1. A holiday celebrating the reception of this religion's scripture is celebrated by staying up all night and eating dairy foods. Thirteen articles of faith about this religion's god are enumerated in a piyyut called *Yigdal,* and were formulated by the author of the *Guide for the Perplexed*. That thinker, Maimonides, also discussed eight levels of charity in his commentary on this religion's Talmud. For 10 points, name this religion that follows the Torah.
ANSWER: **Judaism**

142-13-90-03101

2. The ancient Egyptian Temple of Debod was reconstructed in this city, which is also home to the outdoor flea market called the Rastro. Well-known squares in this city include the Plaza de Cibeles, the site of a famous fountain, and the Puerta del Sol. This metropolis lying on the Manzanares River houses the Reina Sofia art museum as well as the Prado. For 10 points, name this largest city and capital of Spain.
ANSWER: **Madrid**

190-13-90-03102

3. The *Ars Magna* of Girolamo Cardano contained a formula for solving polynomials of this degree. An alkyne is defined by the presence of this type of bond. This number of non-collinear points is required to define a plane. The faces of a tetrahedron each have this many edges. This is the smallest number by which a number is divisible if the sum of its digits is divisible by this number. Lithium has this many protons. For 10 points, identify this first odd prime number.
ANSWER: **three** [or **triple**; or **cubic**]

066-13-90-03103

4. Although not the simplex virus, the virus that causes this disease is most commonly treated with acyclovir. A reappearance of that virus that causes this disease can cause postherpetic neuralgia. That virus is varicella zoster, which causes shingles when it reappears. Calamine lotion or oatmeal baths are often used to relieve the symptoms of this disease, which is no longer contagious after its associated rash crusts over. For 10 points, name this disease that causes itchy red spots to appear on the body.
ANSWER: **chickenpox** [or **varicella** until it is read; prompt on **shingle**s until is read]

066-13-90-03104

5. This baseball player was the first of Carl Hubbell's five consecutive strikeouts at the 1934 All-Star Game. This player hit his legendary "Called Shot" against the Cubs during the 1932 World Series. This player was the first to hit three home runs in one World Series game. This outfielder held the record for most career home runs until Hank Aaron passed him in 1974. For 10 points, name this legendary Yankees outfielder, who was nicknamed the "Great Bambino."
ANSWER: "Babe" **Ruth** [or George Herman **Ruth**, Jr.; prompt on the **Sultan of Swat**; prompt on the **Great Bambino** until it is mentioned]

186-13-90-03105

6. This politician was called the "Murderer of Gordon," a reference to his supposed abandonment of General Gordon in Africa. He was Prime Minister during Britain's war against the Mahdi in Sudan. This man served as Prime Minister on four separate occasions and was the oldest Prime Minister ever. This "Grand Old Man" frequently quarreled with Queen Victoria. For 10 points, name this British Prime Minister, a Liberal noted for his feuds with rival Benjamin Disraeli.
ANSWER: William Ewart **Gladstone**

052-13-90-03106

7. Enyalios was a Mycenean deity who was often thought to be either this god or his son. With Otrera, this god's offspring included a woman whom Achilles fell in love with after slaying, the Amazon Penthesilea. After Helios discovered him, this god was trapped in a very fine net by his lover's jealous husband Hephaestus. This god had the children Phobos and Deimos after an affair with his sister Aphrodite. For 10 points, identify this Greek god of war.
ANSWER: **Ares**

233-13-90-03107

8. This man's reputation was established in a painting set in the Petersburg battlefield, where Francis Channing Barlow inspects several prisoners. This artist showed children holding hands in front of a red schoolhouse in one painting. Another of his artworks shows sharks circling a rudderless boat captained by a single black man. For 10 points, name this American painter of *Snap the Whip* and *The Gulf Stream*.
ANSWER: Winslow **Homer**

030-13-90-03108

9. An excess amount of this controllable process is one major cause of amenorrhea. The Cori cycle corrects metabolic imbalances that arise during this process. One subtype of this process can be split into eccentric, concentric, and isometric phases. Different types of this process benefit from the recruitment of "fast-twitch" or "slow-twitch" tissues. This process results in the buildup of lactic acid, because glycolysis produces energy without the presence of oxygen. For 10 points, name this process which strengthens muscles and raises fitness.
ANSWER: physical **exercise** [prompt on **muscle movement**; accept any subtype of exercise, such as **weightlifting** or synonyms, or **cardiovascular** or **aerobic** exercise]

020-13-90-03109

10. In this city, Clint Hill was filmed leaping onto the back of a car. A man was arrested in a movie theater here shortly after killing police officer J.D. Tippit. This city was where Governor John Connally was wounded by a gunman. A murder here was committed by a man who had positioned himself in a Schoolbook Depository at Dealey Plaza, which was followed soon after by Jack Ruby's slaying of Lee Harvey Oswald. For 10 points, name this Texas city where John F. Kennedy was assassinated in 1963.
ANSWER: **Dallas**

052-13-90-03110

11. This man continually sees his deceased older brother, Ben, a man who went into the jungle and came out rich. His affair with a woman in Boston horrifies his football player son, and he kills himself by crashing his car to provide insurance money to his family. This man is fired after his boss tells him he needs a rest from constantly traveling. The husband of Linda, he is the father of Biff and Happy. For 10 points, name this protagonist of Arthur Miller's *Death of a Salesman.*
ANSWER: **Willy** Loman [or Willy **Loman**]

052-13-90-03111

12. The least common naturally occurring isotope of potassium decays to argon or this element. Feldspars rich in sodium or this element, instead of potassium, are classified as plagioclase. One crystal form of this element's carbonate is aragonite, which is found in a sedimentary rock whose solubility at weak acidities leads to the formation of karst topography. That sedimentary rock is limestone. For 10 points, identify this element found in hydroxyapatite, an important mineral constituent of bones, and that has symbol Ca.
ANSWER: **calcium** [or **Ca** until it is read]

13. An example of these types of books was written by Benvenuto Cellini and describes the conjuring of devils in the Coliseum. In an American of these books, the author urges "frugality" and "industry," telling readers to "lose no time." Famous examples include one written by Benjamin Franklin, in which he describes his "thirteen virtues," and a text called *Confessions* by St. Augustine. For 10 points, name this type of book in which a person writes about his or her own life.
ANSWER: **autobiography** [prompt on **biography**]

14. The letter c is appended to the name of this function when it is divided by x. When solving a triangle, the ambiguous case arises because this function isn't one-to-one. In triangles, this function of an angle, divided by the side opposite the angle, is constant. The y-coordinate of the unit circle is this function of the angle. This function of pi over two radians, or ninety degrees, is one. For 10 points, name this odd function defined in right triangles as opposite over hypotenuse.
ANSWER: **sin**e

15. This story's protagonist hears the voice of General Lasalle as it ends, and it begins with him remembering "the dread sentence of death." This story ends with the narrator about to fall into a chasm only to be saved when the French Army takes Toledo. The narrator is bound to a wooden board with one of the two title objects swinging above him and slowly descending. For 10 points, name this Edgar Allan Poe story about a prisoner of the Spanish Inquisition.
ANSWER: "The **Pit and the Pendulum**"

1A. What opera by Ruggero Leoncavallo about a troup of clowns includes the aria "Vesti la giubba?"
ANSWER: *Pagliacci*

1B. Which polio-stricken Israeli violinist played the theme for *Schindler's List*?
ANSWER: Itzhak **Perlman**

2A. What James Joyce collection includes short stories about the Irish middle class such as "Araby" and "The Dead?"
ANSWER: *Dubliners*

2B. What British scientist wrote about sexual selection in his *The Descent of Man* and is buried in Westminster Abbey?
ANSWER: Charles **Darwin**

3A. This is a 20-second calculation question. What are the roots of "*x* squared minus 8 *x* plus 7?"
ANSWER: x=**1** and x=**7** [in either order]

3B. This is a 20-second calculation question. If a square is inscribed in a circle of radius 6, what is the arclength between two adjacent vertices of the square?
ANSWER: **3 pi** [or **three times pi**]

4A. What river is the longest entirely within Massachusetts, had a marshy area known as the Back Bay, and flows through Boston?
ANSWER: **Charles** River

4B. What very thin blood vessels connect arterioles to venuoles and are the site of gas exchange with surrounding tissue?
ANSWER: **capillaries**

5A. What English king of Wessex in the 800's was known as the "great" for his legal and cultural reforms?
ANSWER: **Alfred** the Great

5B. What functional group consists of a hydrocarbon chain with at least one double bond between two carbons?
ANSWER: **alkene**s [do not accept "alkanes" or "alkynes"]

6A. What terrorist event lasted for 444 days and ended when Ronald Reagan was inaugurated on January 20, 1981?
ANSWER: **Iran Hostage Crisis**

6B. What is the neuter singular nominate form of the German article?
ANSWER: **das**

7A. What Greek letter is used to represent the summation of a series?
ANSWER: upper-case **sigma**

7B. In 2011, Christine Lagarde replaced Frenchman Dominique Strauss-Kahn as the head of what intergovernmental financial organization?
ANSWER: **International Monetary Fund** [or **IMF**]

8A.  What play written by Edward Albee sees George and Martha treat Nick and Honey to bizarre games like "Humiliate the Host" and "Get the Guests"?
ANSWER: *Who's Afraid of Virginia Woolf?*

8B.  What European country attempted to boost its grain production with the Virgin Lands Campaign in 1953, a plan partially organized by editors of *Pravda*?
ANSWER: **Soviet Union** [or **Union of Soviet Socialist Republics**; or **USSR**; prompt on **Russia**]

9A.  This is a 30-second calculation question. What is the only value between pi over two and five pi over two for which the equation "cosine squared x plus 4 cosine x plus 3 equals zero" is satisfied?
ANSWER: **pi**

9B.  This is a 30-second calculation question. If there are two blue marbles in an urn of five all together, what is the probability of drawing at least one blue after two draws without replacement?
ANSWER: **seven-tenths** [or **70%**; or 0**.7**]

10A.  What book by Boccaccio (boh-KAH-chee-oh) includes the tale of Patient Griselda in its one hundred stories, told by a group of Florentines escaping the Black Death?
ANSWER: *The **Decameron*** [or *Il **Decameron***]

10B.  What stuff makes up nearly 80% of the universe's mass but is very difficult to observe?
ANSWER: **dark matter**

1. These are the smallest particles for which TMS is used to calibrate their namesake type of NMR spectroscopy. The Standard Model explains why these particles when free will not decay through the conservation of baryon number. These particles make up about 90 percent of all cosmic rays. These baryons are composed of two up quarks and one down quark. For 10 points, identify these positively charged particles, found with neutrons in the atomic nucleus.
ANSWER: **proton**s

233-13-90-03117

2. This island's "Yala National Park" contains many animals, including its namesake leopard. This island was once connected to the mainland by "Adam's Bridge," a formation also known as "Rama's Bridge." It contains a fort built by the Dutch on the Jaffna peninsula. This location is separated from the mainland by the Palk Strait and many Tamils live in its largest city, Colombo. For 10 points, name this island off the southern coast of Indian that was once known as Ceylon.
ANSWER: **Sri Lanka** [or **Ceylon** until it is read]

052-13-90-03118

3. This character notes that his friend "jests at scars that never felt a wound" and wishes he was a glove upon his lover's hand. This character is the addressee of a speech about the fairy's midwife, Queen Mab. Friar John is detained from giving this character a note, which causes him to kill Paris and take an apothecary's poison while in his lover's "crypt". For 10 points, name this friend of Benvolio and Mercutio, a Montague "star-cross'd" lover of Juliet.
ANSWER: **Romeo** Montague

190-13-90-03119

4. In one poem, this author wrote that he "wander'd in a forest thoughtlessly" before happening upon Cupid and Psyche. This poet coined the phrase "tender is the night" and wondered, "Fled is that music:-- Do I wake or sleep?" in another of his poems written in 1819. That year, he averred that "Beauty is truth, truth beauty" at the end of an ode addressed to a "still unravish'd bride of quietness". For 10 points, name this author of odes about a nightingale and a Grecian urn.
ANSWER: John **Keats**

190-13-90-03120

5. The velocity of a bullet can be found with a ballistic one of these devices. The period of one of these equals two pi times the square root of L over g. For small angles, they approximate simple harmonic motion. One of these devices to demonstrate the earth's rotation by Jean Foucault. For 10 points, name this device that consists of a weight suspended on a string.
ANSWER: **pendulum**

185-13-90-03121

6. In the first of his *Plays Pleasant*, this author wrote about the Swiss man Bluntschli, who seeks refuge in the home of Bulgarian war hero during the Serbo-Bulgarian War. This author created a Greek scholar named Adolphe Cusins who inherits a munitions company from Andrew Undershaft. In his best-known play, Colonel Pickering bets Henry Higgins that Eliza cannot become a woman of manners. For 10 points, name this Irish dramatist of *Arms and the Man*, *Major Barbara*, and *Pygmalion*.
ANSWER: George Bernard **Shaw**

190-13-90-03122

7. Future Canadian Prime Minister Lester Pearson won a Nobel Peace Prize for defusing a crisis in this country. It was the home of the Free Officers Movement's coup in 1952, which resulted in Muhammad Naguib becoming leader and the dissolution of the Wafd Party. With Syria, this country formed the United Arab Republic and with Israel, it attended the Camp David Accords. For 10 points, name this African country, the site of the Aswan High Dam, where President Gamal Nasser nationalized the Suez Canal.
ANSWER: **Egypt** [or **Egyptian** Republic]

8. In 2011, President Obama sent this man on a diplomatic mission to Sudan, in which he proposed a peaceful implementation of South Sudan's independence referendum in exchange for removing Sudan from the list of state sponsors of terrorism. He was attacked in the controversial "swiftboat ads" which questioned his service record in the Vietnam War, eight years before he was nominated to replace Hillary Clinton. For 10 points, name this current U.S. Secretary of State.
ANSWER: John **Kerry**

9. A precursor to the use of these substances was made widespread by Edward Jenner, who used an organism that names these substances. One discredited theory linked the use of these items to autism. These items can use an attenuated pathogen or its components in order to stimulate the immune system, allowing it to recognize future infections from that pathogen. For 10 points, name this immunological substance that is given to patients to confer immunity to a disease.
ANSWER: **vaccine**s

10. This man secretly became engaged to Lucy Hale, and his alleged last words were, "Useless, useless." He organized meetings at a boarding house owned by Mary Surratt. His broken leg was healed by Dr. Samuel Mudd. This man's brother Edwin was probably the most well-known actor in America on the day this man shouted "Sic semper tyrannis" at a performance of *Our American Cousin.* For 10 points, name this sympathizer of the Confederates who, on April 14, 1865, shot President Abraham Lincoln.
ANSWER: John Wilkes **Booth**

11. The Nernst equation gives the potential of a SHE cell as "E-nought minus 2.303 RT over F", times this quantity. When this quantity is greater than the pKa, the predominant components of the solution will be deprotonated as a consequence of the Henderson-Hasselbalch equation. It equals the negative log of hydronium ion concentration and is seven for neutral solutions. For 10 points, name this measurement of acidity.
ANSWER: **pH** [or **potential of hydrogen**]

12. One line in this song states that the singers have got "that devilish flow, rock and roll, no halo." In the music video for this song, the two singers wake up from 28-day-long comas in a hospital. This song's chorus includes lines such as "everybody just have a good time" and "we gon' make you lose your mind." Notable moments in this song include a pause before the line "everyday I'm shufflin." For 10 points, identify this song by the band that sang "Yes," LMFAO.
ANSWER: "**Party Rock Anthem**"

13. In this story, one character praises his wife for her beef stew while she daydreams about the fancy life. Another character in this story is elated at first after receiving an invitation to a ball held by the Ministry of Education. The protagonist of this story visits Madame Forestier (for-EST-ee-ay) in order to borrow the title object. For 10 points, name this short story in which Mathilde replaces the title piece of fake jewelry, written by Guy de Maupassant (GEE duh MOH-puh-sahnt).
ANSWER: "The **Necklace**" [or "La **Parure**"]

227-13-90-03129

14. A 1936 experiment linked this phenomenon to perception of the autokinetic effect. Floyd Allport recorded how late workers were to their jobs to formulate his J-curve theory of this phenomenon. Groups of "confederates" tasked with matching line lengths on cards were used in an experiment on this behavior by Solomon Asch. It is related to compliance and obedience, and results from groupthink. For 10 points, identify this behavior in which individuals try to fit into a group norm.
ANSWER: **conformity**

232-13-90-03130

15. The top left of this painting contains a rectangular metal bar. The objects in this painting are broken up into small rectangular pieces in a followup "Disintegration" of this painting. A fly and ants can be seen in the leftmost of this painting, consuming a metal object. One of the four timepieces in this painting is draped over a tree in the left background. For 10 points, name this painting by Salvador Dali that shows three melting clocks in a dream world.
ANSWER: The ***Persistence of Memory*** [or La ***Persistencia de Memoria***]

135-13-90-03131

1. FDR said that it takes a crook to catch a crook after tapping one member of this family to be the first head of the SEC; that man ordered a lobotomy of his daughter Rosemary. Another man from this family fled the scene of a car crash that killed Mary Jo Kopechne at Chappaquiddick. The most famous member of this family was President during the Bay of Pigs invasion and the Cuban Missile Crisis. For 10 points, identify this last name shared by Massachusetts senator Ted and the assassinated John F.
ANSWER: **Kennedy** [accept specific Kennedys like **JFK**]

233-13-90-03132

2. The LZW method for this procedure improved upon one which creates prefix codes based on the frequency of symbols being used. Huffman coding is one method of this process, while a more facile approach represents "runs" of data with a single character and number. When this procedure retains all the original data, it is called lossless. For 10 points, name this process which shrinks the number of bits required to encode information.
ANSWER: data **compression**

190-13-90-03133

3. This man has been frequently portrayed in a one man show by Hal Holbrook. At Epcot, animatronic versions of this man and Benjamin Franklin host the presentation called "We, the People." This man is the namesake of a prize given by the Kennedy Center for American Humor. In *It's a Wonderful Life*, Clarence gives a book by this man as a gift to George Bailey. For 10 points, name this author of *The Innocents Abroad* and *The Adventures of Tom Sawyer.*
ANSWER: Mark **Twain** [or Samuel **Clemens**]

030-13-90-03134

4. This theory utilizes a factor of one over the square root of one minus beta squared; that quantity is known as the Lorentz factor. Applicable to only inertial reference frames, the twin paradox is a consequence of its prediction of time dilation. It also predicts the equivalence of mass and energy; namely that E equals m c-squared. For 10 points, name this theory developed by Albert Einstein, which is often contrasted with its more general form.
ANSWER: **special relativity** [prompt on **relativity**; do not accept "general relativity"]

226-13-90-03135

5. This author wrote a "study in temperament" about a boy who steals a thousand dollars for a glorious week in New York City before jumping in front of a train. Joseph Vaillant and Jean Marie Latour establish a church in New Mexico in one of this author's novels. In the final entry of this author's "Prairie Trilogy," Jim Burden reminisces about his childhood with the Bohemian Shimerda family. For 10 points, name this regionalist author of *Death Comes for the Archbishop* and *My Antonia.*
ANSWER: Willa **Cather**

190-13-90-03136

What type of animal was the eight-legged Sleipnir in Norse mythology?
ANSWER: **horse**

This is a calculation question. Given that sine of 20 degrees is x, find cosine of 110 degrees in terms of x.
ANSWER: **negative x** [or **minus x**; do not prompt on "x"]