hsapq

1. One model of the working type of this process was created by Alan Baddeley. The spacing effect of this process was discovered by Hermann Ebbinghaus. In 1956, a study on this process was conducted by George Miller, who discovered one form of this process had a magic number of (*) seven plus or minus two. This process can be helped by the use of mnemonic devices, and it comes in short-term and long-term varieties. For 10 points, name this process of the mind that gets lost in cases of amnesia. ANSWER: memory
2. A translation lookaside buffer is one of these things used to improve the translation of virtual addresses. The consistency of data stored in these thing is their namesake "coherence." Those located on a CPU die are known as (*) L1, L2 or L3. Requesting data from these things can result in a namesake "hit" or "miss." For 10 points, identify this term which can also refer to the temporary storage used for HTML pages and images when browsing the web.
ANSWER: cache
3. On one voyage, this explorer met with a city's Zamorin and mistook him for a Christian.

Twenty-five years after that trip, this man was named a viceroy, a post he was earlier overlooked for in favor of Francisco de Almeida. During this explorer's first voyage, he placed a stone pillar called a padrao to claim land in (*) Calicut. This man opened up a new route for European trade when he continued east past the Cape of Good Hope. For 10 points, name this Portuguese explorer who sailed directly from Lisbon to India.
ANSWER: Vasco da Gama
023-13-75-09103
4. The title creature of a poem by this man is compared to a "poet hidden in the light of thought" and a "high-born maiden in a palace tower." A poem by this man claims that the "world should listen" to the "harmonious madness" of the song of the title bird. Another poem by this man includes the line, "Look on my (*) works, ye Mighty, and despair!" That poem by this man is about a "king of kings" and a traveller who saw "two vast and trunkless legs of stone" in the desert. For 10 points, name this poet of "To a Skylark" and "Ozymandias."
ANSWER: Percy Bysshe Shelley
5. This man formulated the regula primitive, or primitive rule. He preached to sultan al-Kamil during the siege of Damietta. Innocent III had a vision of this man holding up the Church of San Giovanni in Laterano. This man repaired the church of San Damiano after receiving a vision, and his ${ }^{(*)}$ Fioretti is a collection of his sayings. This man founded a lay group known as the Third Order which had a counterpart called the Poor Clares. For 10 points, name this patron saint of Italy who preached to the animals, had stigmata, and founded a namesake order.
ANSWER: Saint Francis of Assisi [or San Francesco d'Assisi; or Giovanni]
6. In this film's backstory, Eliza helped pick out a "periwinkle-blue dress" in which to bury a woman in Greenlawn cemetery. Its "The End" screen shows a car being towed out of mud. The detective Arbogast tries to recover $\mathbf{4 0 , 0 0 0}$ embezzled dollars in this film, whose Bernard Hermann score includes repeated sforzando E-flats on the violins in a scene featuring (*) chocolate syrup mixed into running water. In this film, Marion Crane meets a man obsessed with his dead mother who runs the Bates Motel. For 10 points, name this thriller film featuring Marion's murder in a shower, directed by Alfred Hitchcock.
ANSWER: Psycho
104-13-75-09106
7. The divergence of this quantity is equal to zero according to Maxwell's equations. Because velocity is crossed with this quantity in the equation for Lorentz force, it can do no work on an isolated charge. One can obtain this quantity from the Biot-Savart law, which describes it for the case of being generated by an (*) electric current. It is usually denoted with a bold B or H and measure in Teslas. For 10 points, identify this vector field that connects the north and south poles of certain materials.
ANSWER: magnetic field [or magnetic flux density; prompt on $\underline{\mathbf{B}}$ or $\underline{\mathbf{H}}$ until it is read]
8. A distaff and spindle lie discarded on the floor in this painting, in which a plow sits behind a pillar against a wall. On the right of this painting, a woman in a blue headscarf leans despairingly on the shoulder of a blue-robed woman wrapped in a yellow shawl. Another woman in this painting (*) comforts two children, one of whom grasps her finger. In the center of this painting, a father offers three swords to his helmeted sons, who reach out to grasp them. For 10 points, name this painting by Jacques-Louis David of three Roman brothers swearing to defend their city.
ANSWER: The Oath of the Horatii [or Le Serment des Horaces]
195-13-75-09108
9. One character in this novel declares, "for hate's sake I spit my last breath at thee." Another of its characters recovers from a grave illness despite building his own coffin. A group of mysterious men led by Fedallah are present in this novel against the wishes of the Quakers (*) Bildad and Peleg. The narrator of this novel shares a bed in New Bedford with the tattooed Queequeg. The first mate Starbuck is the only person on the Pequod who opposes the monomaniacal plans of the one-legged Captain Ahab in, for 10 points, what Herman Melville novel about a whale hunt?
ANSWER: Moby-Dick
015-13-75-09109
10. This man led the Autumn Harvest Uprising. He described the title form of combat as "the weapon with which we resist the Japanese" in his treatise On Guerrilla Warfare. This leader started a program that focused on going "up to the mountains, down to the villages." This man became prominent following his role in the Long March, and some quotations from this man are found in the (*) "Little Red Book." He initiated the Cultural Revolution and Great Leap Forward. For 10 points, name this first leader of Communist China.
ANSWER: Mao Zedong
11. This game includes a new multiplayer game mode, in which captured forts deploy shield doors and turrets, called Dominion. This video game also features a mode in which the lead player is the king, called Regicide. This video game's level Ragnarok is loosely based on an earlier game's (*) Blood Gulch. This game added a commendations system, and it still has its series' medals, such as "overkill" and "running riot." For 10 points, name this 2012 game that is the most recent in a series featuring Master Chief.

12. A law named for this figure is used to illustrate vector addition. The area of this figure is the product of two adjacent side lengths and the sine of the angle between them. The diagonals of this polygon bisect each other, but are not necessarily perpendicular. It is the most general type of (*) quadrilateral in which adjacent angles are supplementary and opposite angles are congruent. Rectangles and rhombi are types of this polygon. For ten points, name this quadrilateral with two pairs of parallel sides.
ANSWER: parallelogram
13. This river is spanned by the oldest suspension bridge still in use in the United States. One of the oldest railroads in the United States is named for Baltimore and this river. Tributaries of this river include the Kanawha river and Big Sandy. This river is formed by the confluence of the (*) Allegheny and Monongahela rivers in Pittsburgh. It meets the Mississippi river at Cairo, in Illinois. For 10 points, identify this largest tributary, by volume, of the Mississippi.
ANSWER: Ohio river
14. The first commercial plant that produced heavy water as a fertilizer byproduct was in this country. During World War II, that factory was sabotaged several times to attack the German nuclear program. This country was put under a military administration headed by Josef Terboven. The Nasjonal Samling was a political party in this country that collaborated with the Nazis, which led to its creator's name becoming a ${ }^{*}$ ) synonym for traitor; that party founder from this country was Vidkun Quisling. For 10 points, name this Scandinavian country.
ANSWER: Kingdom of Norway [or Kongeriket Norge]
121-13-75-09114
15. The man wrote about Gorgibus, who is fooled by Sganarelle pretending to be the title person in his play The Flying Doctor. The protagonist of another of his plays refuses to praise Oronte's poetry and is in love with Celimene. He wrote a play in which Monsieur Loyal announces an eviction after
${ }^{(*)}$ Orgon hears the title man making advances on his wife and finally realizes that he is a con artist and a hypocrite. For 10 points, name this French playwright of The Misanthrope and Tartuffe.
ANSWER: Moliere [or Jean-Baptiste Poquelin]
201-13-75-09115
16. Young girls dressed as bears to honor this deity at the sanctuary at Brauron. This goddess tricked the giants Otus and Ephialtes into killing each other. She sent the Calydonian Boar to ravage the lands of King Oeneus (oh-AY-nee-is) and in one story, she rescued Iphigenia (IPH-ih-jen-EYE-uh) before Agamemnon sacrificed her. This goddess changed (*) Actaeon into a stag after he saw her bathing. With her twin brother, she killed the children of Niobe for offending her mother Leto. For 10 points, name this Greek goddess of the hunt.
ANSWER: Artemis [or Diana]
17. This man included "St. Ita's Vision" in his Hermit Songs and the chorus and orchestra climax on "Thou Art Unchanging" in the first section of his Prayers for Kierkegaard. "A streetcar raising its iron moan" is part of the imagery in text written by James Agee used as the source for his piece Knoxville: Summer of 1915. His most famous work was adapted from the second movement of his String Quartet, Opus 11, was premiered by (*) Arturo Toscanini, and is often played at funerals, since it is very sad. For 10 points, name this American composer of Adagio for Strings.
ANSWER: Samuel Osborne Barber II
18. This writer created a figure named Orc, the embodiment of freedom and rebellious opponent of a blind creator being named Urizen, one of the four Zoas. In one work, he wrote, "If the doors of perception were cleansed every thing would appear to man as it is, infinite." His most famous poems are short lyrics from (*) two books containing complementary pairs of poems such as "Infant Joy" and "Infant Sorrow." For 10 points, name this English poet of Songs of Innocence and Songs of Experience. ANSWER: William Blake

014-13-75-09118
19. This ruler's forces captured William the Lion at the Battle of Alnwick. This ruler continually threatened to withdraw his support of Pope Alexander III. He married the divorced wife of Louis VII, and he succeeded King Stephen. One man escaped to France and was supported by Louis VII after a disagreement with this ruler. In 1164, this king issued the (*) Constitutions of Clarendon during his feud with the Archbishop of Canterbury. For 10 points, name this husband of Eleanor of Aquitaine who ordered the murder of Thomas Becket.
ANSWER: Henry II [or Henry Curtmantle; or Henry FitzEmpress; prompt on Henry Plantagenet]
20. The Haber process uses the concept of this principle to lower its reaction's temperature while still trying to keep the reaction rate high. This principle explains what happens in a solution affected by the common $\left(^{*}\right)$ ion effect. This principle does not apply in a situation where a reaction is sped up by a catalyst, but it does explain why changing the pressure on gases in a reaction can change a reaction's direction. For 10 points, name this principle that describes how changes to a system in equilibrium will cause a shift in that system until a new equilibrium is found.
ANSWER: Le Chatelier's Principle
21. This organ's stroma, which is bounded by Descemet's membrane and Bowman's layer, contains a lattice of Type I collagen fibers. Keratitis occurs when this organ is infected by the herpes simplex virus. This organ is cut in the PFK procedure, which has been more recently replaced by (*) LASIK. This organ provides the majority of the refractive power of its associated organ, along with the lens. For 10 points, name this clear covering over the eye.
ANSWER: cornea
048-13-75-09121
22. This writer first laid out the aesthetic principle that man must "suffer into knowledge." In one of his plays, the title character cries, "I have been struck a mortal blow!" offstage as he is killed in his bath by his wife. In the sequel to that play, the protagonist reunites with his sister (*) Electra prior to killing the usurper Aegisthus and his adulterous lover Clytemnestra. For 10 points, name this first Greek tragedian who wrote the Oresteia trilogy.
ANSWER: Aeschylus
23. This President, in an attempt to regulate the grain future market, signed a law that was overturned in Hill $v$. Wallace that was called the Future Trading Act. During his presidency, this man created the forerunner to the OMB called the Bureau of the Budget. The election won in a landslide by this President followed the ratification of the Nineteenth Amendment. This man promised a (*) "Return to Normalcy" in the election of 1920. For 10 points, name this scandal-ridden President who died and was replaced in 1923 by Calvin Coolidge.
ANSWER: Warren Gamaliel Harding

1. This man's failed endeavors included the Virgin Lands Program, which attempted to grow corn in the Russian tundra. For 10 points each:
[10] Name this successor to Stalin who presided over the Cuban Missile Crisis.
ANSWER: Nikita Sergeyevich Khrushchev
[10] Khrushchev criticized Stalin's cult of personality in this speech given at the Twentieth Party Congress in 1956.
ANSWER: Secret Speech [or "On the Cult of Personality and its Consequences"]
[10] Khrushchev was succeeded as General Secretary by this man, who ruled until 1982, presiding over the Prague Spring and the Soviet invasion of Afghanistan.
ANSWER: Leonid Ilyich Brezhnev
192-13-75-09201
2. In this play, Sir Andrew Aguecheek has a duel with Cesario. For 10 points each:
[10] Name this Shakespeare play in which Viola marries Orsino after revealing herself to be a woman. ANSWER: Twelfth Night
[10] This arrogant Steward in Twelfth Night is tricked into wearing yellow stockings and constantly smiling, prompting Countess Olivia to lock him in a dark room.
ANSWER: Malvolio
[10] In Twelfth Night, Viola and her twin brother Sebastian were separated by one of these events. ANSWER: a shipwreck caused by a storm [or obvious equivalents; prompt on storm]

030-13-75-09202
3. This work contains a digressionary story about two vultures who competed to see who could fly higher, one losing his wings shielding his brother from the sun. For 10 points each:
[10] Name this Indian tale of a prince of Ayodhya who embarks on an adventure to rescue his abducted wife Sita.
ANSWER: Ramayana
[10] The Ramayana and Mahabharata are the two major works of this type from Indian literature. Homer penned the two major Greek ones: the Iliad and the Odyssey.
ANSWER: epic poems [or national epics]
[10] This ten-headed demon and ruler of Lanka is the primary antagonist of the Ramayana. ANSWER: Ravana
4. Brahms wrote two of this type of composition, while Beethoven's works of this type include ones nicknamed "Ghost" and "Archduke." For 10 points each:
[10] Name this common type of chamber music composition, which is usually written for violin, cello, and the namesake instrument.
ANSWER: piano trio [prompt on "trio"]
[10] Two piano trios were written by this Russian composer of the Leningrad Symphony and the opera Lady Macbeth of the Mtsensk District.
ANSWER: Dmitri Shostakovich
[10] The first of Shostakovich's compositions of this type ends with a fast-paced burlesque. That composition was premiered by its dedicatee, David Oistrakh.
ANSWER: violin concerto [prompt on "concerto"]
5. This scientist criticized Aristotle's notion of an unchanging celestial system in his De nova stella. For 10 points each:
[10] Identify this scientist who is known for his extensive observations in astronomy. He worked with a naked eye, and once lost a portion of his nose in a duel against his cousin.
ANSWER: Tycho Brahe [or Tyge Ottesen Brahe]
[10] This other scientist studied under Tycho Brahe. He is best known for his three laws of planetary motion, the first of which indicates that planets orbit the sun in an elliptical fashion.
ANSWER: Johannes Kepler
[10] The third of Kepler's laws states that the square of the orbital period of a planet is proportional to the cube of this characteristic of its orbit. It is effectively the radius of the ellipse at its longest diameter.
ANSWER: semi-major axis [do not accept or prompt on partial answer]
189-13-75-09205
6. This novel includes a controversial scene in which Dominique Francon is raped by the protagonist, whom the author nevertheless presents as the perfect man. For 10 points each:
[10] Name this novel in which the architect Howard Roark refuses to compromise his individualism.
ANSWER: The Fountainhead
[10] The Fountainhead was written by this Objectivist author of Atlas Shrugged.
ANSWER: Ayn Rand [or Alissa Zinovievna Rosenbaum]
[10] Atlas Shrugged opens with this four word question. Eventually, Dagny Taggart answers this question with, "We are."
ANSWER: "Who is John Galt?"
015-13-75-09206
7. Brewster's angle can be determined by using this law. For 10 points each:
[10] Name this optics law that uses the speed of a wave and its angle of incidence to determine how those waves will bend upon entering a new medium.
ANSWER: Snell's law
[10] Snell's law can be written to include this value for a substance, symbolized $n$, which is equal to the speed of light in a vacuum over the speed of light in the substance.
ANSWER: index of refraction [or indices of refraction]
[10] When the angle of incidence of light is higher than the critical angle, this phenomenon occurs in which light does not pass through to the new medium.
ANSWER: total internal reflection
8. Viruses have applications in laboratory research. For 10 points each:
[10] Therapy that uses this type of virus, which infects bacteria, has been in use for over a century, although only recently has it been studied outside of former Soviet republics.
ANSWER: bacteriophages
[10] Viruses can transfer genetic material through this process, in which a virus incorporates bacterial DNA instead of its regular genome and injects it into another bacterium.
ANSWER: transduction
[10] Recent technology has allowed the synthesis of viruses in the laboratory. The first was created in 2002, using the genome of this virus that can cause paralysis in young children.
ANSWER: poliovirus

140-13-75-09208
9. During this event, the anarchist Alexander Berkman shot and stabbed Henry Clay Frick. For 10 points each:
[10] Name this 1892 labor dispute involving the Amalgamated Association of Iron and Steel Workers in the namesake Pennsylvania town.
ANSWER: Homestead Strike
[10] The steelworks at which the Homestead Strike occurred were owned by what Scottish immigrant who sold his namesake steel corporation to J.P. Morgan's United States Steel Corporation in 1901? His philanthropy included funding libraries throughout the United States.
ANSWER: Andrew Carnegie
[10] The Homestead Strike was broken with the help of this private detective agency that thwarted an assassination attempt on Abraham Lincoln in 1861.
ANSWER: Pinkerton National Detective Agency
030-13-75-09209
10. For 10 points each, name these units of analysis looked at by linguists.
[10] Linguists further divide these sections of a word into an onset, nucleus, and coda. In English, consonants always go from more sonorant to less sonorant at the start of them, and there are three in the word "applesauce."
ANSWER: syllables
[10] These units are the individual language sounds that a native speaker must distinguish. The word "ben" becomes the word "ten" by altering one of them.
ANSWER: phonemes
[10] Constituency tests identify these units of syntax, which make up larger utterances. They can be divided into a specifier, a head, and a complement, or embedded within one another by complementizer words.
ANSWER: phrases
104-13-75-09210
11. Members of this family were targeted during the Pazzi conspiracy, and one member of this family was known as Piero the Gouty. For 10 points each:
[10] Identify this ruling family whose members included the patron of the arts Lorenzo the Magnificent. ANSWER: de Medici
[10] The Medicis ruled this city. Their grip on this city was weakened during the invasion of Charles VIII. ANSWER: Florence [or Firenze]
[10] Cosimo de Medici was the son of the last of these Italian mercenaries, who in earlier times were contracted by rich states like Venice and Genoa to supplement their small armies.
ANSWER: condotierri [or condotierre]
12. During this novel, Clopin leads a group of characters in a rescue attempt following one character being blamed for the stabbing of Captain Phoebus. For 10 points each:
[10] Name this novel that describes how the title character comes to love the gypsy Esmeralda.
ANSWER: The Hunchback of Notre Dame [or Notre-Dame de Paris]
[10] This author of The Hunchback of Notre Dame also wrote Les Miserables.
ANSWER: Victor Hugo [or Victor Marie Hugo]
[10] This archdeacon laughs when Esmeralda is hanged, but dies shortly after when Quasimodo throws him from the cathedral.
ANSWER: Claude Frollo [or Claude Frollo]
023-13-75-09212
13. This trumpeter recorded Porgy and Bess with the help of frequent collaborator Gil Evans. For 10 points each:
[10] Name this jazz artist who recorded Birth of Cool.
ANSWER: Miles Davis
[10] Miles Davis is most famous for recording this album. This album's "So What" song uses a main theme that consists of three perfect fourth intervals followed by a major third.
ANSWER: Kind of Blue
[10] One of Miles Davis's albums is named for his 1961 performance at this venue, a prestigious concert hall in Manhattan. In a well-known anecdote, a pedestrian asked Jascha Heifetz how to get to this place, to which Heifetz replied "Practice!"
ANSWER: Carnegie Hall
14. In 2002, Agrawal, Kayal, and Saxena introduced an algorithm which could test for this property in polynomial time. For 10 points each:
[10] Name this property that integers with only 1 and themselves as factors have.
ANSWER: primality [or word forms like primeness; or obvious equivalents like they are prime]
[10] That large numbers are difficult to factor makes them useful in this type of cryptography. These types of algorithms have one method of encryption secret, but another method broadcast with the message.
ANSWER: public-key cryptography
[10] For their work, Agrawal, Kayal, and Saxena were in 2006 given an award named for this mathematician. He showed no formal theory elaborate enough for arithmetic could be both complete and consistent in his incompleteness theorems.
ANSWER: Kurt Gödel
15. Name these famous kidnapping victims, for 10 points each.
[10] While attempting to start his own singing career out of the shadow of his father, this man was kidnapped from a Lake Tahoe casino in 1963. His ransomers were all caught and imprisoned.
ANSWER: Franklin Wayne Sinatra [or Frank Sinatra, Jr.]
[10] Bruno Hauptmann was executed for the 1932 disappearance of this twenty-month-old son of a pilot.
ANSWER: the Lindbergh baby [or Charles Augustus Lindbergh, Jr.]
[10] This founder of the Church of the Foursquare Gospel claimed to have been kidnapped during her disappearance in 1926, though it is more likely that she was having an affair with Kenneth Ormiston.
ANSWER: Aimee Semple McPherson
16. Answer these questions about intellectual responses to the education of women, for 10 points each. [10] This British thinker argued that women such as herself only appeared less intelligent due to a lack of schooling opportunity in A Vindication of the Rights of Woman.
ANSWER: Mary Wollstonecraft Godwin [prompt on Godwin]
[10] Wollstonecraft was responding to this Swiss Enlightenment thinker's Emile, or On Education. He believed that man was better as a savage before society corrupted him.
ANSWER: Jean-Jacques Rousseau
[10] This 20th-century feminist discussed the dead-end lives of her fellow Smith College graduates in The Feminine Mystique.
ANSWER: Betty Friedan [or Bettye Naomi Goldstein]
104-13-75-09216
17. This man's wife Mildred lusts after a fourth giant TV screen to complete her room. For 10 points each: [10] Name this "fireman" in a Ray Bradbury novel.
ANSWER: Guy Montag [or Guy Montag]
[10] Guy Montag is the protagonist of this Bradbury novel which is named for the temperature at which books burn.
ANSWER: Fahrenheit 451
[10] Montag is encouraged by this retired English professor who secretly owns books and communicates with Montag through an earpiece.
ANSWER: Professor Faber
015-13-75-09217
18. Name these painters who specialized in portraiture, for 10 points each.
[10] This artist executed a series of intimate self-portraits over forty years, but is perhaps best known for the group portrait The Night Watch.
ANSWER: Rembrandt Harmenszoon van Rijn
[10] This rival of Joshua Reynolds is best known for his portraits Mr. and Mrs. Andrews and The Blue Boy. ANSWER: Thomas Gainsborough
[10] This Italian painter working in Paris painted many melancholy, exaggerated portraits of his contemporaries, including Pablo Picasso and Juan Gris.
ANSWER: Amedeo Clemente Modigliani
020-13-75-09218
19. Answer these questions about the delivery of goods to Rome, for 10 points each.
[10] Roman engineers built these sloped bridges to ensure that city residents didn't have to pay for water. An intact one stands at Segovia.
ANSWER: aqueducts
[10] Trade ships to Greece would leave from Brundisium at the end of this famous road, which went east into Italia from Rome.
ANSWER: Appian Way [or Via Appia]
[10] This seaside port took in massive grain ships and other craft that couldn't navigate the shallow Tiber up to Rome itself.
ANSWER: Ostia
20. This city brought in Jean Nouvel to design its new urban renewal project called One Central Park. For 10 points each:
[10] Name this city, that also features, on its Bennelong Point, an opera house with shells for a roof designed by Jorn Utzon.
ANSWER: Sydney
[10] Sydney is the capital of this Australian state, which completely surrounds Canberra and the Australian Capital Territory.
ANSWER: New South Wales [or NSW]
[10] Melbourne is the capital of this state, south of New South Wales.
ANSWER: Victoria
21. The third of these events followed the failed uprising of Tadeusz Kosciuszko. For 10 points each:
[10] Name these divisions of an eastern European country that expanded the territories of Prussia, Austria, and Russia.
ANSWER: partitions of Poland
[10] A Polish state briefly existed in the form of the Duchy of Warsaw, which was created after the signing of this treaty. It ended the Fourth Coalition and was signed between Napoleon and the emperor of Russia.
ANSWER: Treaty of Tilsit
[10] This man was the Russian emperor who signed the treaty of Tilsit. After Napoleon's defeat, he created the Holy Alliance with Prussia and Austria.
ANSWER: Alexander I of Russia [or Aleksandr Pavlovich; prompt on Alexander]

