1. This author depicted the aftermath of the Appin Murder in his novel *Catriona,* a sequel to his novel in which Alan Breck flees from the government with David Balfour. The prosecutor Gabriel John Utterson seeks out a man who assaulted a young girl in another of his novels. This author of *Kidnapped* created Jim Hawkins and Long John Silver. For 10 points, name this Scottish novelist of *Strange Case of Dr. Jekyll and Mr. Hyde* and *Treasure Island.*
ANSWER: Robert Louis **Stevenson**

014-13-96-07101

2. For a subset E of the real numbers, if this number, as well as this number plus x for all x in E, are in E, then E is called an inductive set. Two numbers are relatively prime if their greatest common divisor is this number. The sum of the probabilities of an event A and its complement is equal to this number. Evaluating the sine of pi over two radians yields this number, and the unit circle has a radius of this length. For 10 points, the multiplicative inverse is equal to what smallest positive integer?
ANSWER: **one**

149-13-96-07102

3. Two opposing forces during this war were defeated in separate battles by the Ottoman Empire, at the River Bender and the River Pruth. An empire in this war was initially allied to Frederick the Strong of Saxony and had to rebuild its army after a defeat at Narva. The losing empire in this war had to agree to the Treaty of Nystad after its army was smashed at the Battle of Poltava. For 10 points, name this war in which Peter the Great of Russia and his allies defeated Charles XII of Sweden.
ANSWER: **Great Northern** War

153-13-96-07103

4. This poet asserted, "If the doors of perception were cleansed, every thing would appear to man as it is, infinite." This author's long poems include *Visions of the Daughters of Albion* and *Jerusalem,* both examples of his illuminated "prophecies." He included lyrics such as "The Poison Tree" and "The Sick Rose" in his *Songs of Innocence and of Experience,* one of which describes a creature "burning bright." For 10 points, name this English poet of "The Chimney Sweeper," "The Lamb," and "The Tyger."
ANSWER: William **Blake**

014-13-96-07104

5. San Blas was the name of a region in this country that is now called Guna Yala, home of the Guna people who produce blouses called "molas." A province in this country is the namesake of the Darien Gap. In 1999, this country received full control of a formerly extraterritorial area through the Torrijos-Carter Treaty. That area in this country includes Gatun Lake, where one of three locks is located on a waterway between the Caribbean and Pacific. For 10 points, name this Central American country found on an isthmus, where a namesake canal connects the Pacific to the Atlantic.
ANSWER: Republic of **Panama** [or Republica de **Panama**]

023-13-96-07105

6. A film attacking this practice depicted a man igniting a fireball by holding a match up to his kitchen faucet. Debate over this practice often focuses on the future of the Marcellus region. Matt Damon starred in a 2012 Gus Van Sant film about the controversy over this practice, *Promised Land.* In this technique, gallons of high-pressure fluid are injected underground to crack the rock around a gas well. For 10 points, name this controversial method of extracting natural gas.
ANSWER: induced hydraulic **fracturing** [or **fracking**]

7. This question was first proposed in Joseph Hart's text *The Romance of Yachting.* J. Thomas Looney proposed the "Oxfordian theory," which claimed that this question's answer was Edward de Vere, while others believe the answer is "multiple people." Several scholars have proposed that the answer to it is "Francis Bacon" or "Christopher Marlowe" because the familiar answer lacked the appropriate education. For 10 points, give this literary question which ponders who was really responsible for such dramas as *Romeo and Juliet*.
ANSWER: "Who wrote **Shakespeare's plays**?" [or obvious equivalents; or **Shakespeare authorship** controversy]

8. This man was going to be succeeded by Abe Fortas in 1968 until Congress threatened a filibuster. In his highest post, this man replaced Fred Vinson, and he was previously Governor of California when he was Thomas Dewey's 1948 running mate. His appointment to the Supreme Court was legendarily labeled "the biggest fool mistake I ever made" by Dwight Eisenhower, who found him too liberal. For 10 points, name this Chief Justice of the Supreme Court during the Court's decisions in *Miranda v. Arizona* and *Brown v. Board of Education.*
ANSWER: Earl **Warren**

9. In an essay, this author wrote that a woman must have money and the title place if she is to write fiction. A novel by this author depicts the suicide of Septimus Smith and the party preparations of Clarissa, the title character. This author of *A Room of One's Own* included the chapters "The Window" and "Time Passes" in her experimental novel about the Ramsay family, who take a boat to the title structure. For 10 points, name this author of *Mrs. Dalloway* and *To the Lighthouse.*
ANSWER: Virginia **Woolf**

10. The Gate of Ghosts, Gate of the Spirits, and Gate of Man are channels of this river. According to legend, the emperor Yu the Great tamed the flooding of this river. This river's source is located in the Bayan Har Mountains, out of which this river flows to create the Ordos Loop. This river flows into the Bohai Sea after traveling through the Loess (LESS) Plateau; sediment from that plateau led to the name of this river. For 10 points, identify this river that is the second longest in China after the Yangtze, and is named for its color.
ANSWER: **Yellow** River [or **Huang** He]

11. Kinetic energy is equal to this quantity squared over twice the mass. For a photon, this quantity is equal to Planck's constant divided by the wavelength. Although it is not velocity, the Heisenberg uncertainty principle states that both position and this quantity cannot be known for a particle to arbitrarily high precision. Its change with respect to time is force, and the change in it is impulse. This quantity is measured in kilogram-meters per second and is conserved in all collisions. For 10 points, identify this quantity calculated as the product of mass and velocity.
ANSWER: linear **momentum** [do not accept "angular momentum"]

12. This singer was criticized online for dating James Lowe, and Veronica Bayetti Flores wrote an October 2013 article claiming that a song by this artist is racist. A song by this artist includes the lyrics "I'm kind of over getting told to put my hands up in the air" and starts the chorus with "we live in cities you'll never see on screen." This singer of "Team" also has a song that begins "I've never seen a diamond in the flesh" and asks "let me be your ruler" and "let me live that fantasy." For 10 points, name this New Zealand singer whose album *Pure Heroine* included the song "Royals."
ANSWER: **Lorde** [or Ella **Yelich-O'Connor**]

13. In one of these areas, Chiron and Pholus lead a centaur patrol that fires arrows at a river, and the Harpies watch over a forest of tree-people. The principle of *contrapasso* governs these areas, whose residents are assigned by a long-tailed Minos. The last of these areas is a frozen waste where a three-headed monster chews on Brutus, Cassius, and Judas. Residents of these areas endure poetic punishments that vary according to their specific sins. For 10 points, identify these nine concentric zones into which Dante divided his *Inferno.*
ANSWER: the nine **circles** of **Hell** [or equivalents; prompt on **Hell**]

14. On New Year's Day 2014, this country's ex-spy chief Patrick Karegeya (cah-ruh-GAY-uh) was found dead in a Sandton hotel. Along with Uganda, this home of controversial "gacaca" (gah-CAH-cah) courts supplies recruits to a different country's M23 forces. In 2012, the United States cut off aid to this country for training rebels in the Democratic Republic of the Congo. This country's president, Paul Kagame (kah-GAH-may), came to power after leading the RPF to victory against its Hutu people. For 10 points, name this African country where the Hutus targeted the Tutsi people in a 1994 genocide.
ANSWER: **Rwanda**

15. This character was the sister of Euryale (yur-ee-AH-lay) and Stheno (suh-THEE-noh), who were likewise daughters of Phorcys (FORK-iss) and Ceto (SEE-toh). She was punished by Athena after an encounter in a temple with Poseidon, and she was later targeted on a man who used winged sandals and a helm of invisibility on a mission from Polydectes (PAH-lee-DEK-teez). Pegasus came out of her neck after Perseus beheaded her. For 10 points, name this snake-haired Gorgon whose gaze turned men to stone.
ANSWER: **Medusa**

1A. What Greek king, the father of Alexander the Great, was assassinated in 336 BCE by Pausanias (pow-SAY-nee-us) of Orestis?
ANSWER: **Philip II** of Macedon [prompt on **Philip**]

1B. The friction force for an object is proportional to what force that is perpendicular to the surface?
ANSWER: **normal** force

2A. What Confederate general who commanded a corps under Lee was known as "Old Pete" and "Lee's War Horse?"
ANSWER: James **Longstreet**

2B. What novel-in-verse by Alexander Pushkin describes an aristocrat who kills his friend Lensky in a duel?
ANSWER: *Eugene Onegin*

3A. This is a 20-second calculation question. In triangle ABC, AB is length 5 and BC is length 7. The altitude drawn from angle A also bisects BC. What is the length of side AC?
ANSWER: **5**

3B. This is a 20-second calculation question. Consider the equation y equals tangent of x minus quantity pi over 4. At what angle between 0 and pi radians would the graph of this equation have a vertical asymptote?
ANSWER: **3 pi over 4** radians [or **3/4 pi** radians; or **0.75 pi radians**; or **135 degrees**]

4A. What organelle uses acid hydrolases to digest compounds?
ANSWER: **lysosome**

4B. What British economist wrote *On the Principles of Political Economy and Taxation,* in which he defined rent and laid out his theory of comparative advantage?
ANSWER: David **Ricardo**

5A. What name is given to the final group of the periodic table, which includes krypton and xenon?
ANSWER: **noble gas**es [or group **18**]

5B. What NBA team is currently coached by Randy Wittman and is led by John Wall and Bradley Beal?
ANSWER: Washington **Wizards** [or **Washington** Wizards]

6A. What group of American painters included Thomas Cole and Frederick Church and was known for their landscape paintings?
ANSWER: **Hudson River School**

6B. What astronomer names a constant describing the rate of expansion of the universe?
ANSWER: Edwin **Hubble**

7A. What mathematician names a set of fluid dynamics equations describing inviscid flow?
ANSWER: Leonhard **Euler**

7B. What gender of German nouns takes the definite article "der" in the nominative?
ANSWER: **masculine**

8A. J. S. Bach wrote a famous B minor example of what genre of religious composition featuring such sections as the "Kyrie" and "Agnus Dei"?
ANSWER: **mass**

8B. What sorceress who lived on the island of Aeaea (EYE-ee-uh) turned Odysseus's men into pigs?
ANSWER: **Circe**

9A. What American author wrote "The Murders in the Rue Morgue" and "The Oblong Box?"
ANSWER: Edgar Allan **Poe**

9B. Shale and sandstone are classic examples of what type of rocks?
ANSWER: **sedimentary** rocks

10A. This is a 30-second calculation question. To win a board game, you have to roll a 20-sided die, with faces numbered 1 through 20, and get a 1. What is the probability that you roll a 1 and your opponent does not roll a 1, if the events are considered independent?
ANSWER: **19/400** [or **0.0475**; or **4.75%**]

10B. This is a 30-second calculation question. What is the inverse of the function "y equals one-half times the natural log of x"?
ANSWER: y = **e^(2x)** [or y equals **e to the 2x**; or y equals **e** raised to the power of **2** times **x**]

1. Objects that undergo this process under similar conditions are grouped into "facies" (FAH-sheez). George Barrow defined the chlorite and sillimanite zones at opposite ends of a grading system for this process. Black smokers trigger the hydrothermal variety of this process on the ocean floor. Contact and regional are more common types of this process, which results in gneiss (NICE), schist (SHIST), and slate, when shale, clays, and muds are subject to high temperature and pressure. For 10 points, name this process that transforms limestone, a sedimentary rock, into marble.
ANSWER: **metamorphism** [or word forms]

020-13-96-07117

2. The song "Non, je ne regrette rien" is featured prominently in this film. Its protagonist is chased through the streets of Mombasa by agents of Cobol Engineering. That same character in this movie tasks Ariadne, played by Ellen Page, with drawing a maze in two minutes that takes one minute to solve. Throughout this movie, Cobb, played by Leonardo DiCaprio, is stalked by the projection of his dead wife Mal. For 10 points, name this 2010 Christopher Nolan movie about dreams.
ANSWER: **Inception**

225-13-96-07118

3. This man led armed warriors to confront an opposing general at the general's Indiana home of Grouseland. He declined a commission from Henry Procter honoring him for his efforts in the siege of Detroit. Future Vice-President Richard Johnson claimed to have killed this man at the Battle of the Thames during the War of 1812. His brother was Tenskwatawa (TENS-kwuh-TAH-wah), otherwise known as the Prophet. For 10 points, name this Shawnee leader who was defeated by William Henry Harrison at the Battle of Tippecanoe.
ANSWER: **Tecumseh**

052-13-96-07119

4. Elongation factors such as EF-Tu transport molecules to this location. GTP is hydrolyzed when molecules move through this structure's A, P, and E sites. In eukaryotes, these structures are made up of subunits that are 40S and 60S in size. The RNA portion of these structures is synthesized in the nucleolus. Molecules including aminoacyl(uh-MEE-noh-EY-sil)-tRNA and mRNA are brought to this organelle to start translation. For 10 points, name these organelles, the site of protein synthesis.
ANSWER: **ribosome**s

140-13-96-07120

5. The second verse of one of this man's songs states that "Mermaids are chanting the wild lorelei." In another of his songs a man admonishes a woman, "...don't you cry for me/For I come from Alabama with a banjo on my knee." This man wrote many songs for the Christy's Minstrels, including one traditionally sung before an annual event at Churchill Downs. Another of his songs includes the refrain, "Doo dah, doo dah." For 10 points, name this American songwriter of "My Old Kentucky Home," "Camptown Races," and "Oh! Susanna."
ANSWER: Stephen **Foster**

030-13-96-07121

6. Larvae in this phylum are called planula. Along with some types of worms, some organisms in this phylum can undergo strobilation, an alternative to budding. Ctenophores (TEE-nuh-fours) are former members of this phylum. Members of this phylum have specialized cells that release a barb, containing toxins, to trap prey; those cells are nematocysts. Organisms in it have medusa and polyp life cycle stages and have radial symmetry. For 10 points, name this animal phylum whose members include sea anemones and jellyfish.
ANSWER: **Cnidaria** [or **cnidarians**]

7. This author writes in a poem that a woodchuck could tell whether his sleep will be the "long sleep" or "just some human sleep." This author of "After Apple-Picking" cites what he has "tasted of desire" and what he knows "of hate" in another poem, which contrasts two opposite ends for the world. This author concludes, "And that has made all the difference" in a poem that begins, "Two roads diverged in a yellow wood." For 10 points, name this New England poet of "Fire and Ice" and "The Road Not Taken."
ANSWER: Robert **Frost**

8. This man confessed to using a fence post to kill Margret Whitehead. Much information about his background comes from a text published by Thomas Ruffin Gray. After seeing a solar eclipse, this man began to contact such comrades as Henry, Hark, Nelson, and Sam. This man's "confessions" were published by a white lawyer. His forces killed over fifty whites in Southampton County, while not distinguishing women and children. For 10 points, name this slave who led an 1831 rebellion in Virginia.
ANSWER: Nat **Turner**

9. One of these characters kills his rival Trampas in Owen Wister's *The Virginian,* and another of these characters is arrested by evil Mormons led by Elder Tull in a Zane Grey novel. Cormac McCarthy wrote a trilogy about one of them named John Grady Cole, who appears in *All the Pretty Horses.* Annie Proulx described a homosexual relationship between two of them, Jack Twist and Ennis Del Mar, in the story "Brokeback Mountain." For 10 points, name these characters who bear ten-gallon hats and lassos in Western novels.
ANSWER: **cowboy**s

10. After reading Svante (suh-VON-tay) Arrhenius's work on the greenhouse effect, this inventor of an electric piano proposed setting coal mines on fire to increase global temperatures. Though not Jewish, the Nazis forced him into retirement because his three daughters all had Jewish husbands. His observations on approaching absolute zero became the third law of thermodynamics. For 10 points, identify this scientist whose namesake equation is used to calculate the reduction potential of an electrochemical half-cell.
ANSWER: Walter **Nernst**

11. After the Sharpeville Massacre, this man became the commander of the newly formed Spear of the Nation. During the Rivonia Trial, he gave the "I am Prepared to Die" speech. This leader established the Truth and Reconciliation Commission after sharing the Nobel Peace Prize with F.W. de Klerk. He spent eighteen years imprisoned on Robben Island before winning a 1994 election that was the first to allow black voters. For 10 points, name this president of South Africa who helped to end apartheid.
ANSWER: Nelson Rolihlahla **Mandela**

12. The Grotthuss-Draper (GROW-tiss DRAY-per) law states that a reaction can only occur when a target molecule is affected by this phenomenon. On a Feynman (FINE-man) diagram, this phenomenon is represented by a wavy line in the center. Albert Einstein was awarded his Nobel when he demonstrated that this phenomenon was quantized. When 7-dehydrocholesterol in the skin is exposed to this phenomenon, vitamin D is synthesized. Two organs in the human body detect this phenomenon using rod and cone cells. For 10 points, identify this phenomenon which stimulates phototropism in plants.
ANSWER: visible **light** [or **photon**s; or **UV** radiation; prompt on "electromagnetic radiation"]

13. Escaped slaves living in this area inspired Harriet Beecher Stowe's novel *Dred.* This area contains the larger of only two natural lakes in its state, Lake Drummond. George Washington surveyed it and suggested building a canal connecting the Albemarle Sound with the Chesapeake Bay. This marsh's current borders touch Camden County in the south and the cities of Chesapeake and Suffolk in the north. For 10 points, name this swamp in southeast Virginia and northeast North Carolina.
ANSWER: **Great Dismal** Swamp

14. The double dabble algorithm converts values from this system into another system. In this system, signed numbers can be represented using two's complement notation. Every grouping of four digits in this system corresponds to one digit in hexadecimal, which uses symbols from 0 to F. This system can represent two to the n distinct numbers, where n is the number of bits used. For 10 points, name this number system used by computers that only has zeroes and ones.
ANSWER: **binary** number system [or **base-two** number system]

15. This artist's "nuclear mysticism" period includes his version of the Crucifixion, which depicts Jesus on a hypercube crucifix. This artist included twenty-eight depictions of the Venus de Milo in *Hallucinogenic Toreador.* This man collaborated with Luis Bunuel on the film *An Andalusian Dog.* In a painting by this man, ants cover the face of one of several melting clocks. For 10 points, name this Spanish surrealist artist of *The Persistence of Memory.*
ANSWER: Salvador Domingo Felipe Jacinto **Dali** i Domenech, 1st Marques de Dali de Pubol

1. In this novel, a recreation of a successful experiment is attempted in the Orkneys. In a scene from this novel, the maid Justine Moritz is executed for murdering the protagonist's brother William. This novel's frame story includes letters written to Margaret Saville by the arctic explorer Robert Walton. While studying at the University of Ingolstadt, the main character of this novel discovers how to reanimate dead tissue. For 10 points, name this Mary Shelley novel about the scientist Victor and his monstrous creation.
ANSWER: _**Frankenstein**; or, the Modern Prometheus_

186-13-96-07132

2. An alternative to mercury thermometers are red thermometers, which most often contain this molecule with red dye. A solution consisting 96% of this compound and 4% water is an azeotrope. Glucose is industrially fermented to form two carbon dioxides and two of these molecules. The liver uses ADH to convert this molecule into acetaldehyde, and it is used as an additive to gasoline. For 10 points, identify this two carbon molecule found in alcoholic beverages.
ANSWER: **ethanol** [or **ethyl alcohol**; or **drinking alcohol**; or **grain alcohol**; prompt on **alcohol**]

239-13-96-07133

3. In a play by this author, Eben Cabot fathers a child with his father's wife Abbie Putnam. In one of this man's plays, the former Pullman porter Brutus becomes the ruler of an island. This author of _Desire Under the Elms_ and _The Emperor Jones_ wrote a play in which "Hickey" convinces the denizens of Harry Hope's saloon to give up their "pipe dreams." For 10 points, name this American playwright of _The Iceman Cometh_ who created the Tyrone family in _Long Day's Journey Into Night._
ANSWER: Eugene **O'Neill**

186-13-96-07134

4. During these cells's development, they go from double-negative to double-positive to single-positive. These cells are further classified based on what MHC complex they recognize, as they contain one or both of the CD4 or CD8 markers. Along with macrophages, HIV infects a type of these cells. Like NK cells and B cells, these cells are classified as lymphocytes, and have types like cytotoxic and helper. For 10 points, name this type of white blood cell that matures in the thymus.
ANSWER: helper **T** cells [prompt on **lymphocyte** until it is read; prompt on **white blood cell** until it is read]

140-13-96-07135

5. In this country, workers building the Stalinallee Boulevard rioted against the government in 1953. This country attempted to create a more efficient economy through Wolfgang Berger's New Economic System. Kurt Wismach shouted for free elections to be held in this country while Walter Ulbricht gave a speech. This country enacted a plan of "consumer socialism" while led by Erich Honecker. This country employed the Stasi police force and was where the Berlin Wall was built. For 10 points, name this former country that was reunited with its western counterpart in 1990.
ANSWER: **East Germany** [or **GDR**; or **German Democratic Republic**; or **Deutsche Demokratische Republik**; do not accept or prompt on "Germany"]

186-13-96-07136

This is a calculation question. On Monday, there's a 10% chance of rain, which increases to 20% on Tuesday and 30% on Wednesday. What's the probability it rains all three days?
ANSWER: **3/500** [or **6/1000**; or **0.006**; or **0.6%**]

Nanak and Gobind Singh are the first and tenth of what series of spiritual teachers venerated in Sikhism?
ANSWER: **Guru**s