1. After playing "Diminuendo and Crescendo in Blue" at the 1956 Newport Jazz Festival, this man returned to prominence. For a Carnegie Hall performance, this man wrote the jazz symphony *Black, Brown, and Beige*. This man's orchestra popularized such songs as "Mood Indigo." His signature tune was "Take the 'A' Train" and he composed "It Don't Mean a Thing (If It Ain't Got That Swing)." For 10 points, name this jazz musician nicknamed "Duke."
ANSWER: Edward Kennedy "Duke" **Ellington**

052-13-93-06101

2. Coenzyme Q is reduced in one step of this process. In one organelle, this process converts NADH back to NAD+, and oxygen is converted into water. This system sets up a proton gradient, which forms the energy that allows ATP synthase to create ATP. For 10 points, name this system found in chloroplasts and mitochondria, where a chemical gradient is established through the transfer of certain negatively charged particles.
ANSWER: **electron transport chain** [or **ETC**]

140-13-93-06102

3. The Val d'Aran is a valley in this mountain range, whose inhabitants speak a dialect of Occitan. A popular tourist site in this mountain range is the Ordesa Canyon. This mountain range borders both the Bay of Biscay and the Mediterranean Sea, and its western portion extends into Basque country. Andorra lies within this mountain range, which separates the Iberian Peninsula from the rest of Europe. For 10 points, name this mountain range on the border between Spain and France.
ANSWER: **Pyrenees**

140-13-93-06103

4. Although not the spleen, these structures contain Malphigian corpuscles. This structure is affected by the hormone aldosterone. The peritubular capillaries surround parts of this structure, which includes the proximal and distal convoluted tubules. This unit, which contains the glomerulus and the loop of Henle, filters the blood and removes waste, which becomes urine. For 10 points, name the functional unit of the kidney.
ANSWER: **nephron** [prompt on **kidney**]

140-13-93-06104

5. The protagonist of one of this man's novels leaves home with Lacey Rawlins after the death of his grandfather. That novel, succeeded by *The Crossing* and *Cities of the Plain,* follows John Grady Cole. In his most acclaimed novel, Judge Holden outlives all of the other members of a band of scalp-hunters, including "the kid." For 10 points, name this contemporary novelist of *No Country for Old Men, All the Pretty Horses,* and *Blood Meridian.*
ANSWER: Cormac **McCarthy**

014-13-93-06105

6. The ham sandwich theorem guarantees that this process can be done to the volume of n-dimensional objects. A namesake simple root-finding method does this to two values on opposite sides of the root. A construction doing this to a line segment draws two congruent circles from the segment's endpoints, then connects the intersections. A median does this to the side opposite it in a triangle. For 10 points, name this process, which is literally cutting something in half.
ANSWER: **bisection** [or cutting in **half** before mention; or same-knowledge equivalents]

7. This man was stopped while on a mission with William Dawes, and that mission was completed by Samuel Prescott. An engraving showing a line of men in red firing into a crowd in "The Bloody Massacre in King Street" was made by this man. An action this silversmith took part in required him to watch the Old North Church to see how many lanterns were lit. For 10 points, name this Revolutionary War hero who went on a midnight ride to warn Lexington and Concord that the British were coming.
ANSWER: Paul **Revere**

8. During the Civil War, this town switched between Union and Confederate control eight times. The free black man Heyward Shepherd was the first person killed in an event in this town. That event in this town was put down after an engine house was stormed by Marines under Robert E. Lee. This town was attacked in 1859 by twenty-one men trying to take its federal arsenal. For 10 points, name this town, now in West Virginia, that was the subject of a raid led by John Brown.
ANSWER: **Harpers Ferry**

9. The title character of this novel becomes enraged after a chaplain tells him that his "heart is blind." In its first chapter, Thomas Perez sheds tears during a funeral at an old persons' home. The main character of this novel carries on an affair with Marie Cardona and in the course of assisting the pimp Raymond Sintes gets drawn into a fight on the beach, during which he murders an Arab. This novel begins with the sentence "Maman died today." For 10 points, name this existential novel about Meursault, written by Albert Camus.
ANSWER: *The **Stranger*** [or *The **Outsider***; or *L'**Etanger***]

10. This procedure is carried out by the DEFLATE algorithm, which combines Lempel-Ziv and Huffman coding. The .gz and .bz2 formats can be used when performing this procedure on .tar files. This procedure comes in lossy and lossless varieties, exemplified for images by the JPG and PNG standards. For 10 points, identify this procedure in computer science where input data is encoded to make it smaller, which is done when storing files in a zip archive.
ANSWER: data **compression** [or source **coding**; or **bit**-rate **reduction**; or word forms]

11. A pitcher for this team has one blue eye and one brown eye. Last year, it endured several blown saves in the playoffs by closer Jose Valverde. Its shortstop, Jhonny ("Johnny") Peralta, was suspended in 2013 for connections to Biogenesis. During the offseason, this team signed Torii Hunter. Last season, the third baseman for this team won the Triple Crown. For 10 points, name this team that won the American League pennant in 2012 and which Miguel Cabrera plays for.
ANSWER: Detroit **Tigers** [or **Detroit** Tigers]

12. A speech in this book begins "My soul glorifies the Lord" and is known as the Magnificat. Another character in this book is struck dumb for doubting that his wife will have a child in old age. This book contains the Good Samaritan parable and the Prodigal Son and, along with Matthew, descends from the 'Q' Source. For 10 points, name this third Gospel, which is written by the author of the Book of Acts and is found after Matthew and Mark in the New Testament.
ANSWER: The Gospel of **Luke** [or Book of **Luke**; prompt on The **New Testament** until "Matthew" is read; prompt on The **Bible** until "Matthew" is read]

236-13-93-06112

13. A participant in the most recent of these events showed off a tattoo of the Serenity Prayer and the U.S. Army Dental Corps. That participant was Kansan Theresa Vail. Wendy Fraser tweeted the 2013 edition of this event was a "nice slap in the face to the people of 9-11" after the winner used a Bollywood dance. Various racist tweets appeared after it was won in September 2013 by Indian-American Nina Davuluri. For 10 points, name this beauty pageant held every year in Atlantic City.
ANSWER: **Miss America** pageant

052-13-93-06113

14. This author wrote about an aspiring pianist who becomes an opera singer named Thea Kronborg. In another of her novels, Joseph Vaillant and Jean Marie Latour travel to New Mexico. This author of *The Song of the Lark* and *Death Comes for the Archbishop* also wrote about the Nebraska prairie life of the Bergson and Shimerda families. For 10 points, name this regionalist American novelist who wrote *O Pioneers!* and *My Antonia.*
ANSWER: Willa **Cather**

014-13-93-06114

15. This poet eulogized his friend Arthur Hugh Clough in "Thyrsis" and proclaimed "Go, for they call you, Shepherd, from the hill" in "The Scholar-Gypsy." A more famous poem by this poet describes the "eternal note of sadness" heard on the Aegean by Sophocles. That poem by this man is set on a "darkling plain" where "ignorant armies clash by night" and begins by stating that "the sea is calm tonight." For 10 points, name this poet of "Dover Beach."
ANSWER: Matthew **Arnold**

186-13-93-06115

1A. In which 1973 war did Egypt and Syria lead a surprise attack on Israel on the Jewish Day of Atonement?
ANSWER: **Yom Kippur** War

1B. What school of psychology advocated by Wolfgang Kohler and Max Wertheimer emphasized the importance of wholeness?
ANSWER: **Gestalt** psychology

2A. What chemist came up with namesake laws of diffusion that can be used to solve for the diffusion coefficient, D?
ANSWER: Adolf **Fick**

2B. What innermost of the sun's three layers is located just below the chromosphere and is covered by granules?
ANSWER: **photosphere**

3A. What term refers to a chromosome that is not a sex chromosome?
ANSWER: **autosome**

3B. What animal's name was used as an acronym in the 1990s for four or five European economies with very large sovereign debts?
ANSWER: **pig** [or **PIGS**; or **PIIGS**]

4A. Name the Stoic Roman Emperor who wrote a series of philosophical reflections titled the *Meditations*.
ANSWER: **Marcus Aurelius** Antoninus Augustus

4B. Students of what language use the acronym DR. and MRS. VANDERTRAMP to memorize verbs that are conjugated in *passe compose* with "etre" and not "avoir?"
ANSWER: **French** language [or le **francais**; or la langue **francaise**]

5A. What system, recently produced at CERN, consists of a positron orbiting around an antiproton?
ANSWER: **antihydrogen** [do not accept hydrogen]

5B. What magnesium silicate mineral is the softest mineral, occupying the lowest position on Mohs' hardness scale?
ANSWER: **talc** [prompt on "talcum"]

6A. What type of strong wind is defined as an 8 on the Saffir-Simpson scale, with wind speed up to 46 miles per hour?
ANSWER: **gale**

6B. What type of equation relates a function's derivative to the function's dependent and independent variables?
ANSWER: **differential** equations

7A. This is a 20-second calculation question. What is the value of n such that n factorial equals 10 factorial divided by 720?
ANSWER: **7**

7B. This is a 20-second calculation question. For how many values of x between pi over 4 and 9 pi over 4, inclusive, does cosine x equal cosine squared x?
ANSWER: **3**

8A. What Egyptian goddess sent a serpent to Ra in order to learn about his secret name?
ANSWER: **Isis**

8B. What happened to Jaroslav Borzita of Martinitz and Vilem Slavata in Prague in 1618, thus beginning the Thirty Years' War?
ANSWER: they were **defenestrated** [or they were **kicked out of a window**; or they were **kicked out** of the Bohemian Chancellory; or they **fell** into horse manure; or same-knowledge equivalents]

9A. This is a 30-second calculation question. What is the area of a triangle with sides of length 13,14, and 15, given that the altitude to the 14 side divides it into parts of length 5 and 9?
ANSWER: **84**

9B. This is a 30-second calculation question. If Alice rolls a fair twelve-sided die three times, what is the probability the product of the numbers she rolls is divisible by three?
ANSWER: **19/27**

10A. What princess of Hyrule titles a video game series in which she is often saved from Ganondorf by Link?
ANSWER: **Zelda**

10B. Name the Polish-born composer who wrote the "Revolutionary" and "Black Key" etudes.
ANSWER: Frederic Francois **Chopin** [or Fryderyk Franciszek **Szopen**]

1. This man designed motion-inhibiting cardboard costumes for the Erik Satie ballet *Parade*. A visit to the Ethnography Museum at Trocadero's primitive art exhibits inspired another painting by this man, which shows the African mask-like faces of two of five Barcelona prostitutes. One of this man's paintings shows a lightbulb above a wounded horse's head and protests the bombing of the namesake town. For 10 points, name this Spanish artist who painted *Guernica* and, with George Braque, invented Cubism.
ANSWER: Pablo Ruiz y **Picasso**

030-13-93-06117

2. A special episode of this series took place in the fictional country of Sangala. Its main character once worked for George Mason and had a deadpan sidekick named Chloe. This show's protagonist generally worked for CTU and tried to protect President Palmer. Most episodes of it ended with split screens revealing what each character was doing as a beeping clock counted down. For 10 points, name this television show about counter-terrorist expert Jack Bauer, which took place in "real time."
ANSWER: *24*

052-13-93-06118

3. In one of this author's novels, the protagonist stumbles upon a conspiracy centered on the postal service Tristero after being named the executor of Pierce Inverarity's estate. Another of his novels follows a soldier whose sexual experiences are correlated with the explosions of V-2 rockets. This author created Oedipa Maas and Tyrone Slothrop. For 10 points, name this postmodern American novelist of *The Crying of Lot 49* and *Gravity's Rainbow.*
ANSWER: Thomas **Pynchon**

014-13-93-06119

4. In this play, the servants Launcelot and Old Gobbo defect from their master. In another scene from thisplay, the Princes of Aragon and Morocco, two suitors, fail to guess which of three caskets contains a wealthy woman's portrait. That woman and her maidservant Nerissa dress up as men to appear in a trial in its fourth act, concerned with an unusual demand of a "pound of flesh." For 10 points, the rich Portia and the miserly Jew Shylock appear in what Shakespeare play?
ANSWER: *The **Merchant of Venice***

020-13-93-06120

5. This author attacked Edwardian writers like John Galsworthy in the article "Modern Fiction," which appears in *The Common Reader.* She considered the hypothetical person "Judith Shakespeare" who is unable to benefit from her genius as her brother does in an essay that argued financial independence was necessary for women to succeed as writers. For 10 points, name this author of "A Room of One's Own," a feminist who wrote the novels *Mrs. Dalloway* and *To the Lighthouse*.
ANSWER: Virginia **Woolf** [or Adeline Virginia Stephen **Woolf**]

121-13-93-06121

6. This man devised the method of images technique for solving electrostatic problems. He allegedly claimed "There is nothing new to be discovered in physics" besides more precise measurements just a few years before Einstein's work. His namesake unit is equal to nine-fifths of a Rankine. This scientist postulated the heat death of the universe based on the laws of thermodynamics he helped formulate. For 10 points, identify this physicist, whose namesake scale of temperature can be found by subtracting 273 from Celsius.
ANSWER: William **Thomson**, First Baron **Kelvin** [accept either]

7. In this work, Captain Andrew Speedy is locked up while his ship, the *Henrietta*, has its wooden superstructure burned for fuel in this novel. The Hindu widow Aouda is saved from suttee in this work, in which the main character is pursued by Detective Fix. The valet of the main character is Passepartout. For 10 points, Phileas Fogg's globe trotting adventures are the subject of what Jules Verne novel?
ANSWER: *__Around the World in Eighty Days__* [or *__Le Tour du Monde en Quatre-Vingt Jours__*]

8. This author's near-execution and subsequent hard labor in prison for involvement in the Petrashevsky Circle provided the basis for his novel *The House of the Dead.* He created the siblings Dmitri, Ivan, and Alyosha in his final novel. Earlier, he described a poor student who murders the pawnbroker Alyona Ivanovna and her sister. For 10 points, name this Russian novelist of *The Brothers Karamazov* who created Raskolnikov in *Crime and Punishment.*
ANSWER: Fyodor **Dostoevsky**

9. A raised carriage ramp and parapet hide the ground floor of this building. The architect who won the contest to design this building was told to reduce its height to two stories. A swimming pool inside this building was covered so that members of the press could have more space. This building was designed by James Hoban, who helped rebuild it after it was burned down in 1814. For 10 points, identify this building located at 1600 Pennsylvania Avenue, the residence of the President.
ANSWER: **White House**

10. In this state, hanging chads and butterfly ballots caused trouble in a Presidential election. This state has the oldest, continuously inhabited settlement in America. Three wars were fought by US troops in this state against the Seminoles. This state home to St. Augustine had its electoral votes go to the Republican candidate after a Supreme Court ruling. For 10 points, name this southern state whose electoral votes were the difference in George W. Bush beating Al Gore in the 2000 election.
ANSWER: **Florida**

11. Transitions between a hydrogen atom's lowest energy levels form lines in this region of the spectrum, seen as the Lyman series. The Rayleigh-Jeans Law predicted that radiative intensity from a blackbody diverged in this region of the spectrum, its namesake "catastrophe". Beer's Law is usually used in a form of spectrophotometry using visible light and this region of the spectrum. For 10 points, name this form of radiation less energetic than X-rays but more energetic than visible light.
ANSWER: **ultraviolet** radiation [or **UV** radiation]

12. Buildings in this city include James Deering's Tuscan Style mansion, which is now known as the Vizcaya Museum. This city has neighborhoods named Coconut Grove and Coral Gables, which houses its namesake university. Sitting on Biscayne Bay, this city lies thirty miles south of Fort Lauderdale on the Atlantic Coast. This city is known for the night life on its South Beach and for its Cuban plurality. For 10 points, name this most populous city of southern Florida.
ANSWER: **Miami**

13. This politician made a gaffe by saying no one was the "suppository of all wisdom." In a 2009 leadership ballot, he beat Malcolm Trumbull to become Opposition Leader, a role in which he was accused of misogyny by Julia Gillard. In his country's September 2013 election, he led the Liberal-National Coalition to victory over Kevin Rudd's Labor Party. For 10 points, name this current Prime Minister of Australia.
ANSWER: Anthony John "Tony" **Abbott**

14. This country's fauna include a type of antelope that engages in "pronking". Its most populous region lies along the Witwatersrand ridge, and it also includes of the Drakensberg Mountains. This country's city of Durban is part of a province whose name is Portuguese for Christmas. Its grasslands, or veld, are home to springboks. The Vaal and Orange rivers named two republics here founded by Dutch colonists. For 10 points, name this African country home to Cape Town.
ANSWER: **South Africa**

15. In a Chinese myth, flocks of magpies create one of these objects to unite the cowherd and weaver girl. Two four-eyed hounds guard another of these objects, called Chinvat, in Zoroastrian mythology. Monkeys in the *Ramayana* create one of these objects to help Rama rescue Sita. Another thing that acts as one of these objects is guarded by a god with superb hearing who possesses Gjallarhorn, and separates Midgard from Asgard. For 10 points, Heimdall guards Bifrost, the rainbow variety of what object?
ANSWER: **bridge**s

1. The speaker of this poem speculates about an "unhappy master whom unmerciful Disaster followed fast and followed faster." It is set in a room in which "each separate dying ember wrought its ghost upon the floor." After a tapping at the chamber door, the title character of this poem enters and perches on a "pallid bust of Pallas," reminding the speaker of his lost love Lenore. For 10 points, name this Edgar Allen Poe poem about a black bird which only says "Nevermore."
ANSWER: "The **Raven**"

015-13-93-06132

2. In transition state theory, this quantity is replaced by the change in Gibbs free energy, symbolized with a double dagger. This quantity for the forward reaction minus this quantity for the backward reaction equals the reaction's change in free energy. The negative of this quantity appears in the exponential of the Arrhenius equation, dividing RT. Catalysts decrease this quantity. For 10 points, name this quantity, the energy barrier for a reaction to take place.
ANSWER: **activation energy** [or free **energy of activation**; or **E sub A**]

190-13-93-06133

3. This poet wrote of a man who returns from being lost at sea to find that his wife has married his childhood friend in "Enoch Arden." He wrote a dramatic monologue where the title character begs Eos for death, "Tithonus." In one of his last poems, he compares life to a boat which is captained by God. His most famous poem begins "Half a league, Half a league, half a league onward" and describes a disastrous cavalry charge against Russian soldiers. For 10 points, name this Victorian-era poet of "Crossing the Bar" and "Charge of the Light Brigade."
ANSWER: Alfred **Tennyson**, Lord **Tennyson**

230-13-93-06134

4. Attorney General William Mitchell's sanctioning of the shooting of William Hushka and Eric Carlson caused controversy due to Hushka and Carlson holding this status. Smedley Butler publicized the plight of these people. Many of them followed Walter Waters and erected a campsite at Anacostia Flats in their quest to immediately cash in certificates promised to them by the Adjusted Compensation Act. For 10 points, name these members of the "Bonus Army," who had served in World War I.
ANSWER: U.S. **veteran**s [or members of the **Bonus Army** until it is read]

020-13-93-06135

5. A mutation in the GAA gene, which codes for a protein in this organelle, causes the accumulation of glycogen known as Pompe's disease. Another gene coding for a protein in this organelle is HEXA, a mutation in which causes the disease that results in the buildup of gangliosides in neurons, Tay-Sachs. Old or unneeded cell parts are targeted for this organelle, which releases its contents during apoptosis. These organelles have a low pH of around 4.5. For 10 points, name this organelle that digests molecules in a cell.
ANSWER: **lysosome**s

140-13-93-06136

Name the inventor who revolutionized an American industry with his 1793 creation of the cotton gin.
ANSWER: Eli **Whitney**

This is a calculation question. What is the surface area of a sphere whose great circle has circumference 6 pi?
ANSWER: **36** times **pi** square units