1. In this play, one character is supposed to bring fifty cents to school before being given an entire dollar. In this play, Willy Harris tries to start up a liquor store, and Joseph Asagai calls one of the characte's "Alaiyo." One character locks herself in her room after her husband refuses to talk about her pregnancy. The central family in this play, including Walter Lee and Ruth, acquires a ten thousand dollar insurance check and buys a house in Clybourne Park. For 10 points, name this play about the Younger family by Lorraine Hansberry.
ANSWER: A _**Raisin in the Sun**_

149-12-56-06101

2. Arthur Kornberg discovered one enzyme involved in this process, though it was not the primary one as was originally thought. Errors created by this process are removed by nuclease, and the staggered ends it produces lead to degradation of telomeres. The lagging strand in this process is built from Okazaki fragments, which are connected by ligase. The material undergoing this process is cut by topoisomerase and unwound by helicase. For 10 points, name this process in which an organism's genetic material is copied.
ANSWER: **DNA replication**

132-12-56-06102

3. At one point in this poem, the speaker states, "By the waters of Leman I sat down and wept" before recounting an exchange with the Smyrna merchant Mr. Eugenides. Near the end of this poem, the speaker notes, "Here is no water but only rock" and eventually concludes, "These fragments I have shored against my ruins." This poem's first section, "The Burial of the Dead," opens with the line, "April is the cruelest month." For 10 points, name this long modernist poem by T. S. Eliot.
ANSWER: "The **Waste Land**"

014-12-56-06103

4. According to one story, this general, after being charged with training 180 concubines of a king into soldiers, executed the king's two favorite concubines when his commands were met with giggling. His best known work is a text of thirteen chapters, whose titles include "Attacking with Fire," "Weaknesses and Strengths," and "The Nine Battlegrounds." For 10 points, name this historical figure who is believed to be the author of *The Art of War*.
ANSWER: **Sun Tzu** [or **Sun Wu**; or **Sunzi**; or **Changqing**; prompt on **Sun**]

088-12-56-06104

5. With kinetic energy, this quantity is unchanged in a Joule-Thompson process. One form of this quantity, that describes the binding in an ionic solid, is calculated using a Born-Haber cycle and is the lattice variant. It is equal to internal energy plus pressure times volume. The Gibbs free energy of a system is defined as this quantity minus temperature times entropy. For 10 points, name this quantity symbolized H, that represents the total energy of a system under constant pressure.
ANSWER: **enthalpy** [prompt on **H** before mentioned; prompt on **heat**]

066-12-56-06105

6. One novel by this author centers on an annual pageant performed at the country estate of Bartholomew Oliver. She wrote another novel that consists of dialogues between Bernard, Susan, Rhoda, Neville, Jinny, and Louis. This author of *Between the Acts* and *The Waves* was a member of the Bloomsbury Group. She discussed "Judith Shakespeare" in her feminist essay *A Room of One's Own* and wrote about Clarissa's preparations for a party in another novel. For 10 points, name this British author *To the Lighthouse* and *Mrs. Dalloway.*
ANSWER: Adeline Virginia **Woolf**

7. Noam Chomsky offered a critique of this man's attempt at "functional analysis" in the book *Verbal Behavior.* His namesake box is used to demonstrate operant conditioning, and he raised his daughter in the "air crib." This student of John Watson created a method to instruct pigeons to play table tennis and guide missiles. This psychologist described a utopian society in *Walden Two.* For 10 points, name this American psychologist who wrote *Beyond Freedom and Dignity* and pioneered radical behaviorism.
ANSWER: Burrhus Frederick **Skinner**

8. This state's geographic center is located near Clanton in its Chilton County. Its highest point, Mount Cheaha, is located in the Talladega National Forest. Other features include Russell Cave National Monument in Bridgeport and the Rockwood Caverns State Park. Physiographical regions here include the Highland Rim and Piedmont Upland. Robert Jemison Van de Graaff was born in a famous mansion in Tuscaloosa here. For 10 points, name the state bordered by Tennessee, Georgia, Florida and Mississippi, with its capital at Montgomery.
ANSWER: **Alabama**

9. During the transition to this phase, the protein geminin is degraded by its namesake promoting complex, which also starts this phase by tagging securin for destruction by a proteasome. This phase begins with the separation of the centromeres of sister chromatids, which then move to opposite ends of the cell. By the end of this phase, a complete set of chromosomes has been formed at each end of the cell. For 10 points, name this second-to-last phase of mitosis which precedes telophase.
ANSWER: **anaphase**

10. At the end of the *Glee* episode "Mash Off," two songs by this singer are sung in a mash-up by the Troubletones. One of those songs by this artist includes the line that she hates "to turn up out of the blue, uninvited." Another song by this woman begins with the lyric, "There's a fire starting in my heart." For 10 points, name this female British recording artist of "Rumour Has It," "Someone Like You," and "Rolling in the Deep."
ANSWER: **Adele** [or Adele Laurie Blue **Adkins**]

11. In 2006, Pope Benedict visited one of these buildings that is known for its distinct blue tiling. In these buildings, indentations known as the mihrab are found. Those indentations are always on the side of the building that faces qibla, the direction to the Ka'aba. The Hagia Sophia was converted into one of these buildings after the conquest of Constantinople. The Adhan is used to call the faithful to prayer five times a day from atop a minaret attached to these buildings. For 10 points, name these buildings in which Muslims practice their religion.
ANSWER: **mosque**s

12. The power of this state was demonstrated in 1656 by two greased and joined pieces of copper which were attached to teams of horses in the Magdeburg Hemispheres experiment of Otto von Guericke (guh-REH-kee). Guericke built on the work of Evangelista Toricelli (eh-van-guh-LEE-stuh torr-ih-CHEH-lee) in creating this state, which was also studied by Robert Boyle and Robert Hooke. Creating this state was an important goal of seventeenth-century science, in order to aid in mining and drainage projects. For 10 points, identify this physical state consisting of the absence of all matter.
ANSWER: **vacuum**

13. This battle involved an assault under General Reille against a farmhouse called the Hougoumont. Attacks by Marshal Ney's calvary in this battle were repelled by the formation of squares by the opposing troops. This battle was the site of the first defeat of the Imperial Guard, which led to a charge by Wellington's army. For 10 points, name this 1815 battle that ended the Hundred Days by being the final defeat of Napoleon Bonaparte.
ANSWER: Battle of **Waterloo**

14. This island is home to the institute which designed three "Melody Roads" for its country. Wakkanai is the northernmost city on this island, which was named by the Maiji government based on its Ainu name. The city of Hakodate is in the southernmost prefecture on this island. The Seikan Tunnel is used to bring traffic across the Tsugaru Strait to this island for occasions such as the annual Snow Festival, or Yuki-Matsuri, which is held in this island's town of Sapporo. For 10 points, name this northernmost of the four main islands of Japan.
ANSWER: **Hokkaido**

15. This god's oracles would read the rustling of oak leaves. He killed Salmoneus for impersonating him and he bound Ixion to a burning wheel for trying to have an affair with his wife. This god was raised in a cave by the goat Amalthea (ah-mal-THEE-uh) after his mother disguised a stone as him in order to save him from being eaten by his father, Cronus. His many affairs were resented by his jealous wife, Hera. For 10 points, name this ruler of Olympus, the Greek god of thunder.
ANSWER: **Zeus**

1A. What Democrat from Colorado is the current Secretary of the Interior?
ANSWER: Kenneth **Salazar**

1B. Name the noun case, absent from ancient Greek, which in Latin is used to express means, accompaniment, and manner, among numerous other uses.
ANSWER: **ablative** case

2A. What term, whose name comes from the Italian for "walking," denotes a relatively slow tempo for music?
ANSWER: **andante**

2B. Name the technique from object-oriented programming in which a newly created child class has the same attributes as the parent class from which it is derived.
ANSWER: **inheritance** [or **subclass**es]

3A. What artist of a painting of the *Old Battersea Bridge* sued John Ruskin for criticizing *Nocturne in Black and Gold: The Falling Rocket*?
ANSWER: James **Whistler**

3B. This is a 10-second calculation question. For how many distinct values of *b* does the polynomial $x^2 + bx + 12$ have two real integer roots?
ANSWER: **6**

4A. This is a 10-second calculation question. A tow truck pulls seven plus or minus two cars on each shift. How many cars can it pull in two shifts? Express your answer as a range of two numbers.
ANSWER: **30 to 54** cars [or **[30, 54]**; or **30, 54 inclusive**]

4B. What method of differentiation is used to find the derivative of y with respect to x for a function of the form f(x,y) ("f of x comma y") equals c?
ANSWER: **implicit** differentiation

5A. What actress was Oscar-nominated in 2012 for portraying Margaret Thatcher?
ANSWER: Meryl **Streep**

5B. What British playwright wrote about the confiscation of the property of Barabas in the *The Jew of Malta*?
ANSWER: Christopher **Marlowe**

6A. What European country, led by Viktor Orban of the Fidesz (fid-ESH) Party, aroused controversy in January 2012 with a new constitution that compromises the independence of its central bank?
ANSWER: Republic of **Hungary** [or **Magyarorszag**]

6B. This is a 20-second calculation question. Two cards are drawn from a standard deck of card without replacement. What are the odds they are two sixes? Express your answer as the simplest ratio of whole numbers.
ANSWER: **1:220** for [or **220:1 against**]

7A. This is a 20-second calculation question. Convert the point (-2, 2pi/3) in polar coordinates to Cartesian coordinates.
ANSWER: **(1, -sqrt(3))**

7B. In what opera by Georges Bizet does Escamillo sing the Toreador Song?
ANSWER: _**Carmen**_

8A. What types of mixtures cannot be separated by simple distillation, since the ratio of their components is the same in the vapor phase as in the liquid phase?
ANSWER: **azeotrope**s (AY-zee-oh-tropes)

8B. What Beat poet wrote "I saw the best minds of my generation destroyed by madness" in his poem "Howl"?
ANSWER: Allen **Ginsberg**

9A. This is a 30-second calculation question. Solve: $x^3 - 4x^2 - 51x + 54 = 0$.
ANSWER: **{-6, 1, 9}** [accept the three numbers in any order; do not accept partial answer]

9B. This is a 30-second calculation question. In quadrilateral ABCD, angles A and C measure 105 degrees, angle B measures 90 degrees, and angle D measures 60 degrees. If AB has length 2 units, what is the area of quadrilateral ABCD, in simplest radical form?
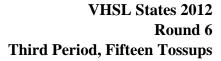ANSWER: **4 + 4** times the square **root** of **3** square units [or **4+4sqrt(3)** square units]

10A. What neurodegenerative, recessive disorder often found Ashkenazi Jews is marked by a red spot on the retina and often results in death by age four?
ANSWER: **Tay-Sachs** disease

10B. What English painter created _The Blue Boy_?
ANSWER: Thomas **Gainsborough**

1. During a trip to Athens, this ruler created a league of Greek cities called the Panhellenion. This lover of the youth Antinous was also responsible for putting down the rebellion of Simon Bar Kokhba. A long earthwork called the vallum was built by this emperor as part of a larger series of towers and forts along a structure named for this emperor. For 10 points, name this Roman emperor who succeeded Trajan and was responsible for building in northern Britain a namesake wall.
ANSWER: Caesar Traianus **Hadrian**us Augustus [or Publius Aelius **Hadrianus**]

023-12-56-06117

2. At a party in this novel, a man announces "you've lost your bet" to the enigmatic actress Sappho Stoltz. Another character plans for a collective system of agriculture after picking up a scythe and laboring in his own vast landholdings with his serfs. The title character spends time in Italy before returning to see Seryozha. Stepan Oblonsky cheats on Dolly and Konstantin Levin finally decides to marry Kitty in subplots from this novel, whose protagonist embarks on an affair with Count Vronsky. For 10 points, name this work by Leo Tolstoy which ends after the title middle-class woman throws herself under a train.
ANSWER: *Anna Karenina*

019-12-56-06118

3. This city's St. Margaret's Church has hosted many weddings of the social elite and is the burial location of William Caxton. Recent construction projects here have included a possible cable car over its major waterway and the development of a high-speed javelin train in its subway system. Both of those improvements will hopefully decrease travel times for athletes and spectators who will be drawn to this city in 2012 for the Summer Olympics. For 10 points, name this city on the River Thames.
ANSWER: **London**

040-12-56-06119

4. Anticyclones have a central region with a high value for one form of this quantity. One example of the Bernoulli (burr-NEW-lee) effect is the reduction of one form of this quantity as fluid speed increases. Lines on a weather map where one form of this quantity is constant are called isobaric lines, and it is measured with a barometer. Yet another form of this quantity is multiplied by temperature in the ideal gas law. For 10 points, name this term that refers to force per unit area.
ANSWER: **pressure** [accept atmospheric **pressure**]

066-12-56-06120

5. One scene in this novel involves a narrow escape from the Biglugs. This novel's title character frees two friends from a chain gang, but later sends one of them back. One character in this work is owned by both Don Isaachar and the Grand Inquisitor of Lisbon. Another character in this work contracts syphilis from Paquette. The title character loves Cunegonde and is taught that this is "the best of all possible worlds" by a character who parodies Leibniz, Dr. Pangloss. For 10 points, name this novella by Voltaire.
ANSWER: *Candide* (can-DEED)

132-12-56-06121

6. Bernie Parent's career was ended by an eye injury while playing for this team, which has lost in its last six Stanley Cup Finals appearances. This team signed Ilya Bryzgalov in an offseason that also included the trades of Jeff Carter and Mike Richards. In the late 1990s, this team's "Legion of Doom" was led by John LeClair and the concussion-prone Eric Lindros. For 10 points, name this team, now led by Danny Briere, that hosted the 2012 Winter Classic at Citizen's Bank Park and plays its home games in the Wells Fargo Center.
ANSWER: **Philadelphia** Flyers [or Philadelphia **Flyers**]

7. This author remembered his time being publicly humiliated in *A Hymn to the Pillory;* that punishment was for his satire that called for the execution of nonconformists, *The Shortest Way with the Dissenters.* As an author of fiction, he created a man who fights wolves in the Pyrenees and counts the days using notches on a cross. That character, who was created when this author read about Alexander Selkirk, frees a prisoner from cannibals on a Friday. For 10 points, name this author of a novel about a shipwrecked slave-trader, *Robinson Crusoe.*
ANSWER: Daniel **Defoe**

8. This technology is used in a type of active observation astronomy, where its strength depends inversely on the fourth power of the distance to an object. One type of this device uses the Doppler effect to detect speed. Nap-of-the-earth is one way to exploit the horizon of this technology and is also known as flying under it. For 10 points, name this system of detecting objects that uses radio waves and which is used to detect weather formations, such as thunderstorms.
ANSWER: **radar** [or **radio detecting and ranging**]

9. This figure was once stopped by two scorpion guards while trying to pass under a two-peaked mountain. One friend of this figure was rejected by the animals that raised him after that friend slept with a woman. This figure ruled a city that was struck by famine by the Bull of Heaven. The flood survivor Utnapishtim told him how to find a plant of immortality, which was then stolen from him by a serpent; he began to seek immortality while grieving the death of his companion, Enkidu. For 10 points, name this king of Uruk, the title character of a Sumerian epic.
ANSWER: **Gilgamesh**

10. One character in this play relates a dream in which "methought I saw a thousand fearful wrecks; ten thousand men that fishes gnawed upon" before he is drowned in a butt of wine. One character celebrates his trickery in a speech beginning, "Was ever woman in this humor wooed?" That title man describes how "our stern alarums changed to merry meetings" in an opening monologue declaring, "Now is the winter of our discontent made glorious summer by this sun of York." For 10 points, name this Shakespearean history about a king who dies after exclaiming, "A horse, a horse! My kingdom for a horse!"
ANSWER: *Richard III*

11. Décollement (DAY-cole-mohn) creates foreland basins adjacent to these structures, in which molasse is deposited. Biomes associated with these structures follow patterns of increasing latitudes and are termed "orobiomes." Little rain is received on the lee side of these structures due to the rain shadow effect. These structures can form over hot-spots. For 10 points, name these elevated regions that form peaks, examples of which include the Himalayas.
ANSWER: **mount**ain ranges [or **mount**ains]

12. One action in this war saw George Rooke lead an assault on Cadiz that resulted in the destruction of much of the Spanish Treasure Fleet in the Battle of Vigo Bay. A decisive attack was made by the Earl of Orkney to defeat the forces of the Duc de Villars in one battle from this war at Malplaquet. The Duc de Tallard lost to the combined forces of Eugene of Savoy and the Duke of Marlborough in this war's Battle of Blenheim. For 10 points, name this war ended by the Treaty of Utrecht in 1713.
ANSWER: War of the **Spanish Succession**

13. The Canadian Caper involved the rescue of six diplomats during this event, and the Algiers Accords ended it. Operation Eagle Claw was a failed attempt to resolve this event that resulted in the death of eight Americans. This event lasted for 444 days, but it ended minutes after Reagan became President, and it was a main reason for Carter's defeat in 1980. For 10 points, name this event during which fifty-two Americans were held captive in the embassy in Tehran.
ANSWER: **Iran hostage** crisis

14. *Margin* is a magazine dedicated to works of this literary style, and Alejo Carpentier (uh-LAY-hoe car-PEHN-tee-ay) was a practitioner of it. Laura Esquivel's novel *Like Water for Chocolate* is an example of a work employing this literary style, and the McOndo movement is a deliberate break with this style. This term describes a novel whose characters include the gypsy Melquiades called *One Hundred Years of Solitude.* For 10 points, name this literary style exemplified by the work of Gabriel Garcia Marquez, which blends ordinary and fantastic elements.
ANSWER: **magical realism** [or **magic realism**; or obvious equivalents]

15. This man privately circulated a pamphlet called *The Public Conduct and Character of John Adams*, which became public. He influenced Henry Clay's later "American System" with his *Report on Manufactures*. His support of an active government and strong industry contrasted with Thomas Jefferson. During the Election of 1800, he made an enemy by voting for Jefferson as President over Jefferson's running mate. For 10 points, name this first Secretary of the Treasury who was killed in a duel with Aaron Burr.
ANSWER: Alexander **Hamilton**

1. These objects can be created by the Czochralski process. One notation system for these objects is the Miller index system. The Nobel in Chemistry in 2011 was awarded for work on the quasi form of these objects. One arrangement that atoms in these objects can take is zincblende, which is equivalent to two interpenetrating face-centered cubic unit cells. The phenomenon of twinning occurs in these objects. For 10 points, name these periodically repeating, ordered structures that include diamond.
ANSWER: **crystal**

066-12-56-06132

2. This decision was partially overturned by *Sweatt v. Painter*. This Supreme Court case's decision was missed by Justice Brewer, whose daughter died the day before. The lone dissenting opinion in this case came from John Harlan. This Supreme Court case was precipitated by one party sitting in the wrong car of a train in Louisiana. For 10 points, name this Supreme Court case that established the doctrine of "separate but equal."
ANSWER: ***Plessy*** *v. Ferguson* [or ***Ferguson*** *v. Plessy*]

088-12-56-06133

3. Ezra Pound addressed this man, asking, "Let there be commerce between us," in his poem "A Pact." In another poem, this man is asked, "Where does your beard point tonight?" In that poem, this man is a "graybeard, lonely old courage-teacher." Allen Ginsberg sees this man "eyeing the grocery boys" in the poem "A Supermarket in California." This man's own poems include one in which he sounds his "barbaric yawp over the roofs of the world." For 10 points, name this poet who celebrated himself in his poem "Song of Myself."
ANSWER: Walter **Whitman**

149-12-56-06134

4. The relationship between the constant associated with this state and temperature is given by the van't Hoff equation. That constant is equal to the reaction quotient at an infinite time. Le Chatelier's (shah-tuh-lee-AIRS) principle governs how this changes in response to a stimulus. The thermodynamic variety of this occurs when two systems are at the same temperature. This state occurs when the rate of the forward reaction equals the rate of the reverse reaction. For 10 points, name this state at which the amount of products and reactants remains constant over time.
ANSWER: **equilibrium**

127-12-56-06135

5. Operation Pegasus happened at the end of the Battle of Khe Sanh during this operation. This event largely invalidated William Westmoreland's claims of "positive indicators." The Citadel was an important location in the Battle of Hue during this operation. This event's focal point was attacked during the First Battle of Saigon, which was done jointly by the NVA and the Viet Cong. For 10 points, name this military campaign during the Vietnam War that occurred during the Vietnamese lunar new year.
ANSWER: **Tet Offensive**

127-12-56-06136

What adjective can describe the philosophy of a teacher at the Athenian Academy or a nonromantic relationship?
ANSWER: "**Platonic**"

127-12-56-06137

This is a calculation question. Convert the equation (y - 2) = -2/3(x - 5) into standard linear form.
ANSWER: **<u>2x + 3y = 16</u>**