy effigies.**

ANSWER: setting bonfires [or setting fires; or lighting fires; or burning effigies; prompt on fireworks; or jumping over fires; accept any equivalents that involve fires]

5. **Water gas is formed by passing steam over this element. This element forms the anode in the Hall-Heroult process. Ionic salts of it with silicon and boron are two of the hardest known compounds. The "activated" form of this element is used to purify water. This element is produced when sulfuric acid dehydrates glucose. Andre Geim [GYME] used Scotch tape to isolate a (*) 2D form of this element. This element forms a 60-atom cage with pentagonal and hexagonal faces that was named for architect R. Buckminster Fuller. An isotope of this element has a half-life of 5760 years. For 10 points, name this element whose allotropes include graphite and diamond.**

ANSWER: carbon [or C]

6. The phrase “There once was a girl known by everyone and no one” is hidden in this song’s lyrics. This song’s music video shows its singer tearing up shirts and swinging a golf club at a car. Its speaker says that she “could make all the tables turn” before calling herself a (*) “nightmare dressed as a daydream.” In its chorus, the singer worries they’ll “take this way too far,” and that the addressee will leave “breathless/or with a nasty scar.” This song’s artist wrote it as a parody of the media’s coverage of her and ex-boyfriends like Harry Styles. For 10 points, name this track off *1989* by Taylor Swift, in which the title object is where she’ll “write your name.”

ANSWER: “Blank Space”

7. A character in this novel dreams that a woman tears a veil by her bedside in two, then wakes up to find the veil actually torn. This book begins, “There was no possibility of taking a walk that day”, so the narrator sits reading behind a curtain, then gets sent to the red-room. Its protagonist refuses to be a missionary in India with (*) her long-lost cousin. A character in this novel goes blind during a fire at Thornfield. *The Madwoman in the Attic* is based on its character Bertha Mason. In this novel, published under the pseudonym “Currer Bell”, Edward Rochester falls in love with his governess. For 10 points, name this novel by Charlotte Bronte.

ANSWER: Jane Eyre

8. This man signed letters as Charles d’Espeville. Followers of this man called Monarchomachs were early advocates for popular sovereignty. This man left his homeland with Niccolus Cop after undergoing a *subita conversione*. He popularized the ideas of total depravity and unconditional election. This man’s actions led to Michael (*) Servetus’s death at the stake. Guillaume Farel convinced this man to move to Geneva, where he set up a theocracy. This man’s ideas on predestination are included in his tract *Institutes of the Christian Religion*. For 10 points, name this Protestant contemporary of Luther and Zwingli.

ANSWER: John Calvin [or Jean Calvin]

9. One of these devices was oriented at 7 degrees relative to the canal ray tube in an experiment that proved time dilation. These devices surround the gain medium in lasers. They were placed at the center and at the ends of the arms of the Michelson interferometer. Two divided by the radius of (*) curvature of these devices equals one over the distance to the object, plus one over the distance to the image. Planar ones always produce virtual images of the same size. These devices are silvered, and they always invert an object from left to right. For 10 points, name these devices which reflect light.

ANSWER: mirrors [or specific types of mirrors]

10. The nonprofit Generation Rescue opposes this activity. The documentary *Trace Amounts* is about it. California’s SB 277, signed in June 2015 and protested vigorously by Jim Carrey, concerned this activity. A paper in *The Lancet* by Andrew Wakefield about this practice made the fame of Jenny (*) McCarthy. A fake organization devoted to this activity was established by the CIA in Abbottabad in 2011. The mercury-containing preservative thimerosal [thigh-MARE-oh-sawl] was unfairly used to link this practice to autism. Opponents to it caused a 2015 scare at Disneyland. For 10 points, name this procedure of inoculating children against disease.

ANSWER: vaccination [or giving vaccines; or inoculation; or mandatory vaccination for going to school; or equivalents like getting a shot; or specific vaccines like MMR vaccine, HPV vaccine, flu vaccine, measles vaccine, etc.]

11. Cartoons made after this election include one where Uncle Sam presses on a man reaching for his gun, and one in which a bandaged elephant moans, “Another such victory and we are undone”. David Davis became governor of Illinois during this election. South Carolina, Louisiana, and Florida were the three (*) unredeemed states in this election. Ten Congressmen and five justices formed the Electoral Commission that decided it. The loser of this election, a New York governor who fought Tammany Hall, was Samuel Tilden. For 10 points, name this election which ended Reconstruction in exchange for Rutherford Hayes winning the White House.

ANSWER: Election of 1876

12. This author wrote a poem that says, “Hieronymo’s mad againe. Datta. Dayadhvam. Damyata.” A poem by this author repeats, “For Thine is the Kingdom” and declares, “There are no eyes here/In this valley of dying stars.” One of his speakers says, “That is not what I meant, at all” and admits there is time for “a hundred visions and (*) revisions.” This poet listed seven tarot cards in the section “The Burial of the Dead.” He described an evening like a “patient etherized upon a table.” This author wrote, “This is the way the World ends” in “The Hollow Men.” For 10 points, name this author who wrote “April is the cruelest month” in “The Waste-Land.”
ANSWER: TS Eliot [or Thomas Stearns Eliot]

13. In Book X [ten] of the *Metamorphoses*, this man tells the stories of Hyacinthus and Pygmalion. This hero cures Tantalus’ thirst momentarily. Zagreus is a god in this man’s namesake Dionysus-inspired mysteries. This man is immune to thrown stones, but is eventually torn limb from limb by maenads until his severed head floats down a river. His wife dies after stepping on a (*) snake. The Argonauts survive the sirens thanks to this hero. This son of Calliope convinces Charon to ferry him without payment, but he looks back on the way out of the Underworld, dooming Eurydice forever. For 10 points, name this greatest of the Greek musicians.
ANSWER: Orpheus

14. During this process, the filiform apparatus guides cells into the synergids. Charles Darwin’s 1862 book introducing co-evolution used this process as its example. This process proceeds via elongation of a namesake tube through the micro-pyle. This process involves only one organism in cleistogamy [CLY-stawg-uh-me], which is fairly rare due to self-incompatibility. Colony (*) collapse disorder threatens a major vector of this process. Gregor Mendel did the “cross” form of this technique on pea plants. In this process, cells produced in the stamen are transferred to a stigma. For 10 points, name this process accomplished by honeybees, which fertilizes flowering plants.
ANSWER: pollination [or word forms; or fertilization until it is read; prompt on plant reproduction or similar answers; accept any answers involving pollen such as pollen tube growth]

15. In a self-portrait, this artist painted himself with enormous brown pupils in front of a brown-yellow background. This artist penciled in a tall, spindly horse, being ridden by a gaunt figure with a lance and shield, in a sketch which has windmills in the background. This man drew a dove holding an olive branch for an international (*) peace symbol. This artist embraced primitivism in a painting of five angular, nude prostitutes. A lightbulb surrounded by jagged edges is at the top of a massive black-and-white painting by this artist which shows a horse in agony. For 10 points, name this Spanish painter of *Les Demoiselles d'Avignon* and *Guernica*.
ANSWER: Pablo Picasso

16. The Thach Weave and the “big blue blanket” maneuvers were developed to combat this country. Operation Cartwheel destroyed its base at Rabaul. This country’s G3M aircraft, known as the “Nell”, destroyed the HMS *Repulse* and *Prince of Wales*. The Clark Air Base was captured from this country. Article 9 of its constitution, which was written by (*) Americans, renounces its right to war. Its Zero aircraft were more agile than the Spitfire. The Battle of Leyte [LAY-tay] Gulf destroyed this country’s navy. It lost two fleet carriers at Coral Sea, which led to its defeat at Midway. For 10 points, name this country whose *kamikaze* pilots fought in WWII.
ANSWER: Imperial Japan [or Nippon]

17. The square of this quantity equals the expectation of X squared minus the square of the expectation of X. GE developed an industrial quality benchmark symbolized by six times this quantity. This quantity times the Z-score is used to calculate a confidence interval. The “sample” and “population” forms of this quantity use N-1 and N in the (*) denominator, respectively. This quantity is the square root of the central second moment. The empirical rule sets 68, 95, and 99.7% of the data within one, two, and three times this quantity away from the mean. For 10 points, name this square root of the variance, a measure of data spread symbolized sigma.
ANSWER: standard deviation [or sigma until it is read; or Six Sigma; accept uncertainty until “Z-score” is read; prompt on s]

18. **This thinker hypothesized a contest in which the people who pick the most popular option win. This man attacked general equilibrium theory by pointing out that, “in the long run, we’re all dead.” He first noted that prices and wages take time to adjust to market changes, making them (*) “sticky”. This thinker argued that aggregate demand, not aggregate supply, shapes the economy, a view opposed by supply-side economics. This man inspired FDR with his advocacy of deficit spending to break out of the Depression. For 10 points, name this British economist and author of the *General Theory*.**

ANSWER: John Maynard Keynes

19. **Despite its title, Edouard Lalo’s *Symphonie Espagnole* is actually a work in this form. An 1844 work in this form broke convention by having an ascending solo passage open the piece without a unison entrance. Felix Mendelssohn wrote an E minor work in this form. Niccolò (*) Paganini wrote and performed six works in this form, his second of which is known as “La Campanella.” Brahms’ only work in this form was dedicated to and premiered by Joseph Joachim. A set of four of these works named “Spring,” “Summer,” “Fall” and “Winter” were composed by Antonio Vivaldi. For 10 points, name this form for a solo string instrument and orchestra.**

ANSWER: violin concerto [or violin concerti; prompt on “work for violin”; prompt on concerto]

20. **This author created a policeman who arrests his best friend of twenty years after recognizing his face from a wanted ad. This author wrote about a character who promises not to die until all the leaves fall off a vine, so an artist paints a leaf in place. One of this author’s characters fails to get arrested until he loiters in front of a church. Two (*) kidnappers pay a father to take back his bratty son in another story by this author. This writer described a woman who sells her hair to buy a chain, and her husband, who sells his watch to buy a comb, in a Christmas story. For 10 points, name this author of “The Gift of the Magi” and other stories with surprise endings.**

ANSWER: O’Henry [or William Sydney Porter]

TB: **A man with this surname names the equation that sets magnetization inversely proportional to temperature, and died when a carriage cracked open his skull. Frederic Joliot [JOLL-ee-oh] and a scientist with this surname discovered alpha decay. A non-SI unit equal to 37 billion becquerels has this name. The point at which (*) magnetic domains align without an external field is named for a physicist with this surname, and defines the transition from ferro-magnetism to para-magnetism. The first female professor at the Sorbonne married into this last name and discovered radium. For 10 points, give this surname of Nobel Laureates Pierre and Marie.**

ANSWER: Curie family

Bonuses

1. Gelatin is formed by hydrolyzing this protein indiscriminately. For 10 points each:

[10] Name this fibrous protein found in connective tissue, the most abundant protein in the human body.

ANSWER: collagen

[10] The hydroxylation of proline in collagen synthesis requires the presence of this vitamin, which is found in citrus fruits and is deficient in patients with scurvy.

ANSWER: Vitamin C [or ascorbic acid]

[10] Collagen takes on its unusual triple helical shape at this level of protein structure. This level of protein structure determines how folded polypeptide chains interact with each other.

ANSWER: quaternary structure [or 4]

2. Leon Battista Alberti made this idea famous in his *De pictura*. For 10 points each:

[10] Name this method of approximating 3D images in two dimensions, using either one point or two points.

ANSWER: geometric perspective [or linear perspective]

[10] In one-point perspective, all parallel lines will eventually converge at this location. In da Vinci's *The Last Supper*, this point is located right behind Christ's head.

ANSWER: vanishing point

[10] This Renaissance artist invented perspective. He lost in the finals in the competition to design the doors to the Florence Baptistery to Ghiberti, which made him so angry that he quit sculpture and decided to take up architecture.

ANSWER: Filippo Brunelleschi

3. Thomas Fairfax led the military wing of this man's operations. For 10 points each:

[10] Name this Englishman who orchestrated the dissolution of the Long Parliament with Pride's Purge.

ANSWER: Oliver Cromwell

[10] The period of Oliver Cromwell's rule as "Lord Protector" happened after this series of conflicts fought between Roundheads and Cavaliers. This war led to the execution of Charles I.

ANSWER: English Civil Wars

[10] Pride's Purge negatively impacted this political movement, which opposed the *grandees* and whose members were called Agitators. This group behind the "Agreement of the People" had a main platform of social equality.

ANSWER: Levellers

4. This faculty is divided into steps for encoding, storage, and retrieval. For 10 points each:

[10] Name this ability extensively studied by Hermann Ebbinghaus. Amnesiacs lack the short-term form of this ability.

ANSWER: memory [or short-term memory]

[10] According to Ebbinghaus' serial position effect, when asked to remember a series of items, people are least likely to remember information about items in this position.

ANSWER: the middle [or intermediate positions; or obvious equivalents]

[10] In a paper titled for the "magical number", George A. Miller proposed that average humans can hold only this many objects in their working memory at a time. Give your answer as the commonly accepted range of numbers.

ANSWER: seven plus or minus two [or between five and nine; or obvious equivalents; prompt on seven]

5. This poem's speaker says, "We sing, but oh the clay is vile/Beneath our feet, and long the mile." For 10 points each:

[10] Name this poem by Paul Laurence Dunbar about an object that "grins and lies/hides our cheek and shades our eyes."

ANSWER: "We Wear the Mask"

[10] Dunbar ended his poem "Sympathy" with this seven-word phrase, after describing an animal that "beats his wing/Till its blood is red on the cruel bars." This phrase also titles a 1969 memoir partly set in Arkansas.

ANSWER: "I know why the caged bird sings" [do not accept or prompt on partial answers]

[10] This African-American poet used the line from Dunbar as the title of her autobiography. She read a poem at Bill Clinton's inauguration

ANSWER: Maya Angelou [or Marguerite Annie Johnson]

6. Name some things that nineteenth-century German philosopher Arthur Schopenhauer liked, for 10 points each:
[10] Schopenhauer really liked ancient philosophical texts, like the Vedas and Upanishads, from this present-day nation.

ANSWER: Republic of **India** [or **Bharat Ganarajya**]

[10] Schopenhauer was a fan of the idea that all of human nature and human desires could be linked to this concept, which he paired with representation in the title of a treatise. Nietzsche wrote about this thing “to power”.

ANSWER: the **Will** [or **will to power**; or the **will to live**; do not accept or prompt on “free will”]

[10] Schopenhauer liked being right, and, in *The Art of Being Right*, he discussed *petitio principii*—or *this* logical fallacy. This form of circular reasoning uses the conclusion of an argument as proof for the premise.

ANSWER: **begging the question** [prompt on **circular reasoning** or **circular logic**]

7. These people made up the “middle class” in medieval society, between the peasantry and the clergy. For 10 points each:

[10] Name these people who obeyed the code of chivalry and fought in battles for their lords.

ANSWER: **knights** [prompt on **vassals**]

[10] For fighting for their lords or for the king, knights could be given these parcels of land, which were farmed by peasants.

ANSWER: **fiefs**

[10] The modern conception of a knight owes much to these warriors in Charlemagne’s army, many of whom died at Roncevaux Pass. These semi-mythical knights were sometimes called the Twelve Peers.

ANSWER: **paladins**

8. This man sculpted a bright red statue placed right in front of Mies van der Rohe’s black steel Kluczynski [clue-SIN-skee] Federal Building. For 10 points each:

[10] Name this American who sculpted *Flamingo*, a stabile, for a public spot in Chicago.

ANSWER: Alexander **Calder**

[10] This man designed Chicago’s Midway Plaisance with Lorado Taft. This landscape architect also created the winning Greensward Plan for New York’s Central Park, which he designed with Calvert Vaux.

ANSWER: Frederick Law **Olmsted**

[10] This American architect designed the Emil Bach House and the Robie House in Chicago. This giant of American architecture also designed *Fallingwater*.

ANSWER: Frank Lloyd **Wright**

9. Answer the following about the strange orbit of Mercury around the Sun, for 10 points each:

[10] This quantity for Mercury is approximately 88 Earth days, or one-and-a-half Mercury days. This quantity is the time it takes for a planet to orbit the Sun.

ANSWER: orbital **period** [or astronomical **year**; or **revolution**]

[10] Mercury sports the largest value for this quantity of any planet. This quantity is the ratio between semimajor axis and distance to the focus in an elliptical orbit, and would be zero for a circle.

ANSWER: **eccentricity**

[10] A classic proof of general relativity was the precession of this point in the orbit of Mercury. This point is the closest approach an object in elliptical orbit has to the focus.

ANSWER: **perihelion** [or **periapsis**]

10. This character falls flat dead the day after he finally encounters Rodolphe, thus abandoning his daughter Berthe to work in a cotton-mill. For 10 points each:

[10] Name this character who marries Heloise Dubuc after ignominiously graduating with a medical degree. The narration abruptly switches from this character’s perspective to that of his second wife in Chapter Five.

ANSWER: **Charles** Bovary [or Charles **Bovary** or Monsieur **Bovary** or similar answers]

[10] This French realist wrote *Madame Bovary*.

ANSWER: Gustave **Flaubert**

[10] Flaubert’s search for “le mot juste”, or “just the right word”, influenced this student of his. This much more prolific author created strong female characters like Elizabeth Rousset and Mathilde Loisel in his short stories.

ANSWER: Guy de **Maupassant**

11. *Dapanji* is a popular chicken stew in this region. For 10 points each:

[10] Name this largest autonomous region of China, in the far northwest, which is Muslim and inhabited by Uighurs [WEE-gurs].

ANSWER: Xinjiang Uighur Autonomous Region

[10] Xinjiang [shin-JANG] is the site of the Aksai Chin, a region disputed between China and this neighboring nation. This country's district of Jammu is separated from China, in the north, by the Line of Actual Control.

ANSWER: Republic of India

[10] The northernmost state of India is named for Jammu and this other region, which is the subject of a constant feud with Pakistan. The namesake goats of this region provide high-quality wool.

ANSWER: Kashmir

12. Name some civilizations that Jared Diamond described in his 2005 book *Collapse*, for 10 points each:

[10] The mysterious decline of this Mesoamerican civilization in the tenth century is variously attributed to invasion by the Toltecs, climate change, or the decline of Teotihuacan.

ANSWER: Mayas [or Mayan civilization]

[10] This historical culture in the modern-day southwestern United States fell apart due to a massive drought beginning in the twelfth century. They built Mesa Verde.

ANSWER: Pueblo people [or the Puebloans; or the Pueblos; or the Anasazi]

[10] More recently, this remote island's population has collapsed down to less than 100 inhabitants after it was battered by emigration. The last British territory in the Pacific, it was first settled by Fletcher Christian.

ANSWER: Pitcairn Island

13. A particle explodes in midair, splitting into two separate particles of equal mass. For 10 points each:

[10] The velocity of the first particle must be oriented exactly opposite the velocity of the second particle, a consequence of this law, which holds true in the absence of any external forces in the system.

ANSWER: law of conservation of linear momentum [prompt on partial answer]

[10] If the collision is elastic, then the total amount of this quantity must also be conserved. This form of energy is usually given as one-half times mass times velocity squared.

ANSWER: kinetic energy [or K; or T]

[10] This scientist's namesake "cannon" consists of a tower of balls that collide elastically. His namesake transformations between moving frames are generalized to the relativistic case by Lorentz transformations.

ANSWER: Galileo Galilei

14. This poem was written in twelve books in a clear homage to Virgil. For 10 points each:

[10] Name this poem which attempts to "justify God's ways to man", and largely describes the activities of Satan after he loses a war against heaven.

ANSWER: Paradise Lost

[10] *Paradise Lost* is the masterpiece of this blind English author.

ANSWER: John Milton

[10] Milton's inferior follow-up to *Paradise Lost*, *Paradise Regained*, largely describes this Biblical event. Nikos Kazantzakis wrote a frequently-banned book titled for this New Testament event.

ANSWER: the temptations of Christ [or the last temptation of Christ; accept obvious equivalents like Satan tempting Jesus]

15. This composer set Yevgeni Yevtushenko's poetry to music in his *Babi Yar Symphony*. For 10 points each:

[10] Name this Soviet composer who used his own music from *Lady Macbeth of the Mtsensk District* in a symphony depicting the siege of Leningrad.

ANSWER: Dmitri Shostakovich

[10] This name is given to the 22-bar march with a repetitive snare drum ostinato in the *Leningrad Symphony*'s 25-minute *allegretto* opening movement, which is meant to represent the entrance of Hitler's troops into Leningrad.

ANSWER: the "invasion" theme

[10] Shostakovich said that he expected critics to accuse him of copying the snare drum ostinato of this Maurice Ravel orchestral piece for the "invasion theme." This piece is essentially just a 16-minute crescendo.

ANSWER: Boléro

16. The unanimously-passed Boland Amendment prevented funding of this group. For 10 points each:

[10] Name this anti-Communist group which received funds diverted from an arms deals with Iran.

ANSWER: Nicaraguan **Contras**

[10] The Iran-Contra affair rocked this president's White House. This Republican held the presidency for most of the 80s.

ANSWER: Ronald **Reagan**

[10] The Boland Amendment and subsequent backlash against Reagan during the Iran-Contra affair were

spearheaded by this Democratic Speaker of the House, a Massachusettan who held the office from 1977 till 1987.

ANSWER: Tip **O'Neill** [or Thomas Philip **O'Neill**]

17. Answer the following about fairies, for 10 points each:

[10] In European folklore, fairies often replaced human children with these creatures, who grew up to cause all sorts of mischief.

ANSWER: **changelings**

[10] In Marie de France's lay "Lanval", Lanval's seduction by a fairy angers this woman, who is trying to get at Lanval too. This woman couldn't keep her hands off Lancelot even though she was married to King Arthur.

ANSWER: Queen **Guinevere**

[10] This sorceress carries King Arthur off to Avalon after he is killed at Camlann. Arthur's half-sister, her surname refers to the fact that she is actually part-fairy.

ANSWER: **Morgan** le Fay [or **Morgana**; or close phonetic equivalents; do not accept or prompt on "Morgause"]

18. This author included "Dulse" and two stories titled for the Chaddeleys and Flemings in her short story collection *The Moons of Jupiter*. For 10 points each:

[10] Name this contemporary short story author who also wrote the collection *Dance of the Happy Shades*.

ANSWER: Alice **Munro**

[10] Munro's story "Dulse" centers on a woman who visits the vacation home of this much earlier American author. This author's short story output includes "Paul's Case", but she's better known for novels like *The Song of the Lark*.

ANSWER: Willa **Cather**

[10] *The New Yorker* has published many of Alice Munro's stories, though none attracted as much attention as this Shirley Jackson story, about a town that stones unlucky participants in an annual celebration.

ANSWER: "The **Lottery**"

19. You know what they say: if your model for a non-ideal gas doesn't fit, add empirical parameters until it does! For 10 points each:

[10] The gas constant, symbolized by this letter, is the only other parameter in the ideal gas law. The law is often written as PV equals n times this letter times T.

ANSWER: **R**

[10] This man names a terrible cubic equation of state which has two empirical parameters. He also lends his name to a set of intermolecular forces caused by both instantaneous and permanent molecular dipoles.

ANSWER: Johannes Diderik **van der Waals** [or **van der Waals**' equation; or **van der Waals** force]

[10] The Benedict-Webb-Rubin equation has *eight* empirical parameters, but simplifies to the ideal gas law when this quantity is small. The ideal gas law predicts this quantity equals pressure times molar mass over RT.

ANSWER: vapor **density** [or **rho**; or **D**]

20. This man served as Afghanistan's head of state for five years until 2001. For 10 points each:

[10] Name this man who died of tuberculosis in 2013 but was only officially declared dead in summer 2015, when he was succeeded by Akhtar Mansoor.

ANSWER: Mohammed **Omar** [or Mullah **Omar**]

[10] Omar led this fundamentalist Muslim organization in Afghanistan until his death. It was overthrown from political power during the American invasion of Afghanistan in 2001.

ANSWER: **Taliban**

[10] In 2015, President Obama appointed Afghanistan war vet Joseph Dunford to this office, to succeed Martin Dempsey. This office is the main advisor to the president on military issues.

ANSWER: **Chairman of the Joint Chiefs** of Staff [or **CJCS**; prompt on partial answer]