1. 250,000 people visit this city's Grand Bazaar every day. The Serpent Column and an Egyptian obelisk created by Thutmose III can be found in this city's Hippodrome. The Galata Bridge crosses this city's harbor, the Golden Horn. This city, whose name may be Greek for "to the city," also contains a former Christian basilica to which minarets were added when it became a mosque. Home to the Hagia Sophia, it is divided across two continents by the Bosphorus. For 10 points, name this largest city in Turkey, which was formerly known as Constantinople.
ANSWER: **Istanbul** [or **Constantinople** before it is read; or **Byzantium**]

080-12-70-11101

2. Carl Correns helped popularize this figure's discoveries after his terms were appropriated without credit by Hugo de Vries. This scientist first noted that his F2 group consistently had a 3 to 1 ratio for what he called "factors." This man's ideas are often explained using a Punnett square diagram, and he devised the law of independent assortment and the law of segregation. For 10 points, name this Austrian friar whose experiments on pea plants underlie modern genetics.
ANSWER: Gregor Johann **Mendel**

104-12-70-11102

3. In a war this man won, he was opposed by American volunteers fighting in the Abraham Lincoln Brigade. This man was assisted in that same war by Germany, with the Condor Legion being responsible for the bombing of Guernica. This man merged the Carlist and Falange (fal-AHN-hay) parties, and he defeated Republican forces with his Nationalist troops in 1939. For 10 points, name this dictator whose death in 1975 brought Juan Carlos to the throne of Spain.
ANSWER: Francisco Paulino Hermenegildo Teodulo **Franco** Bahamonde

052-12-70-11103

4. This poet asked "how do you like your blueeyed boy Mister Death" in his poem about "Buffalo Bill." His time in the Ambulance Corps during World War I inspired his novel *The Enormous Room.* He wrote about a "goat-footed balloonman who "whistles far and wee" in a poem that begins "in Just- spring when the world is mud-luscious." For 10 points, name this author of "anyone lived in a pretty how town" who is known for his non-traditional punctuation and capitalization.
ANSWER: E. E. **Cummings** [or Edward Estlin **Cummings**]

015-12-70-11104

5. One leader of this present-day state lost much of his power in the Bayonet Constitution. The Blount Report was commissioned after an 1893 revolt in this state gave control to Sanford Dole. Long represented by Daniel Inouye (ih-NO-ay) in the Senate, this state was the last admitted to the Union. The USS *Arizona* was destroyed during a battle that took place in this state. For 10 points, name this state that was attacked on December 7, 1941, at Pearl Harbor.
ANSWER: **Hawai'i**

015-12-70-11105

6. This author created a magician who realizes he is the dream of another when he walks unhurt into a wall of flame. Another character created by this author lives in a universe of hexagonal rooms containing 410-page books. This author of "The Circular Ruins" and "The Library of Babel" also wrote about the shooting of sinologist Stephen Albert by the German spy Yu Tsun. For 10 points, name this Argentinean author of *Ficciones,* which contains his story "The Garden of Forking Paths."
ANSWER: Jorge Luis **Borges** (HOR-hay loo-EES BOR-hays)

7. For this disease to spread, affected cells synthesize bFGF and VEGF to cause uncontrolled angiogenesis. This disease can be caused by an overactive *ras* gene, whose resultant cascade can override the action of the p53 gene. This disease is caused by carcinogens, can metastasize to different organs, and is caused by mutations disrupting the cell cycle. For 10 points, name this disease characterized by out-of-control cell growth that results in malignant tumors.
ANSWER: **cancer** [or specific types, such as lung **cancer**; breast **cancer**; kidney **cancer**; etc.]

8. In April 2012, Kazuo Hirai became this company's CEO, replacing the Welsh-American Howard Stringer, shortly after this company announced that it lost 5.7 billion dollars in 2011. In September 2012, it announced the release of the first TV using "4K" technology, which will be 84 inches across and cost twenty-five thousand dollars, as well as new Xperia tablets and phones. For 10 points, name this money-bleeding Japanese media conglomerate which also announced a new, smaller version of its video game console, the Playstation 3.
ANSWER: **Sony** Corporation

9. Like rays, although unlike skates, these marine organisms exhibit ovoviviparity. These organisms use ampullae of Lorenzini to detect the electromagnetic fields of living organisms. The skin of these organisms is composed of dermal denticles, which feel like sandpaper when rubbed the wrong way. These organisms are in the class Chondrichthyes, which means they have a cartilaginous skeleton. For 10 points, identify these organisms whose well-known species include the tiger and great white.
ANSWER: **shark**s

10. This man wrote about the detective Christopher Banks searching for his parents in Shanghai in *When We Were Orphans.* In another work, this man created the Hailsham students Ruth, Kate, and Tommy, who are clones raised for their organs. One of this author's protagonists is never able to express his love for Miss Kenton, with whom he works in the household of Lord Darlington. For 10 points, name this Japanese-born British author of *Never Let Me Go* who created the butler Stevens in *The Remains of the Day.*
ANSWER: Kazuo **Ishiguro**

11. The Lorentz gamma contains the square of this constant in the denominator. This constant is equal to one over the product of the square root of the permittivity and permeability of free space. The square of this quantity serves as the proportionality constant between mass and energy, and special relativity posits it as a universal speed limit. For 10 points, name this constant equal to approximately three times ten to the eight meters per second, symbolized c.
ANSWER: **speed of light** [or **c** before mentioned]

12. A businessman asks one character in this novel for a letter of recommendation that his mentally ill son can marry his neighbor's hunchbacked daughter. The student Samson Carrasco defeats the protagonist of this novel after becoming the Knight of the White Moon. The protagonist famously tilts at windmills when he mistakes them for giants, and he rides Rocinante (roh-sih-NAHN-tay) and employs Sancho Panza as his squire. For 10 points, name this novel about a delusional Spanish gentleman written by Miguel de Cervantes.
ANSWER: **_Don Quixote_** [or _The Ingenious Gentleman **Don Quixote** of La Mancha_; or _El Ingenioso Hidalgo **Don Quijote** de La Mancha_]

13. This baseball player was the subject of the biography _Love Me, Hate Me_. This man won his first MVP award playing in an outfield with Andy Van Slyke as part of a strong 1990's Pittsburgh Pirates team. The godson of Willie Mays, he was the first man to ever have 400 home runs and 400 stolen bases in a career. For 10 points, name this longtime outfielder for the San Francisco Giants, baseball's all time home run leader frequently accused of using steroids.
ANSWER: Barry Lamar **Bonds**

14. Compounds of these elements are often paramagnetic, and electronic transitions in compounds of these elements can be understood through Tanabe-Sugano diagrams. A complex ion centered around an ion of these elements binds to a ligand in a coordination compound. The lanthanides and actinides are called "inner" ones of these elements. These elements have partially or fully filled d orbitals. Scandium is the lightest of these elements, and other examples include copper, silver, and gold. For 10 points, name these elements located in groups three through twelve of the periodic table.
ANSWER: **transition metal**s [or **transition element**s]

15. This man lent his name to a group of Weimer (VYE-mar) era dissidents led by Rosa Luxemburg. This man and his lieutenants Oenomaus (ee-nuh-MAY-us) and Crixus escaped one trap by climbing down Mount Vesuvius with ropes made from vines. His followers were betrayed by Cilician pirates and were crucified along the Appian Way after being routed by the forces of Marcus Licinius Crassus. For 10 points, name this leader of the Third Servile War, a gladiator who led a rebellion against Rome.
ANSWER: **Spartacus**

1A. What property states that if elements a and b are members of a set, then a plus b is also a member of that set?
ANSWER: **closure** under addition

1B. Name the country in which the 2000 election of PAN-party candidate Vicente Fox ended 71 years of PRI party rule.
ANSWER: **Mexico** [or **United Mexican States**; or **Estados Unidos Mexicanos**]

2A. Antelope Island is the largest landform within what American lake, a remnant of the prehistoric Lake Bonneville which is fed by the Bear, Weber, and Jordan rivers?
ANSWER: **Great Salt** Lake

2B. What Welsh poet wrote the line "Rage, rage against the dying of the light," in his poem "Do Not Go Gentle into That Good Night"?
ANSWER: Dylan **Thomas** [or Dylan Marlais **Thomas**]

3A. What is the literary term for overused, overly familiar phrases like "between a rock and a hard place"?
ANSWER: **cliche**

3B. Identify the American composer of the ballets *Rodeo* and *Appalachian Spring.*
ANSWER: Aaron **Copland**

4A. What general commanded the Confederate right flank at the Battle of Fredericksburg and was shot and killed by friendly fire after winning the Battle of Chancellorsville?
ANSWER: Stonewall **Jackson** [or Thomas Jonathan **Jackson**]

4B. What screen legend danced in secret to raise funds for the Dutch Resistance during World War II and starred as Eliza Doolittle in *My Fair Lady* and Holly Golightly in *Breakfast at Tiffany's*?
ANSWER: Audrey **Hepburn** [or Audrey Kathleen **Ruston**]

5A. This is a 20-second calculation question. What values for x and y satisfy the system of equations 2y+4x+7=3y and 9y-5x=7y+17x.
ANSWER: **x = 1** and **y = 11**

5B. This is a 20-second calculation question. What is the midpoint of the line segment joining the points (3, 7) and (8, 12)?
ANSWER: **(11/2, 19/2)** units [or **(5.5, 9.5)**]

6A. Name the French Romantic painter of *The Massacre at Chios* and *Liberty Leading the People.*
ANSWER: Eugene **Delacroix**

6B. Identify the thirty-part harpsichord work by Johann Sebastian Bach which was used to help the namesake student sleep, and consists of thirty pieces inspired by a preceeding aria.
ANSWER: the **Goldberg Variations**

7A. Meanders in rivers can pinch off to form the oxbow type of these inland bodies of water. Name these bodies of water studied in limnology and which include the Caspian Sea.
ANSWER: **lake**s

7B. This is a 30-second calculation question. Consider a triangle with two sides of lengths 5 and 6, with an angle of 60 degrees between them. What is the length of the third side?
ANSWER: square **root (of) 31** units [or **radical 31** units]

8A. This is a 30-second calculation question. How many positive integers less than 1000 are divisible by 15?
ANSWER: **66**

8B. What is the commonly used name of the controversial Florida law invoked in the Trayvon Martin case that states that is sometimes called the "Shoot First" or "No Duty to Retreat" law?
ANSWER: **Stand Your Ground** law

9A. In what form of computing are instructions carried out concurrently?
ANSWER: **parallel** computing

9B. What object is known as a "lyzka" in Polish, a "loffel" in German, or a "cuchara" in Spanish?
ANSWER: a **spoon**

10A. Name this largest galaxy in the Local Group, with which the Milky Way galaxy will likely collide in several billion years.
ANSWER: **Andromeda** Galaxy

10B. What culture believed it was founded by Manco Cápac and worshipped the god Viracocha?
ANSWER: **Incan**s

1. The central dogma of molecular biology, as elucidated by Francis Crick, encompasses this many structures. This many tectonic ridges meet at the Afar junction. Spherical and cylindrical coordinates have this many variables. There are this many generations of leptons and quarks, each containing two leptons and two quarks. This many points are required to define a plane. This number of nucleotides makes up a codon. Lithium contains this number of protons. For 10 points, identify this first odd prime number.
ANSWER: **three**

066-12-70-11117

2. This novel's story was expanded in a 2006 novel by Geraldine Brooks. Its protagonists give the German Hummel family blankets and firewood. One of its characters gives birth to the twins Demi and Daisy. Another character in this novel is rescued by Laurie after falling through thin ice. The Professor Fritz Bhaer eventually marries Jo, whose sister Beth dies of scarlet fever. For 10 points, name this Civil War novel about the four March sisters which was written by Louisa May Alcott.
ANSWER: _**Little Women**_

015-12-70-11118

3. The final section of this work lists Greek philosophy, demonology, and misinterpretation of Scripture as leading causes of a "kingdom of darkness" characterized by mass ignorance. This work theorizes the state of nature as a _bellum omnia contra omnes,_ or "war of all against all," in which the life of man is "solitary, poor, nasty, brutish, and short." For 10 points, name this work of political theory advocating the benefits of absolute monarchies, a work of Thomas Hobbes.
ANSWER: _**Leviathan**_

014-12-70-11119

4. The person who holds this position typically resides in the Potala Palace. These people are selected either by the Golden Urn or by a test in which they must identify the possessions of their predecessors as infants. The fourteenth and current holder of this position is Tenzin Gyatso (gee-OT-zo), who in 2011 proposed abdicating from the role of head of state in the face of Chinese authorities choosing his successor. For 10 points, name this spiritual leader of Tibetan Buddhism.
ANSWER: **Dalai Lama**

015-12-70-11120

5. In the music video for this song, a man standing on a bar slices an airborne watermelon with a sword. This song's popularity spiked after it was featured as the "Stunt Anthem" in a Super Bowl advertisement for the Chevy Sonic. The singer of this song complains that his "seat's been taken by some sunglasses asking 'bout a scar." This song features Janelle Monae singing "carry me home tonight." For 10 points, name this hit song by fun.
ANSWER: **We Are Young**

023-12-70-11121

6. One of the chief members of this movement was Alfred Sisley, who practiced its "en plein air" ethos. Its name was coined by Louis Leroy in a review which savaged a painting of the harbor at Le Havre by a member of this movement. The most prominent American member of this movement was Mary Cassatt. Characteristics of this group included painting outdoors and a fascination with the true effects of light. For 10 points, name this French movement which included Claude Monet and Pierre-Auguste Renoir.
ANSWER: **impressionism** [or **impressionist**s]

7. One side in this battle was led by Tadamichi Kuribayashi, who took the innovative approach of letting the enemy land before opening fire. Much of the fighting here was over Mount Suribachi. This location was the subject of a pair of English and Japanese language movies directed by Clint Eastwood. Joe Rosenthal took a photograph of four marines raising the American flag during this battle. For 10 points, name this year-long battle over a Pacific island seven hundred miles south of Japan.
ANSWER: Battle of **Iwo Jima**

8. The three-stage Atkinson-Shiffrin model governs this process, which is aided by the primacy and recency effects according to Hermann Ebbinghaus. Proactive and retroactive interference impede this phenomenon, which is linked to the brain area called the hippocampus. Psychologists often refer to the "working" form of this mental ability rather than its "short term" and "long term" subtypes. For 10 points, name this process by which minds store and retrieve past experiences.
ANSWER: **memory** [accept **short-term memory**, **long-term memory**, or **working memory**]

9. The protagonist of this novel worries that she will become like Annie Tyler, whose money was stolen by her younger fiancé Who Flung. In this work, Hezekiah Potts works at the general store owned by Jody, who is the mayor, storekeeper, and postmaster of Eatonville. This novel's protagonist tells Pheoby Watson of the time when she was forced to kill her rabid husband Tea Cake. For 10 points, name this novel about Janie Crawford which was written by Zora Neale Hurston.
ANSWER: *Their Eyes Were Watching God*

10. When astronomical bodies are located at Lagrange points, they are in this state. Gibbs free energy is at a minimum, and entropy at a maximum, when a system is in this state. Isostasy is an example of this state. A shift in the position of this state occurs in response to a change in one of the variables that describe a system in this state according to Le Chatelier's principle. The chemical form of this state occurs when there is no net change of reactants and products. For 10 points, identify this state in which a system, when not confronted with external inputs, does not tend to change with time.
ANSWER: **equilibrium**

11. This novel's characters include Carlson, who owns a luger that he uses to euthanize Candy's dog. Another character befriends the stable-hand Crooks and is calmed by stories of a farm where he can take care of the rabbits. It takes its name from a Robert Burns quote about "best-laid schemes." The protagonist of this novel is forced to shoot his friend after that friend accidentally kills Curley's wife. For 10 points, name this novel about George and the slow-witted Lenny, a work of John Steinbeck.
ANSWER: *Of Mice and Men*

12. One component of this pathway, cytochrome oxidase, holds an O2 molecule at its iron-copper active site until it is reduced and turned into water. In this pathway, an enzyme with F0 and F1 components has a rotor powered by the movement of protons through a membrane. This pathway makes use of the NADH and succinate produced by the citric acid cycle, producing 34 molecules of ATP. For 10 points, name this pathway, a part of cellular respiration that produces ATP through the movement of negatively-charged particles.

ANSWER: the **electron transport chain** [prompt on cellular **respiration**]

13. Processes that leave this quantity constant include throttling. The process of breaking a chemical bond always has a positive value of this quantity. Hess' law can be used to calculate the change in this quantity for a multi-step process. This quantity is defined as a system's internal energy plus the product of its pressure and its change in volume. The change in this value is always negative for exothermic processes and positive for endothermic ones. For 10 points, name this thermodynamic variable, the change is which is symbolized as delta H.
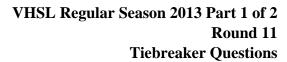
ANSWER: **enthalpy**

14. This war was largely ended by the Case-Church Amendment and caused Congress to pass the War Powers Resolution. One strategy during this war involved "winning the hearts and minds" of civilians. One side entered this war after the USS *Maddox* was engaged in the Gulf of Tonkin incident. Richard Nixon decided to withdraw from this conflict after the Tet Offensive. For 10 points, name this war that ended in 1975 with the Fall of Saigon.

ANSWER: **Vietnam** War

15. This lake will be the location of the HiSCORE, which will be the world's largest cosmic ray observatory. Its only outflow is the Angara River, and the Chikoy and Selenga rivers flow into it. Goryachinsky (GOE-ree-uh-CHIN-skee) is a resort located on its shores, as is the Barguzinsky (BAR-goo-ZIN-skee) Nature Reserve. This lake is the home of the nerpas, the world's only freshwater seals, as well as the golomyanka, a fish that gives birth to live young. For 10 points, name this Siberian lake, the deepest in the world.

ANSWER: Lake **Baikal**

hsapq

1. This letter denotes the complex part of the propagation constant, the phase constant. This letter denotes the second carbon attached to a functional group. The release candidate phase of software development is preceded by this phase. A discrepancy in the energy balance of this type of radioactive decay was solved by Wolfgang Pauli's addition of the neutrino. That type radioactive decay releases electrons or positrons. For 10 points, identify this Greek letter often sandwiched between alpha and gamma.
ANSWER: **beta**

066-12-70-11132

2. In this work, one character shoos away her children and attempts to decorate a Christmas tree after being confronted about how she forged her father's signature to finance a trip to Italy for her husband's health. In this play, a reunion with Christine Linde persuades Nils Krogstad not to blackmail the protagonist's husband, Torvald. This play ends with the protagonist slamming the door on her husband and children. For 10 points, name this play about Nora Helmer written by Henrik Ibsen.
ANSWER: *A **Doll House*** [or *A **Doll's House***; or *Et **Dukkehjem***]

014-12-70-11133

3. A type of crackling called Barkhausen (bark-HOUS-en) noise occurs in materials with this property because their Weiss (VICE) domains align in clumps. Materials that exhibit this property are commonly used to trace out hysteresis loops. Increasing the temperature causes disorder and abolishes this property at the Curie point, and it arises in materials whose domains remain aligned even in the absence of an external field. For 10 points, name this type of magnetism most notably exhibited by iron.
ANSWER: **ferromagnetism** [accept word forms like **ferromagnet**]

048-12-70-11134

4. This family's military lost under Ludwig von Benedek at Koeniggratz, and its last surviving branch affixed "Lorraine" to its name. A prince of this family with only four great-grandparents due to inbreeding, Don Carlos, inherited its traits of an extreme underbite and a protruding chin. Its rulers included Holy Roman Emperor Charles V and Maria Theresa. For 10 points, name this royal house that ruled pre-Bourbon Spain and the Austrian Empire.
ANSWER: House of **Hapsburg**

104-12-70-11135

5. The protagonist of this novel has dreams about a place called the Golden Country. He wakes up from one such dream with the word "Shakespeare" on his lips before participating in the Physical Jerks. The protagonist receives a note from a girl containing the message "I love you," and implicates that character after being threatened with a cage full of rats in Room 101. For 10 points, name this novel in which Julia and Winston Smith betray each other to the Party, a work of George Orwell.
ANSWER: *Nineteen Eighty-Four*

194-12-70-11136

This is a calculation question. What is the y intercept of the line parallel to y=5/6x-3 that runs through the point (4,3)?
ANSWER: **-1/3**

What three-dimensional object consists of all points equidistant from a center?
ANSWER: **sphere**