1. In one of this man's plays, Abbie Putnam kills her baby as Eben schemes to inherit the farm of his father, Ephraim Cabot. This author of *Desire Under the Elms* also created "Hickey" Hickman, who realizes that people must hold on to their pipe dreams. Mary is addicted to morphine and married to the actor James in this man's play about the Tyrone family. For 10 points, name this American playwright of *The Iceman Cometh* and *Long Day's Journey into Night.*
ANSWER: Eugene **O'Neill** [or Eugene Gladstone **O'Neill**]

149-12-73-05101

2. In one of this man's works, a character teaches a slave geometry to prove that learning is only recollection. Characters try to define virtue in that work, the *Meno.* He described people chained so that they could only see shadows reflected on a wall in his Allegory of the Cave in another work. This man developed the Theory of Forms, the highest of which was the Good, which he describes in *The Republic.* For 10 points, name this student of Socrates.
ANSWER: **Plato**

121-12-73-05102

3. One character in this novel remarks, "He's more myself than I am. Whatever our souls are made of, his and mine are the same." Minor characters in this work include a housekeeper named Zillah and a religious fanatic named Joseph. Nelly Dean narrates a portion of this work, and Mr. Lockwood rents Thrushcross Grange in this novel. The Linton family is central to this novel, which focuses on the romance between Catherine Earnshaw and Heathcliff. For 10 points, identify this novel written by Emily Bronte.
ANSWER: ***Wuthering Heights***

189-12-73-05103

4. This river passes through the Mather Gorge after it gains speed descending Great Falls. One of this river's tributaries is the Monocacy River. A 1910 Supreme Court case set this river as the border between West Virginia and Maryland. This river meets the Shenandoah River at the town of Harpers Ferry. This river, with North and South branches, flows into Chesapeake Bay. For 10 points, name this river that passes through Washington, D.C.
ANSWER: **Potomac** River

023-12-73-05104

5. These objects can form when a body's mass passes the Tolman-Oppenheimer-Volkoff limit. These objects can be completely described by mass, angular momentum, and electric charge, according to the "no hair" theorem. It is believed that almost all galaxies have a supermassive one of these objects at their center. For 10 points, name this astronomical objects within which gravity is so strong that not even light can escape.
ANSWER: **black hole**s

014-12-73-05105

6. The stock characters of Pierrot and Arlecchino play this role. An early form of this word referred to any country person lacking in culture and sophistication. Shakespeare sometimes uses this word in his plays to designate characters such as the gravediggers in Act 5 of *Hamlet*. People suffering from coulrophobia have a fear of the performers who bear this title. For 10 points, what is this word that refers to the comic performers in a traditional circus?
ANSWER: **clown**

7. In his highest post, this man demanded the resignation of Chester Arthur from the New York customs-house. His teetotaling wife was nicknamed "Lemonade Lucy." He was derisively called "His Fraudulency" after coming to office in a close election. Justice Joseph Bradley was on a commission that named this man President following that race against Samuel Tilden. For 10 points, name this President who succeeded Ulyssees S. Grant and brought an end to Reconstruction.
ANSWER: Rutherford Birchard **Hayes**

8. This law contributes the first term of the Lorentz force. The constant in this law equals one over four pi times the permittivity of free space. An expression for electric field can be calculated by dividing both sides of this equation by a test charge. Like Newton's Law of Gravitation, this law gives an inverse-square dependence on distance. For 10 points, name this law which gives the force between two stationary charges, named for a Frenchman who also names the SI unit of charge.
ANSWER: **Coulomb**'s Law

9. This city's influence in Sicily was weakened after its defeat in the battle of Himera. It contained the "Tophet of Salammbo" where skeletal remains suggest children may have been sacrificed to Ba'al Hammon. In one war, this city's opponent used a boarding device called a corvus to attack its ships. In another war, this city lost at the Battle of Zama after a huge victory at Cannae. For 10 points, name this opponent of Rome in the Punic Wars and home of Hannibal.
ANSWER: **Carthage** [or **Carthago**; or **Kart-hadasht**]

10. He wrote a novel about how the creation of "Boomfood" results in a war between giants and humans titled *The Food of the Gods.* This author also wrote a work about the Eloi's struggle against the molelike Morlocks. He also wrote a novel in which Ogilvy discovers the landing site of cylinders, from which emerge beings who lack immunity to Earth's bacteria. For 10 points, name this author of *The Time Machine* and *The War of the Worlds*.
ANSWER: H. G. **Wells** [or Herbert George **Wells**]

11. Muhammad was able to convert the servant-boy Addas to Islam by saying of this man, "we are brothers." This person, who unluckily loses a game of casting lots, is provided shade by a plant until a worm causes the plant to wither away. This happens to him because he went to Jaffa, then Tarshish, instead of Nineveh. For 10 points, name this prophet who was swallowed by a giant fish.
ANSWER: **Jonah** [or **Yona**; or **Yunus**; or **Dhul-Nun**; or **Ionas**]

12. During one part of this story, three lodgers are disgusted with the conditions of the main family's apartment. The central family of this story includes a girl who plays the violin for those lodgers and is named Grete. The father in this story throws apples at his son, who is injured by one and dies, allowing his family to improve their living situation. For 10 points, name this work about Gregor Samsa's unexpected change into an insect, written by Franz Kafka.
ANSWER: "The **Metamorphosis**" [or "Die **Verwandlung**"]

13. A Ramachandran plot shows the bond angles psi and phi in these molecules. One of these molecules is an excitatory neurotransmitter in the central nervous system and opposes the actions of GABA. They exist predominantly in the L stereoisomer. The sequence in which they bind determines primary structure, and those that cannot be synthesized by the body are known as "essential." When these molecules are linked, they form peptide bonds. For 10 points, name these building blocks of proteins.
ANSWER: **amino acid**s [or **protein**s until it is read; or **peptide**s until it is read]

14. This man hired the boxer Harry Bennett to attack union leaders including Walter Reuther. He doubled wages when he introduced a wage of five dollars per day. He published the anti-Semitic *Protocols of the Elders of Zion* in his newspaper, the *Dearborn Independent.* This man said consumers could have one of his company's products in any color "so long as its black." For 10 points, name this businessman whose company produced the Model T automobile.
ANSWER: Henry **Ford**

15. During the Gulf War, this ship was involved in a friendly fire incident with the USS *Jarrett*. It was once William Halsey's flagship. A prominent tophat was worn by Foreign Minister Mamoru Shigemitsu in a ceremony aboard this vessel, during which it flew the flag that was over the White House on December 7, 1941. For 10 points, name this battleship on which Admiral Chester Nimitz and Douglas MacArthur accepted the Japanese surrender in 1945.
ANSWER: USS *Missouri*

1A. What father of Carl Philipp Emanuel wrote the *St. Matthew Passion* and the *Brandenburg Concertos?*
ANSWER: **Johann Sebastian Bach** [or **J.S. Bach**; prompt on **Bach**]

1B. What Dutch computer scientist has a namesake algorithm that solves the shortest path problem for a graph with nonnegative edge path costs?
ANSWER: Edsger **Dijktsra** (dyke-stra)


2A. What Baroque Italian composer wrote some of the earliest operas, such as *L'Orfeo* and *The Coronation of Poppaea*?
ANSWER: Claudio **Monteverdi**

2B. What Orson Welles film revolves around the cryptic dying word "Rosebud," spoken by the namesake newspaper magnate?
ANSWER: *Citizen Kane*

3A. What French sociologist wrote books on *The Division of Labor in Society* and *Suicide?*
ANSWER: Émile **Durkheim**

3B. What floppy-haired Spanish point guard joined the Minnesota Timberwolves in 2011?
ANSWER: Ricky **Rubio** [or Ricard **Rubio** Vives]

4A. This is a 20-second calculation question. What is the cosine of the third-quadrant angle whose reference angle is 60 degrees?
ANSWER: **-1/2** [or **-0.5**]

4B. This is a 20-second calculation question. What is the sample variance of a set whose sample standard deviation is 16?
ANSWER: **256**

5A. Which group of elements, with atomic numbers 57 through 71, demonstrates a namesake "contraction" as a result of poor shielding by 4f electrons?
ANSWER: **lanthanide**s [or **lanthanoid**s]

5B. Which brain region behind the brain stem is responsible for ensuring coordinated, precise movements?
ANSWER: **cerebellum**

6A. What state's Indian-American governor, Nikki Haley, is tasked with replacing retiring senator Jim DeMint?
ANSWER: **South Carolina**

6B. What scale of hardness, named for an Austrian geologist, is based on a scratch test?
ANSWER: **Mohs** hardness scale

7A. Mad scientist Walter Bishop appears on what FOX series, created by J.J. Abrams, about a division of the FBI investigating paranormal activity?
ANSWER: *Fringe*

7B. What English scientist discovered the principle of electromagnetic induction on which electric generators are based?
ANSWER: Michael **Faraday**

8A.  This is a 30-second calculation question. Find all x-intercepts of the curve y = x^3 - 3x^2 - x + 3 (READ: "y equals x cubed minus three x squared minus x plus three").
ANSWER: **-1, 1, and 3** [or **(-1,0), (1,0), (3,0)**; do not accept or prompt on partial answer]

8B.  This is a 30-second calculation question. A hexagon has angles measuring 135, 135, 150, 110, and 105 degrees. What is the measure of the sixth angle?
ANSWER: **85** degrees

9A.  What country was once ruled by "Papa Doc" Francois Duvalier, who employed a secret police force called the Tonton Macoutes (TAWN-TAWN mah-COOT)?
ANSWER: Republic of **Haiti** [or Republique d'**Haiti**; or Repiblik d' **Ayiti**]

9B.  What character fights Daniel Webster in court over the fate of the farmer Jabez Stone in a Stephen Vincent Benet short story?
ANSWER: the **Devil** [or Mr. **Scratch**]

10A.  The highest mountain in the Americas, Aconcagua, is located in what South American country?
ANSWER: **Argentina** [or **Argentine Republic**]


10B.  What English verb is translated as "être" (AH-tur) in French and "estar" (es-TAR) or "ser" (SAIR) in Spanish?
ANSWER: to **be**

1. A variable amount for this quantity can be achieved by using a rheostat. Unknown values for this quantity can be measured with a Wheatstone bridge. This quantity is inversely proportional to cross-sectional area and directly proportional to length. AC circuits use an analog of this concept called impedance. Deriving it from Ohm's law yields the relation "voltage over current." For 10 points, name this quantity defined as the amount of opposition to electric current, measured in ohms.
ANSWER: **resistance**

140-12-73-05117

2. This author wrote a story in which the title brothers O.T. and E.T. are contrasted with the children of a woman goared by a bull, Mrs. May. In addition to "Greenleaf," she wrote about the abandonment of the deaf-mute daughter of Lucynell Crater at a truck stop by Tom Shiftlet. This author of "The Life You Save May Be Your Own" wrote a work in which the cat Pitty Sing travels with a family who are murdered by The Misfit. For 10 points, name this author of "A Good Man Is Hard to Find."
ANSWER: Flannery **O'Connor** [or Mary Flannery **O'Connor**]

030-12-73-05118

3. A Joan Miro painting shows one of these animals attempting to communicate with the moon. A frame-by-frame view of one of these animals with a woman is shown in Giacomo Balla's painting of their "Dynamism." One of them is on the bed in Titian's *Venus of Urbino,* and one of these animals sits at the feet of the bride in Jan van Eyck's *Arnolfini Wedding.* For 10 points name these animals who, in a series by C. M. Coolidge, play poker.
ANSWER: **dog**s [or equivalents such as **hound**s or **canine**s]

030-12-73-05119

4. One example of this curve is the polar equation "r equals one over quantity one plus cosine theta." This curve is defined as the locus of points equidistant from a focus and a directrix. Neglecting air resistance, this curve can be used to model projectile motion. In rectangular coordinates, the equations of these curves are quadratic in either x or y, but not both. It possesses a vertex and an axis of symmetry. For 10 points, name this curve, exemplified by the equation "y equals x-squared."
ANSWER: **parabola**

131-12-73-05120

5. This country's residents celebrate an annual festival whose events include horse racing, archery, and wrestling, known as "naadam." With its northern neighbor, this country contains Uvs Lake. This country is subject to harsh winter storms known as "zuds." The least densely populated country in the world, a large portion of it is located within the Gobi desert. For 10 points, name this landlocked country found between Russia and China.
ANSWER: **Mongolia**

140-12-73-05121

6. For a wavefunction, the square of the "probability" form of this quantity is the probability of observing a given quantum state. The RMS value for a sinusoidal function equals this value over the square root of two. It's not frequency, but radio waves can be transmitted by modulating this quantity. For the wave equation, this quantity multiplies the outside of the trigonometric function. This quantity equals the distance between crest and trough over two. For 10 points, name this quantity, the "height" of a wave.
ANSWER: **amplitude**

7. In one story by this man, a little boy asks, "What did one wall say to the other?" In that story, an American soldier opens a box with a broken wristwatch in it. In addition to writing "For Esme - With Love and Squalor," this author described Seymour Glass's suicide in "A Perfect Day for Bannanafish." In another work by this man, the word "phony" is used repeatedly by Phoebe's brother, Holden Caulfield. For 10 points, name this author of *The Catcher in the Rye.*
ANSWER: J. D. **Salinger** [or Jerome David **Salinger**]

8. This protein's components are encoded by a group of duplicated genes under sway of a Locus Control Region. This protein switches between taut and relaxed forms in a type of cooperativity. A glutamic acid to valine mutation in this protein causes the cells carrying it to take on a curved shape. This protein contains a porphyrin (POR-fuh-rin) ring with a central iron atom. For 10 points, name this protein, found in red blood cells, that carries oxygen.
ANSWER: **hemoglobin** [or **Hb**]

9. Forces supporting this ruler were victorious in the Battle of Villalar during the Revolt of the Comuneros. As a child, this man was tutored by the future Pope Adrian VI and raised by his aunt Margaret of Austria. This ruler succeeded his mother Joanna the Mad on one throne, and he was the last ruler crowned by the Pope on another throne. For 10 points, name this Hapsburg ruler who was both King of Spain and Holy Roman Emperor, and who presided over the Diet of Worms attended by Martin Luther.
ANSWER: **Charles V** of the Holy Roman Empire [or **Charles I** of Spain; prompt on **Charles**]

10. This singer proposed establishing a national holiday for Elvis Presley's death in his song "If the South Woulda Won." He finished an unreleased song by his father, "There's a Tear in My Beer." He compared Barack Obama to Hitler on *Fox and Friends,* after which his song "All My Rowdy Friends Are Coming Over Tonight" was dropped as the theme song to *Monday Night Football.* For 10 points, name this musician, the son of the 1950s country singer who recorded "Your Cheatin' Heart."
ANSWER: Hank **Williams, Jr.** [or **Randall** Hank **Williams**; or **Bocephus**; prompt on **Williams**]

11. This politician introduced his country's first minimum-wage policy while serving as president of the Board of Trade. Herbert Asquith appointed this politician to the position of First Lord of the Admiralty, from which he resigned after the Gallipoli Campaign. This man used the phrase "this was their finest hour" in one of his speeches, and this predecessor to Clement Atlee attended the Tehran and Yalta Conferences with Roosevelt and Stalin. For 10 points, name this prime minister of Britain during World War II.
ANSWER: Winston Leonard Spencer **Churchill**

12. A composition of Otto Skadelig is used to torture a character in this work. Mr. Deltoid spits in the face of this novel's main character after that character kills the wife of the author Alexander. This novel begins with the main character meeting with Dim, Pete, and Georgie at the Korova Milkbar, and that protagonist undergoes Brodsky's Ludovico Technique. For 10 points, name this novel narrated in the fictional language of Nadsat by Alex, a work of Anthony Burgess.
ANSWER: A _**Clockwork Orange**_

13. This person was implicated in a scandal in which Ralph Blewitt and Bruce Wilson embezzled money raised from construction companies. After Speaker of the House Peter Slipper resigned, this person called out opposition leader Tony Abbott for misogyny. This person won a leadership contest in the Labour Party, replacing Kevin Rudd in 2010. For 10 points, name this current prime minister of Australia, the first woman to hold that position.
ANSWER: Julia Eileen **Gillard**

14. Fermat primes are involved in the constructibility of one type of these figures with a compass and straight edge. These figures are convex if they have no reflex angle. The formula "n minus two times 180 all divided by n" can be used to calculate the interior angle of one type. The faces of Platonic solids consist of "regular" ones of these figures, which means that all their angles and sides are equal. For 10 points, identify these two-dimensional closed shapes made of straight lines.
ANSWER: **polygon** [or **n-gon**]

15. In a play by Sophocles, this man and Neoptolemus (nee-op-TALL-eh-mis) try to convince Philoctetes to join them at Troy. Palamedes (pal-uh-MEE-deez) proved this man was not mad by placing his son in front of an oncoming plow. He spent seven years imprisoned by Calypso, and angered Poseidon by blinding the cyclops Polyphemus. He and his son Telemachus (teh-LEM-uh-kus) defeat the suitors of his wife Penelope. For 10 points, name this king of Ithaca whose journey home is recounted in a Homeric epic.
ANSWER: **Odysseus** [or **Ulysses**]

1. This element's nitrate, once called "lunar caustic," can be used to test for the presence of halide ions because it forms cream-colored halide precipitates. The light-sensitive material used in daguerrotypes was this element's iodide, which today is used to seed clouds. By far, its most common oxidation state is plus-1, and it is the second "noble metal." It has the greatest thermal and electrical conductivity of any element. For 10 points, name this element with atomic number 47 and symbol Ag.
ANSWER: **silver** [or **Ag** until it is read]

190-12-73-05132

2. Garry Willis compared this speech to Pericles' Funeral Oration in a book on it. The version usually read today comes from the Bliss copy. Only ten sentences long, this speech followed a longer oration by Edward Everett. This speech claims "the world will little note, nor long remember what we say here" and it resolves "government of the people, by the people, for the people, shall not perish from the earth." For 10 points, name this dedicatory speech that begins "Four score and seven years ago..."
ANSWER: **Gettysburg Address**

121-12-73-05133

3. In one novel, a member of this profession obtains a position for his charge as a secretary to the Marquis de la Mole. That member of this profession, Pirard, and another member of this profession, Chélan, are mentors to Julien Sorel in Stendhal's novel *The Red and the Black.* Another member of this profession stabs Phoebus out of his jealousy for Esmerelda. For 10 points, name this profession of Claude Frollo, who is employed at the title location of *The Hunchback of Notre-Dame.*
ANSWER: **priest**s [or reasonable equivalents, such as **clergymen**, **pastor**s, or **reverend**s]

030-12-73-05134

4. This technique can be used to measure the average molecular weight of fatty acid chains by finding its saponification value. The graph illustrating this process has its steepest slope at the equivalence point, which shows where the amount of added substance is enough to neutralize the analyte. That point is often found by a change in a pH indicator. It usually uses a flask with the analyte and a calibrated burette with the standard solution. For 10 points, name this technique for determining a substance's concentration.
ANSWER: **titration**

121-12-73-05135

5. One character in this work, with a mulberry birthmark, claims to have seen a "snake thing," but he disappears after a fire goes out of control. In this novel, the twins Samneric are frightened "the beast" that is later discovered by Simon. A conch shell allows people to speak in this work, in which the choir boys become hunters under Jack. For 10 points, name this work about Piggy and Ralph, boys stranded on an island after a plane crash, written by William Golding.
ANSWER: *__Lord of the Flies__*

023-12-73-05136

This is a calculation question. If the surface area of a perfect cube is 150 square inches, what is the cube's volume?
ANSWER: **125** cubic inches

What French impressionist painted the portrait *Luncheon of the Boating Party*?
ANSWER: Pierre-Auguste **Renoir**