hsapq

1. In a novel written in this language, the dog Karenin dies of cancer while Tomas cheats on Sabina with Tereza. That novel written in this language is *The Unbearable Lightness of Being.* A play written in this language describes Hugo Pludek's rise to the head of the Liquidation Office. That play in this language was written by a prominent politician and is titled *The Garden Party.* For 15 points, name this language used by Vaclav Havel and Milan Kundera, who set many of their writings in Prague.
ANSWER: **Czech** language [or **Bohemian**]

233-13-104-06101

BONUS: What Hawaiian goddess of fire, wind, and volcanoes resides in the caldera of Kilauea?
ANSWER: **Pele**

227-13-104-0610-11

2. Amortized analysis is used to analyze these things. A "greedy" one of these things always makes the locally optimal choice. Big O notation is used to quantify the complexity of these things in terms of the amount of data. Those that rely on recursively breaking down a problem and combining the solutions are classified as divide-and-conquer and include quicksort. For 15 points, identify these step-by-step procedures for solving a problem that are often used in computer science.
ANSWER: **algorithm**s

066-13-104-06102

BONUS: What river serves as the border between Cambridge and Boston before emptying into the Atlantic Ocean?
ANSWER: **Charles** River

023-13-104-0610-11

3. This artist sampled Smokey Robinson's "Will You Still Love Me Tomorrow" in a song that declares that "we ain't married but tonight I need some consummation." This man collaborated with Bon Iver's Justin Vernon on the song "Lost in the World." At a benefit event, this rapper declared that "George Bush doesn't care about black people." This rapper of *808s and Heartbreaks* and *My Beautiful Dark Twisted Fantasy* interrupted Taylor Swift at the 2009 MTV Video Music Awards. For 15 points, name this rapper of "All of the Lights" and the album *Yeezus.*
ANSWER: Kanye Omari **West** [or **Kanye**; prompt on **Yeezus** until it is read]

186-13-104-06103

BONUS: What archeological hoax consisted of a human skull combined with the jawbone of an ape presented as a human ancestor?
ANSWER: **Piltdown Man**

140-13-104-0610-11

4. Yahya Jameh, the President of the Gambia, took his country out of this organization in October 2013. The site of its 2013 heads of government meeting was controversially located in Mahinda Rajapaksa's Sri Lanka. Its namesake 2014 games will be held in Glasgow, in the country of its head, Queen Elizabeth II. For 15 points, name this organization whose members are mostly former colonies of Britain.
ANSWER: **Commonwealth** of Nations [or British **Commonwealth**]

153-13-104-06104

BONUS: Name the team that won Super Bowl XLVII against the San Francisco 49ers thanks to the play of the game's MVP, Joe Flacco.
ANSWER: **Baltimore** Ravens [or Baltimore **Ravens**]

5. If a function satisfies Laplace's (luh-PLOSS-iz) equation, then its mean value on the surface of this figure equals its value at this figure's center. The gravitational force exerted by a shell of this shape on a particle inside the shell is always zero. The constant of proportionality for moment of inertia of a hollow one of these is two-thirds, while a solid one has constant two-fifths. This is the shape of the orbital with azimuthal quantum number zero, known as the s orbital. For 15 points, identify this shape which has volume four-thirds pi r-cubed.
ANSWER: **sphere**s [or word forms, such as **spherical**]

BONUS: What novel written by William Thackeray features the anti-heroine Becky Sharp and the good-natured Amelia Sedley?
ANSWER: *Vanity Fair*

6. Materials with this property exhibit a phenomenon in which heat is transferred by waves called second sound, resulting in a material with this property having the highest known thermal conductivity. In 2004, a team at Penn State first witnessed this property in a solid, which at first was thought to be a Bose-Einstein condensate. Materials with it can form a thin Rollin film and creep out of a container. This property is observed below a sharp discontinuity at 2.17 Kelvin, the lambda point. For 15 points, name this property observed when viscosity goes to zero at low temperatures.
ANSWER: **superfluid**ity

BONUS: What tract by Karl Marx and Friedrich Engels concludes with the exhortation, "Workers of the world unite!"
ANSWER: *The **Communist Manifesto***

7. Father Fish and Hobe Gilium appear in this author's novel *The Morning Watch.* He wrote a prose poem set to music by Samuel Barber entitled *Knoxville: Summer of 1915.* In his most famous autobiographical novel, Rufus Follet deals with his father's death in a car crash. This author collaborated with the photographer Walker Evans to document the lives of sharecroppers in *Let Us Now Praise Famous Men.* For 15 points, name this author of *A Death in the Family.*
ANSWER: James **Agee**

BONUS: What Germanic tribe sacked Rome in 455 CE and was led by Gaiseric and Gunderic?
ANSWER: **Vandal**s

8. In September 2013, this country's prime minister rejected a secessionist vote proposed by Artur Mas after a human chain was made by a million people. In the same month, this country's prime minister invoked the 1984 Brussels Agreement in the General Assembly and called on Great Britain to give up Gibraltar. For 10 points name this country led by Prime Minister Mariano Rajoy and King Juan Carlos I.
ANSWER: Kingdom of **Spain** [or Reino de **Espana**]

BONUS: This is a 20-second calculation question. If the sine of x is 2 square root 2 all divided by 3, and x is an angle between 90 and 180 degrees, what is the cosine of x?
ANSWER: **-1/3**

9. The narrowest spot in this channel comes between Point Marroqui and Point Cires. A pair of promontories on this channel were historically known as the Pillars of Hercules. The Spanish exclave of Ceuta (say-OO-tuh) is located just south of this channel in Morroco. For 15 points, name this channel whose namesake Rock is located on the southern edge of the Iberian Peninsula, which this strait separates from Africa to connect the Atlantic to the Mediterranean.
ANSWER: Strait of **Gibraltar**

BONUS: What NHL team captained by Jonathan Toews defeated the Philadelphia Flyers and the Boston Bruins to win the 2010 and 2013 Stanley Cups?
ANSWER: Chicago Black**hawks** [or **Chicago**]

10. This actress played Sally's best friend Marie in *When Harry Met Sally,* and she wrote the book *Wishful Drinking* and the screenplay for *Postcards from the Edge.* In a film, this actress says "this bucket of bolt's never gonna get us past that blockade," and confesses her love for a man who replies "I know." In another film, she wore a gold bikini as one of the slaves of Jabba the Hutt. For 15 points, name this actress who played Princess Leia in *Star Wars.*
ANSWER: Carrie **Fisher**

BONUS: Classical and operant are two forms of what technique that was used by Ivan Pavlov to make dogs salivate?
ANSWER: **conditioning**

11. In the first of these films, Beethoven's 9th Symphony is used as a leitmotif for the antagonists. In a later film from this series, the villains use dump trucks to abscond with millions of dollars worth of gold bullion. Stopping hackers trying to start a "fire-sale" is the goal of Detective John McClane in a 2007 film in this series. For 15 points, name these action movies where Bruce Willis performs an action "with a vengeance" and also "lives free."
ANSWER: *Die Hard*

BONUS: This is a calculation question. The area of a circle is 13.25 square units. If the radius of the circle is doubled, what is the area of the new circle?
ANSWER: **53** square units

12. In a novel by this man, Richard Elster is the subject of a documentary by Jim Finley. This author of *Point Omega* wrote a novel in which Bill Gray travels to Beirut, entitled *Mao II.* This author of *Libra* wrote about waste management executive Nick Shay in his longest novel. In his most famous book, Jack Gladney is a professor of Hitler Studies who must contend with an "airborne toxic event." For 15 points, name this postmodern American novelist of *Underworld* and *White Noise.*
ANSWER: Don **DeLillo**

BONUS: What leader of the Green Mountain Boys teamed with Benedict Arnold to take Fort Ticonderoga?
ANSWER: Ethan **Allen**

13. This effect explains the results of the Rossi-Hall experiment, which measured muons reaching the surface of the Earth. By using the transverse Doppler Effect, the Ives-Stilwell experiment confirmed the existence of this effect, which is directly proportional to the Lorentz factor. This effect is the cause of a paradox in which a twin in a near-light speed rocket ship can leave and return to Earth younger than a twin who never left Earth. For 15 points, name this consequence of special relativity that results in clocks "slowing" down at relativistic velocities.
ANSWER: **time dilation** [prompt on special **relativity** until it is read]

BONUS: This is a 30-second calculation question. A mailman has three letters to deliver to three people, but, as they are unlabeled, he delivers them randomly. What is the probability no one gets the letter intended for them?
ANSWER: **1/3**

14. In Game 6 of the 2004 ALCS, this player swatted the ball out of Bronson Arroyo's glove when Arroyo tried to tag him. After Aaron Boone injured his knee in a game of pickup basketball, this player was traded to his current team for Alfonso Soriano and Joaquin Arias. Raul Ibanez hit a game-winning home run after pinch-hitting for this player in the 2012 postseason. Arbitrator Fred Horowitz reduced this man's suspension from 211 games to the entire 2014 season for his role in the Biogenesis scandal. For 15 points, name this New York Yankees third baseman.
ANSWER: Alexander Emmanuel **Rodriguez** [or **A-Rod**]

BONUS: *Dream of the Red Chamber* and *Outlaws of the Marsh* are two of the "Four Great Classical Novels" from what country?
ANSWER: **China** [or **Zhong Guo**]

15. These structures are maintained by CLIP and CLASP proteins. Depending on the point of attachment, these structures are divided into astral and polar types. Their formation is inhibited by the anti-cancer drug paclitaxel. Kinesin (kin-EY-sin) proteins are used for transport along these structures. A protein subunit of these structures localizes to the centrosome and assists in the formation of the mitotic spindle at "organizing centers". For 15 points, identify these largest components of the cytoskeleton, usually pictured as long, hollow rods.
ANSWER: **microtubule**s [prompt on **mitotic spindle** or equivalents]

BONUS: This is a calculation question. Find and simplify the product of the quantity "x + y" and the quantity "x - 2y + 3."
ANSWER: $\underline{x^2 - 2y^2 - xy + 3x + 3y}$ [or answers containing all of **plus x squared**, **minus 2 y squared**, **minus x y**, **plus 3x**, and **plus 3y** in any order]

16. The main character in this novel thinks that his infatuation with Luba Luft might be mistaken for his love of *The Magic Flute*. This novel ends with Iran, the protagonist's wife, ordering mechanical flies for a synthetic toad that the protagonist found during his sojourn into the Oregon desert to meditate. The protagonist of this novel is disappointed that Iran misuses her mood organ, and he lusts after Rachel Rosen. For 15 points, name this novel about bounty hunter Rick Deckard, loosely adapted into the film *Blade Runner* and written by Philip K. Dick.
ANSWER: ***Do Androids Dream of Electric Sheep?*** [prompt on ***Blade Runner*** until it is read]

BONUS: What domestic animal's color is an X-linked trait, which sometimes results in its females featuring a black-and-orange patterning known as calico?
ANSWER: domestic **cat**s [or house**cat**s; or **feline**s; or *Felis* silvestris ***catus***]

17. This scientist was the doctoral advisor for Urey (YUR-ee) when he discovered deuterium. Earlier, this scientist synthesized pure deuterium oxide, or heavy water. This man names a class of compounds that activate the Friedel-Crafts reactions and include boron trifluoride and aluminum trichloride. This man, who coined the term "photon," devised a representation of bonds within molecules by using either lines or dots to indicate pairs of electrons. For 15 points, name this scientist who classified acids as electron pair acceptors.
ANSWER: Gilbert Newton **Lewis**

BONUS: What centrist candidate defeated Mohammad Bagher Ghalibaf (GAH-lee-boff) to win Iran's 2013 presidential election?
ANSWER: Hasan **Rouhani**

18. This man was going to be succeeded by Abe Fortas in 1968 until Congress threatened a filibuster. In his highest post, this man replaced Fred Vinson, and he was previously Governor of California when he was Thomas Dewey's 1948 running mate. His appointment to the Supreme Court was legendarily labeled "the biggest fool mistake I ever made" by Dwight Eisenhower, who found him too liberal. For 15 points, name this Chief Justice of the Supreme Court during the Court's decisions in *Miranda v. Arizona* and *Brown v. Board of Education.*
ANSWER: Earl **Warren**

BONUS: What Scottish mathematician developed logarithms and produced a number of tables with their values?
ANSWER: John **Napier**

19. Two opposing forces during this war were defeated in separate battles by the Ottoman Empire, at the River Bender and the River Pruth. An empire in this war was initially allied to Frederick the Strong of Saxony and had to rebuild its army after a defeat at Narva. The losing empire in this war had to agree to the Treaty of Nystad after its army was smashed at the Battle of Poltava. For 15 points, name this war in which Peter the Great of Russia and his allies defeated Charles XII of Sweden.
ANSWER: **Great Northern** War

BONUS: This is a 30-second calculation question. In the first quadrant, what is the minimum value of the function tangent of x plus cotangent of x?
ANSWER: **2**

20. This man's government executed leaders of the "milk strike," and he attempted to advance a new philosophy he called "universism." As Minister of Defense under Peder Kolstad, this man became notorious for putting down a strike of hydroelectric workers. After forming the National Union Party in 1933, he never won a seat in the Storting. He served as Prime Minister under Josef Terboven, who led the occupation of his country. For 15 points, name this Norwegian officer who collaborated with the Nazis, and whose name has become a noun meaning "traitor."
ANSWER: Vidkun **Quisling**

BONUS: What objects are planted every year on the Jewish holiday of Tu Bishvat?
ANSWER: **tree**s

21. In the elephant toothpaste experiment, a solution containing anions (AN-eye-onz) of this element is poured into hydrogen peroxide to create huge amounts of foam. Along with bromine, it can be used to identify alkenes with a color change. Povidone and this element are the components of the disinfectant Betadine. A solution of this element turns deep blue or purple in the presence of starch. This element is required for the synthesis of thyroxine, and its isotope 131 is used to treat thyroid cancer. For 15 points, name this halogen, which is often added to table salt.
ANSWER: **iodine** [or **I**]

BONUS: Who composed the score for the Soviet film *Alexander Nevsky* and produced *Peter and the Wolf?*
ANSWER: Sergey **Prokofiev**

22. Unusually, singlet oxygen and both hydrogen and hydroxyl radicals form during this type of reaction. Enthalpies of reaction are usually calculated by using substance-specific enthalpies of formation or enthalpies of this process. The Otto and Diesel cycles extract work from the enthalpy of this type of reaction. Carbon monoxide is generated in the incomplete form of this reaction, which occurs at low external oxygen concentrations. For 15 points, name this exothermic reaction in which hydrocarbons produce water and carbon dioxide by burning.
ANSWER: **combustion** [or word forms; prompt on **burn**ing until it is read]

BONUS: What term describes light composed of only a single wavelength, meaning it cannot be separated into different colors?
ANSWER: **monochromatic**

23. This poet defended the artistic merit of his native language in the treatise *De Vulgari Eloquentia.* He paired his *canzones* with literal and allegorical interpretations in his *Convivio.* His autobiographical *La Vita Nuova* recounts his love for a member of the Portinari family who appears in his most famous poem, in which she guides him through nine spheres. That epic poem of his describes a journey led by Virgil through Purgatory and Hell. For 15 points, name this Italian poet who wrote *The Divine Comedy.*
ANSWER: **Dante** Alighieri [or Dante **Alighieri**]

BONUS: This is a calculation question. If tangent of x equals one-fourth the square root of 3, what is tangent of x times cotangent of x?
ANSWER: **1**

24. De-nitri-fication is an example of one of these reactions, which transforms nitrate into nitrogen gas. In biology, the transformation of NAD+ into NADH is one of these reactions. During electroplating, metal cations (CAT-eye-onz) undergo this type of reaction. The species which undergoes this reaction will have a greater standard electrode potential in a galvanic cell, will be located at the cathode, and will have an algebraic decrease in its oxidation state. For 15 points, name these reactions in which a species gains electrons, often contrasted with oxidations.
ANSWER: **reduction**s [prompt on **redox** reactions; prompt on **oxidation-reduction**s; prompt on **reduction-oxidation**s; do not accept or prompt on "oxidations"]

BONUS: A goat and a green-faced man face each other in what painting by Marc Chagall, which includes some upside-down houses?
ANSWER: *I and the Village*

25. One of this author's novels was adapted into a wildly successful Broadway play by Jack Kirkland. This man collaborated with photographer Margaret Bourke-White on the book *You Have Seen Their Faces.* Characters in his most famous novel include Ellie May, a girl with a cleft lip, and Grandma Lester, whom Dude runs over with his car. For 15 points, name this Southern novelist of *God's Little Acre* and *Tobacco Road.*
ANSWER: Erskine **Caldwell**

26. The first and last coefficients of an integer polynomial can be used to guess solutions to the polynomial with this property. Dividing one polynomial by another gives a function described by this adjective. The Greeks proved that the square root of two did not have this property. It is possessed by any number with a terminating decimal expansion, and any integer, but not any real number. For 15 points, identify this type of number which can be expressed as a fraction of two integers.
ANSWER: **rational** [or **rational** number; or **rational** function]

27. Darrell Issa proposed a temporary six-year plan to deal with this issue. Bob Corker and John Hoeven amended a bill related to this issue that Rob Portman refused to support without modifications to E-Verify. A Senate bill addressing this issue was drafted by a "Gang of Eight" led by Chuck Schumer and John McCain, and earned 14 Republican votes in addition to every Democratic vote. For 15 points, name this issue which Marco Rubio addressed by supporting a path to citizenship for resident aliens.
ANSWER: **immigration** reform [or **illegal immigration** or other related concepts]

080-13-104-06127

00--20-0610-11

28. Hannah Hoch painted the "Cut of a Kitchen Knife" from this art movement through a "Beer Belly Cultural Epoch." Jean Arp, also known as Hans Arp, was a member of this movement. Tristan Tzara's manifestos laid its groundwork. Another artist in this movement wrote "R. Mutt" on a urinal and titled it *Fountain,* an example of one of his readymades. According to one theory, this artistic movement got its name randomly from the French word for "hobbyhorse." For 15 points, name this anti-art movement embraced by Marcel Duchamp.
ANSWER: **Dada**ism

190-13-104-06128