hsapq

1. This man devised the method of images technique for solving electrostatic problems. He allegedly claimed "There is nothing new to be discovered in physics" besides more precise measurements just a few years before Einstein's work. His namesake unit is equal to nine-fifths of a Rankine. This scientist postulated the heat death of the universe based on the laws of thermodynamics he helped formulate. For 15 points, identify this physicist, whose namesake scale of temperature can be found by subtracting 273 from Celsius.
ANSWER: William **Thomson**, First Baron **Kelvin** [accept either]

233-13-104-14101

BONUS: The Super Bowl championship is named for what legendary coach of the Green Bay Packers, who won the first two Super Bowls?
ANSWER: Vince **Lombardi**

052-13-104-1410-11

2. Fort Antoine in this polity is the location of an outdoor theater and is situated on the northeastern tip of this polity known as Le Rocher. This polity consists of four sections known as quartiers that include the business district of La Condamine and the light industrial Fontvielle zone. This polity includes the Place Du Casino and a namesake Grand Prix. For 15 points, name this principality located in the French Riviera that is the location of Monte-Carlo.
ANSWER: **Monaco**

030-13-104-14102

BONUS: Which bloody Civil War battle fought between Robert E. Lee and George McClellan in Maryland saw fighting around a sunken road and a location that came to be known as Burnside Bridge?
ANSWER: Battle of **Antietam** [or Battle of **Sharpsburg**]

040-13-104-1410-11

3. In one of this author's plays, the protagonist confides to Mitch how her former husband Allan Grey committed suicide. In one play, this man wrote about Amanda Wingfield's desire to find a "gentleman caller" for her daughter Laura. This author also wrote a play that focuses on a woman who has "always depended on the kindness of strangers." That character is Blanche Dubois. For 15 points, name this American playwright of *The Glass Menagerie* and *A Streetcar Named Desire.*
ANSWER: Tennessee **Williams** [or Thomas Lanier **Williams** III]

186-13-104-14103

BONUS: Name the U.S. naval base that was attacked by the Imperial Japanese Navy on December 7, 1941.
ANSWER: **Pearl Harbor**

134-13-104-1410-11

4. An organism in this phylum has giant axons that were studied by Hodgkin and Huxley. The odontophore of organisms in this phylum commonly supports a rasping tongue-like structure called the radula. The outer wall of organisms in this phylum is formed by the mantle, which protects their internal organs and secretes calcium carbonate for their shell. Classes in this phylum include gastropods and cephalopods. For 15 points, identify this invertebrate marine phylum that includes squids and octopi.
ANSWER: **mollusc**s [or **Mollusca**]

066-13-104-14104

BONUS: This is a 20-second calculation question. The five-digit number 7x438 ("seven, x, four, three, eight") is divisible by 9. What digit is x?
ANSWER: **5**

5. One of these events saw the pioneering of techniques known as hydraulicking and coyoteing. The town of Skagway was founded due to one of these events due to its position at the foot of the White Pass Trail. One of the first major ones of these events occurred in Dahlonega, Georgia and was a reason for the passage of the Indian Removal Act. For 15 points, name these events, one of which involved prospectors known as '49ers who travelled to California after news of a strike at Sutter's Mill.
ANSWER: **gold rush**es [or reasonable equivalents]

BONUS: What mountain is the highest peak in North Carolina and the highest point east of the Mississippi River?
ANSWER: Mount **Mitchell**

6. This character compares the interim between "the acting of a dreadful thing" and "the first motion" to "a phantasma" in a speech that partly inspired Eliot's "The Hollow Men." This man cries, "Peace! Count the clock" after one anachronistically chimes during a meeting at his house. This character is told that "the fault...is not in our stars, but in ourselves." Antony proclaims him the "noblest Roman of them all" after his defeat at Philippi. For 15 points, name this Shakespeare character who joins with Cassius to assassinate Julius Caesar.
ANSWER: Marcus Junius **Brutus**

BONUS: What Frankish king had himself crowned Holy Roman Emperor by the Pope on Christmas Day, 800?
ANSWER: **Charlemagne** [or **Charles the Great**; or **Charles I**; or **Carolus Magnus**]

7. This country lost a war that started after two years of joint rule over Schleswig-Holstein. This country that lost the Seven Weeks' War was ruled for nearly seventy years by Franz Joseph. A minister from this country organized a meeting attended by Castlereagh and Talleyrand. In 1867, this country became part of a dual monarchy with its eastern neighbor, Hungary. For 15 points, name this European country served by Klemens von Metternich, who used its capital to host the Congress of Vienna.
ANSWER: Republic of **Austria** [or Republik **Oesterreich**]

BONUS: This is a 30-second calculation question. What is the area of a triangle with sides of length 13,14, and 15, given that the altitude to the 14 side divides it into parts of length 5 and 9?
ANSWER: **84**

8. One example of this genre addressed to "Vera" was written by Vladimir Nabokov and originally referred to the mother of the Muses. Another book in this genre describes how the main character was sexually abused by her mother's boyfriend Mr. Freeman and then helped out of a period of silence by Bertha Flowers after moving back to Stamps, Arkansas. For 15 points, name this genre that includes *Speak, Memory* and Maya Angelou's *I Know Why the Caged Bird Sings,* which both describe the authors's lives.
ANSWER: **autobiography** [or **autobiographies**; or **memoir**s]

BONUS: Name the frightening literary genre exemplified by Horace Walpole's *The Castle of Otranto*.
ANSWER: **Gothic** fiction

9. In a Poisson (PWA-sohn) probability mass function, this function appears the denominator. An extension of this function, which has an output of square root of pi for the value one-half, is the gamma function. For large values, it is well-approximated with Stirling's formula. This function appears in the denominator of each term of a Taylor series. When choosing k objects from n objects, this function is applied to n in the numerator as well as to n and n minus k in the denominator. For 15 points, name this function represented by an exclamation mark.
ANSWER: **factorial**

BONUS: What black poet from Colonial America wrote "To His Excellency General Washington" and "On Being Brought from Africa to America?"
ANSWER: Phillis **Wheatley**

10. In a case in which the mayor of this city was sued, the Supreme Court ruled that Fifth Amendment restrictions did not apply to this city. Confederate sympathizers in this city clashed with Massachusetts militia in the Pratt Street Riot, and Governor Spiro Agnew's response to a 1968 riot in this city prompted Richard Nixon to make Agnew his running mate. For 15 points, name this city that was founded by Lord Calvert as a haven for Catholics and was the site of the siege of Fort McHenry.
ANSWER: **Baltimore**

BONUS: What former anchor of SNL's *Weekend Update* plays Leslie Knope on *Parks and Recreation*?
ANSWER: Amy **Poehler**

11. This athlete's meteoric rise occurred under the training of Cus D'Amato, who also became his legal guardian. His defeat of James Smith gave him the unified title, just five months after he knocked out Trevor Berbick to become the youngest heavyweight champion ever. After an upset loss to Buster Douglas and three years in prison in Indiana, he returned to boxing and bit the ear of Evander Holyfield. For 15 points, name this notorious boxer who was known as "Iron Mike."
ANSWER: Michael Gerald "Mike" **Tyson**

BONUS: What Dutch physicist's namesake transformations show how events in a really fast-moving frame appear to stationary observers?
ANSWER: Hendrik **Lorentz**

12. The *U.S.S. Stark* was in this body of water when it was hit by two Exocet missiles. This body of water contains Kharg Island and the disputed islands of Greater and Lesser Tunb. Port cities on this body of water include Umm Qasr and Bushehr. Bahrain and Qatar jut into this body of water, connected to the Gulf of Oman by the Strait of Hormuz. For 15 points, name this section of the Indian Ocean that lies between the Arabian Peninsula and Iran.
ANSWER: **Persian Gulf** [prompt on **Arabian Sea**; prompt on **Indian Ocean**]

BONUS: Name the Stoic Roman Emperor who wrote a series of philosophical reflections titled the *Meditations*.
ANSWER: **Marcus Aurelius** Antoninus Augustus

13. A sonnet by this poet describes how London wears "the beauty of the morning" like a garment and concludes by describing a "mighty heart" lying still. This author of a sonnet composed "Upon Westminster Bridge" also described how natural images "Flash upon that inward eye / which is the bliss of solitude." His most famous poems include one about daffodils, "I Wandered Lonely as a Cloud," and another about revisiting a site on the Wye, "Tintern Abbey." For 15 points, name this Romantic poet who collaborated with Samuel Taylor Coleridge on *Lyrical Ballads*.
ANSWER: William **Wordsworth**

BONUS: Name the computer hardware invented by Douglas Engelbart, which he originally called an "X-Y Position Indicator for a Display System."
ANSWER: **mouse**

14. Some worshippers of this god interpret the Pacaratra text to describe his five aspects. This god's mount, the enemy of the nagas, is a giant bird called Garuda. This god wields the Sudarshana Chakra and is often depicted holding a conch shell in one of his four hands. This consort of Lakshmi's avatars include Rama and Krishna. For 15 points, name this preserver god from Hindu mythology, one of the Trimurti along with Brahma and Shiva.
ANSWER: **Vishnu**

BONUS: This is 20-second calculation question. Find all values between 0 and 360 degrees, inclusive, for which cosine squared theta equals sine squared theta.
ANSWER: **45, 135, 225, 315** degrees [do not accept partial answers]

15. A non-functional version of the GULO enzyme results in higher primates begin unable to synthesize this molecule. The synthesis of carnitine and the hydroxylation of proline in a collagen molecule both require this molecule as a cofactor. Myriads of clinical trials have disproved Linus Pauling's claim that hearty consumption of this molecule decreases the incidence of common cold. James Lind, a surgeon in the British Royal Navy, provided sailors with food rich in this vitamin to reduce the rampancy of scurvy. For 15 points, name this vitamin present in citrus fruits.
ANSWER: **Vitamin C** [or L-**ascorbic acid**; or **ascorbate**; accept **C** after "vitamin" is read]

BONUS: Allegedly while taking a bath, what Greek thinker discovered a namesake buoyancy principle that states that a floating object displaces its own weight in fluid?
ANSWER: **Archimedes**

16. Hans Richter called this composer's A-flat major symphony "the greatest symphony of modern times." Daniel Barenboim conducted his wife, Jacqueline du Pré, in a famous performance of this composer's cello concerto. He used musical cryptograms to portray his friends and family in movements like "Nimrod." His most famous composition is part of a set of six marches. For 15 points, name this English composer of the *Enigma Variations* and "Pomp and Circumstance," which is often played at graduations.
ANSWER: Sir Edward William **Elgar**

BONUS: What gender of German nouns takes the definite article "der" in the nominative?
ANSWER: **masculine**

17. These structures are called sparse if they are mostly filled with zeros. When each element of these structures contains another of these structures, they are called jagged. In Java, these data structures may exist as hybrid "Lists", in which case they can be heterogeneous. When two-dimensional, these objects are often called matrices, while one-dimensional ones are called vectors. For 15 points, name these ordered, linear collections of data often represented with square brackets.
ANSWER: **array**s [or **matrices** or **matrix** before mention; or **vector**s before mention]

BONUS: What phase change occurs when a solid turns directly into a gas without becoming a liquid?
ANSWER: **sublimation**

18. This gland secretes the hormone that stimulates the thyroid to secrete thyroxine and triiodothyronine (tri-I-odo-thy-row-neen). A tumor of this gland can lead to elevated ACTH and cortisol levels, which is known as Cushing's disease. A lobe of this gland forms from Rathke's pouch in a developing fetus. The magnocellular neurons of the posterior lobe of this gland release oxytocin and vasopressin, or ADH. This endocrine gland protrudes from the hypothalamus. For 15 points, identify this gland that secretes human growth hormone.
ANSWER: **pituitary** gland [or **hypophis**]

BONUS: What Austrian composer developed the twelve-tone technique and composed the string sextet *Transfigured Night*?
ANSWER: Arnold **Schoenberg**

19. In one poem, this poet declared that "you must be he I was seeking." This poet of "To a Stranger" proclaimed "the ship has weather'd every wreck, the prize we sought is won" in a eulogy for a president. In one poem, this man proclaimed that "the arms of those I love engirth me, and I engirth them." This poet of the eulogy "O Captain My Captain" included "I Sing the Body Electric" in his collection *Leaves of Grass.* For 15 points, name this American poet of "Song of Myself."
ANSWER: Walter **Whitman**

BONUS: This is a 30-second calculation question. Find all values between 0 and 180 degrees for which sine squared of x equals 3 times cosine squared of x.
ANSWER: **60** and **120** degrees [both answers required, do not prompt on just one]

20. Picrotoxin and bicuculline (BUY-cook-YOU-lean) antagonize this compound's receptors. An agonist of this compound produced by the *Amanita* mushroom is called muscimol (MUSK-im-all). This compound is synthesized by decarboxylation of glutamic acid using a Vitamin B6 cofactor. This neurotransmitter's receptors are divided into A & B types and are the target of benzo-diaz-epines. It has a role similar to that of glycine. For 15 points, name this chief inhibitory neurotransmitter, which has a four letter acronym.
ANSWER: **GABA** [or **gamma-amino butyric acid**]

BONUS: What term refers to a chromosome that is not a sex chromosome?
ANSWER: **autosome**

21. This painter's *Still Life with Ginger Pot I* came from his brief flirtation with Cubism. He painted bits of colored paper and plastic stuck to a lozenge-shape in an unfinished "victory" version of his most famous artwork. Across three block in another of his paintings, grey dots appear and disappear via an optical illusion. The city grid of Manhattan and a kind of dance music influenced his most famous painting. For 15 points, name this Dutch-born painter of *Broadway Boogie-Woogie*.
ANSWER: Pieter (Piet) Cornelis **Mondrian** [or Mondriaan; not that the pronunciation is different or anything]

BONUS: This is a calculation question. Diamonds are removed from a standard deck of cards until the probability of drawing a diamond is less than 1/6. How many diamonds are removed?
ANSWER: **6**

22. One character in this story refers to a home with a secret panel in which silver was hidden from Sherman's troops. In this story, a restaurant is advertised with a series of highway signs that read, "A VETERAN!" and "THE FAT BOY WITH THE HAPPY LAUGH." That restaurant's owner, Red Sammy Butts, is insulted by June Star in this story, in which the cat Pitty Sing causes a car accident. For 15 points, name this short story in which a criminal called The Misfit murders a family on a road trip, written by Flannery O'Connor.
ANSWER: "**A Good Man Is Hard to Find**"

BONUS: In German, the choice of which article, "der," "die," or "das," is correct is governed by what property of a noun?
ANSWER: grammatical **gender**

23. The stress-energy tensor is the source of this interaction, and it is the weakest of the four fundamental forces. The strength of this force between two bodies is inversely proportional to the square of the distance between them and is described using a "universal constant." On Earth, it causes objects to accelerate downwards at 9.8 meters per second squared. For 15 points, identify this force studied by Isaac Newton, possibly because of an apple falling on his head.
ANSWER: **gravity**

BONUS: What sorceress who lived on the island of Aeaea (EYE-ee-uh) turned Odysseus's men into pigs?
ANSWER: **Circe**

24. This man assigned Nellie Bly to feign insanity and live in a mental institution for ten days. Richard Outcault created the "Yellow Kid" while working for this man before defecting to this man's rival. This owner of the *New York World* employed increasingly dirty tactics in his rivalry with William Randolph Hearst. For 15 points, name this 19th-century newspaper magnate who endowed a namesake prize for excellence in journalism.
ANSWER: Joseph **Pulitzer**

BONUS: Which Thomas Hardy novel's title character has her marriage to Angle Clare disrupted because of her rape at the hands of Alec?
ANSWER: **Tess** of the d'Urbervilles [or **Tess** Durbeyfield; or Tess **d'Urbervilles**]

25. A participant in the most recent of these events showed off a tattoo of the Serenity Prayer and the U.S. Army Dental Corps. That participant was Kansan Theresa Vail. Wendy Fraser tweeted the 2013 edition of this event was a "nice slap in the face to the people of 9-11" after the winner used a Bollywood dance. Various racist tweets appeared after it was won in September 2013 by Indian-American Nina Davuluri. For 15 points, name this beauty pageant held every year in Atlantic City.
ANSWER: **Miss America** pageant

26. Employees of this organization posed as Arab sheikhs in order to implicate six congressmen in the Abscam operation. One employee of this agency organized "dead drops" of information for Russian agents and was Robert Hanssen. While working for this organization, Melvin Purvis led the team that killed John Dillinger, a man who this organization named "Public Enemy #1." For 15 points, name this organization whose longtime director was J. Edgar Hoover.
ANSWER: **Federal Bureau of Investigation** [or **FBI**]

27. This country's major poet is often depicted playing the stringed *dombra.* The Irtysh River flows through Lake Zaysan in this country, while the Ili River flows into its Lake Balkash. The largest city in this country is Almaty. It contains the largest space launch facility in the world, the Baikonur Cosmodrome. Nursultan Nazarbayev is the president of this largest landlocked country in the world. For 15 points, name this Central Asian country south of Russia and west of Mongolia.
ANSWER: **Kazakhstan**

080-13-104-14127

00--20-1410-11

28. The Melian Dialogue takes place between representatives of Melos and this city hoping to conquer Melos. It was connected by the long walls to the port of Piraeus. Tribute given to this city allowed it to build up a powerful navy. It was the most powerful member of the Delian League, which fought against a league of city-states allied with Sparta in the Peloponnesian War. For 15 points, name this city whose Acropolis contains the Parthenon.
ANSWER: **Athens**

121-13-104-14128