



1. Artists from this country produced a painted limestone sculpture known as the Seated Scribe. Nobles in this country were often buried in mud-brick above-ground tombs called *mastaba*. Another art form from this country is a kind of ceremonial figurine called the *ushabti*. Two serpopards wrap their necks around each other in a ceremonial palette from this country. Ludwig Borchardt discovered a bust of a queen of this country that is now in the New Museum of Berlin. This country is also home to a pair of stone temples at Abu Simbel. For 10 points, name this country home to the Sphinx and the Great Pyramid of Giza.

ANSWER: Ancient **Egypt**

080-13-76-08101

2. This author wrote a *King Lear*-inspired novel in which the peasant Fouan divides his land between his three sons titled *The Earth*. In another of his books, Chaval tries to murder his lover Catherine during a cave-in after Etienne Lantier leads a failed miners' strike. This author wrote a twenty-novel cycle about a lower-class family during the Second Empire. That cycle about the Rougon-Macquart family includes his novel *Germinal*. For 10 points, name this French naturalist who defended Alfred Dreyfus in the letter *J'Accuse*.

ANSWER: Emile **Zola**

080-13-76-08102

3. Winslow Homer's *The Life-Line* shows a rescue in progress over several of these objects, a black one of which looms in the left background of *The Raft of the Medusa*. In *Impression, Sunrise*, Monet used horizontal green strokes to cover the foreground with these objects. In Botticelli's *The Birth of Venus*, flowers fall onto many v-shaped examples of these objects. In an example of ukiyo-e, one of these objects propels three boats past Mount Fuji. For 10 points, name these ocean phenomena, a Great one of which appears "off Kanagawa" in a print by Katsushika Hokusai.

ANSWER: ocean **waves** [or wind-generated **waves**; accept **tides** before the word "Great" is read]

195-13-76-08103

4. One member of this phylum can produce glass fibers and is named "Venus's Flower Basket." Members of this phylum can reproduce by producing gemmules, but more commonly do so through fragmentation or budding. Organisms in this phylum contain layers of mesohyl, though they lack true tissue; they also possess "collar cells," or choanocytes, which generate water flow through these organisms. For 10 points, identify this phylum of sessile aquatic animals, also known as sponges.

ANSWER: **Porifera** [or **sponges** before mentioned]

126-13-76-08104

5. This character considers his roommate a "secret slob," unlike his neighbor Ackley. He uses the name of the school janitor when talking to Ernest Morrow's mother. This character asks Horwitz where the ducks go in the winter and is beaten by the pimp Maurice after talking with a prostitute. This character buys a Little Shirley Beans record for his sister Phoebe, and his family includes his deceased brother Allie and his screenwriter brother D.B. For 10 points, name this phony-hating protagonist of J. D. Salinger's *The Catcher in the Rye*.

ANSWER: **Holden** Caulfield [or Holden **Caulfield**]

186-13-76-08105

6. This Greek letter is used to represent the transition function in automata. With epsilon, this letter names proofs used to prove limit statements. An upside down form of this letter, the nabla, is used to represent the gradient. Ratios of isotopes are represented using this letter. This letter denotes the discriminant of a polynomial. This term denotes the low-lying plain composed of sediment deposited at the mouth of a river. For 10 points, identify this Greek letter often used to symbolize the change in a quantity.

ANSWER: **delta**

066-13-76-08106

7. One model of this activity was undermined by the Leontief Paradox, which criticized its emphasis on factor endowments. That Hecksher-Ohlin Model of this activity distinguishes between "capital-intensive" and "labor-intensive" goods. A theory explaining the value of this activity was invented by David Ricardo using the examples of cloth and wine and is known as "comparative advantage." This activity is impeded by protectionist policies, such as tariffs. For 10 points, name this activity by which countries exchange goods with one another.

ANSWER: international **trade** [or free **trade**]

080-13-76-08107

8. In one story by this author, the last paragraph is an acrostic which spells, "Icicles by Cynthia. Meter from me. Sybil." This author of "The Vane Sisters" began one of his novels with a fictional foreword written by John Ray, Jr., claiming that the story has no moral, and that Mrs. Dick Schiller died in childbirth. In another of his novels, Charles Kinbote criticizes a 999-line poem by John Shade. This author wrote about Clare Quilty abducting Dolores Haze from her stepfather, Humbert Humbert. For 10 points, name this author of *Pale Fire* and *Lolita*.

ANSWER: Vladimir **Nabokov** [or Vladimir Vladimirovich **Nabokov**]

190-13-76-08108

9. The entropy change brought about by this process is largely constant across compounds according to Trouton's rule. Namesake tubes used for this process are used to prevent bumping and are made of borosilicate glass. PTFE-coated chips are often used as nucleation sites for this process. The temperature required for this process is elevated in a common colligative property. This transition occurs after the input of the latent heat of fusion. For 10 points, name this phase transition in which a liquid is transformed into a gas.

ANSWER: **boiling** [accept **evaporation**; accept **vaporization**]

048-13-76-08109

10. One character in this novella insists that another was expelled from school for stealing letters, but the real reason was that he "said things" to a group of his male classmates. In this novella's climax, a boy asks to speak to the servant Luke before his heart suddenly stops beating. The bulk of this novella is read aloud by Douglas at a house party. The narrator of this novella has an encounter with Miss Jessel before she and Mrs. Grose fail to stop Peter Quint from allegedly possessing Miles. For 10 points, name this ghost story narrated by a governess, written by Henry James.

ANSWER: *The **Turn of the Screw***

190-13-76-08110

11. The 2010 Democratic nominee for governor in this state, Mark Laker, had to drop out of the race after fabricating lists of campaign donors. In February 2013, this state's lieutenant governor, Mike Sheehy, resigned after using his state-issued cell phone to make over two thousand calls to mistresses. In February 2013, this state's one-term Republican Senator, Mike Johanns, announced that he will not run for re-election in 2014. For 10 points, name this state whose governor, Dave Heineman, survived a 2006 primary challenge from Tom Osborne, the former coach of its state university's football team.

ANSWER: **Nebraska**

019-13-76-08111

12. This state's largest city experienced the 12th Street race riot in 1967. A Secretary of State from this state negotiated the Clayton-Bulwer treaty for the Buchanan administration and ran for president against Zachary Taylor in 1848. Governors of this state included Stevens Mason and Lewis Cass. Gerald Ford served as a representative of this state, which was governed by George W. Romney, the father of Mitt Romney. For 10 points, name this state where Henry Ford founded his motor company in a suburb of Detroit.

ANSWER: **Michigan**

080-13-76-08112

13. One of these tunes entitled "You'll Find Me at Maxim's" is played in the first movement of Shostakovich's *Leningrad Symphony*. Audiences traditionally clap to one of these pieces composed by Johann Strauss Senior to commemorate a victory by Field Marshall Radetsky. One of these tunes is played "...to the Scaffold" in Hector Berlioz's *Symphonie Fantastique*. One of these pieces, entitled "The Liberty Bell," was composed by a man known as the "king" of this form. For 10 points, name this musical form, examples of which include the "Washington Post" and "The Stars and Stripes Forever" by John Philip Sousa.

ANSWER: **marches**

030-13-76-08113

14. This molecule is used as a flocculating agent in the industrial treatment of fluid waste. Membranes made of this molecule are used in electro dialysis and the dressing of wounds. This molecule consists of units with the formula  $C_8H_{13}NO_5$ , forming a long chain from N-acetylglucosamine. This molecule structures the cell walls of hyphae and the beaks of cephalopods. For 10 points, name this polymer that comprises the walls of fungi and the exoskeletons of arthropods.

ANSWER: **chitin**

014-13-76-08114

15. This author wrote, "Though they sink through the sea, they shall rise again," in a poem in which every stanza begins and ends with the line, "And death shall have no dominion." This author of "Fern Hill" wrote a radio drama entitled *Under Milk Wood*. In one of his poems, addressed to "you, my father, there on the sad height," the speaker believes that "old age should burn and rave at close of day." That villanelle includes the line, "Rage, rage, against the dying of the light." For 10 points, name this Welsh poet of "Do Not Go Gentle into That Good Night."

ANSWER: Dylan **Thomas** [or Dylan Marlais **Thomas**]

190-13-76-08115



1A. What German philosopher contrasted *a posteriori* and *a priori* knowledge in his *The Critique of Pure Reason*?

ANSWER: Immanuel **Kant**

1B. What Greek, sometimes known as the "Father of History" or as the "Father of Lies," recorded the Persian Wars in his *The Histories*?

ANSWER: **Herodotus**

2A. Name the state whose courts were overruled by the Supreme Court in *Martin vs. Hunter's Lessee* and in a case upholding the convictions of the Cohen brothers for illegally selling lottery tickets.

ANSWER: Commonwealth of **Virginia**

2B. What national park in Utah, found forty miles northeast of the similar Zion National Park, was formed by erosion of the Paunsaugunt Plateau, which created several natural amphitheaters?

ANSWER: **Bryce Canyon** National Park [do not accept or prompt on "Bryce" alone]

3A. What piece of laboratory glassware is a tall, thin cylinder with a stopcock at the bottom, commonly used for titrations?

ANSWER: **buret**

3B. What astronomical objects that include Hale-Bopp can display a coma and a tail when they interact with solar radiation and the solar wind?

ANSWER: **comets**

4A. Which book of the New Testament includes the "seven signs" and begins, "In the beginning was the Word, and the Word was with God, and the Word was God"?

ANSWER: Gospel According to **John**

4B. Name the John Dilworth-created Cartoon Network show whose title character protects his owners Eustace and Muriel from supernatural villains.

ANSWER: **Courage the Cowardly Dog**

5A. This is 20-second calculation question. What is the probability that a randomly selected positive integer less than or equal to 1000 is divisible by two and four, but not eight?

ANSWER: **1/8** [or **0.125**; or **12.5 percent**]

5B. This is a 20-second calculation question. Find the greatest common divisor of 132 and 242.

ANSWER: **22**

6A. What Japanese author of *The Sea of Fertility* tetralogy killed himself after a failed coup?

ANSWER: Yukio **Mishima** [or Kimitake **Hiroaka**]

6B. What bicyclist was stripped of his seven Tour de France championships after the USADA found him guilty of doping in 2012?

ANSWER: Lance Edward **Armstrong** [or Lance Edward **Gunderson**]

7A. Marc Chagall's birthplace in Vitsyebsk, the memorial to the Kahtyn massacre, and a forest containing the reintroduced European bison are some of the landmarks in what Eastern European country?

ANSWER: Republic of **Belarus** [or Respublika **Belarus**]

7B. What quantity is equal to the integral of force with respect to displacement, and, according to a namesake theorem, equals the change in kinetic energy?

ANSWER: **work** [or **W**]

8A. In poetry, what literary term refers to the continuation of a single grammatical unit across a line break without end-stopping?

ANSWER: **enjambment** [or obvious equivalents]

8B. Which singing duo wrote "The Sound of Silence" in response to the JFK assassination and also sang the music used in the film *The Graduate*?

ANSWER: Paul **Simon** and Art **Garfunkel**

9A. This is a 30-second calculation question. Name all the quadrants where sine of two times x is positive.

ANSWER: **first** and **third** quadrants [or Quadrants **I** and **III**; accept either order]

9B. This is a 30-second calculation question. A red hat contains three green and one blue candies. A white hat contains three green and three blue candies. A hat is chosen at random, and then a candy is chosen at random from that hat. If the candy is green, then express as the simplest fraction the probability that the hat chosen was red.

ANSWER: **3/5** [or **0.6**; or numerical equivalents]

10A. What High German language underwent a reform of its written variety prepared by Ber Borokhov in 1913, five years after the Czernowitz (CHAIR-no-wits) Conference proclaimed it a "national language?"

ANSWER: **Yiddish**

10B. Name the king of Spain who was restored to the throne in 1975 following the death of Francisco Franco.

ANSWER: **Juan Carlos I**



1. A theorem named for this shape concerns three sets of points on two lines, whether the intersection of certain lines connecting them are collinear and is named for Pappus. A persistent cloud pattern on the North Pole of Saturn is in this shape. Pascal's theorem involves inscribing one of these shapes in a conic section. A "close-packed" lattice named for this shape gives the most efficient packing of spheres. In terms of number of sides, this is the largest regular polygon that can be used to tessellate a plane. The carbons in the compound benzene take this shape. For 10 points, identify this polygon with six sides.

ANSWER: **hexagon**

066-13-76-08117

2. This man was viewed as a traitor to abolitionism following his "Seventh of March" speech, which supported the Compromise of 1850. This man defended his alma mater in *Dartmouth College v. Woodward* and represented James McCulloch in *McCulloch v. Maryland*. In a debate with Robert Hayne, this orator declared "liberty and union, one and forever, now and inseperable!" This man negotiated the treaty that ended the Arostook War with Baron Ashburton. For 10 points, name this Senator from Massachusetts who, along with John Calhoun and Henry Clay, made up the Senate's "Great Triumvirate."

ANSWER: Daniel **Webster**

186-13-76-08118

3. This author wrote a novel in which a teacher at a Welsh school called Llanabba becomes implicated in Margot Beste-Chetwynde's South American brothel empire and is sent to jail. This creator of that teacher, Paul Pennyfeather, also wrote a novel in which Aloysius is the teddy bear cared for by Sebastian Flyte. That novel by this author shows the Roman Catholic Marchmain family from the perspective of Charles Ryder. For 10 points, name this British author of *Decline and Fall* and *Brideshead Revisited*.

ANSWER: Evelyn **Waugh** [or Evelyn Arthur St. John **Waugh**]

023-13-76-08119

4. An equation for determining the net external value of this phenomenon rewrites Newton's Second Law as being equal to I times alpha. By facing fingers in the direction of an applied force, the right hand rule can be used to have the thumb point in the direction of this force. This force is equal to r F times the sine of theta, where theta is the angle at which the force is being applied around a pivot. For 10 points, name this physics phenomenon defined as the tendency for an applied force to cause an object to rotate.

ANSWER: **torque** [or **moment** of force; or **moment** of a force]

023-13-76-08120

5. This mythological figure was suckled by a she-bear after being exposed to die in Arcadia by Schoeneus. At the funeral games for Pelias, this person defeated Peleus in a wrestling match. This figure and her husband were turned into lions for making love in Zeus's temple. Meleager was in love with this woman, so he awarded her the skin of the Calydonian boar. Later, she lost a footrace to Hippomenes (hi-PAW-men-eez) when he threw Aphrodite's golden apples in front of her. For 10 points, name this huntress from Greek mythology.

ANSWER: **Atalanta**

014-13-76-08121

6. In this novel, a woman walking with Mrs. Bickerton gets rescued after unsuccessfully trying to escape a pack of gypsies with a cramp from dancing at Highbury. A subplot in this novel is resolved when the death of Frank Churchill's aunt allows him to marry his true love, Jane Fairfax. The title character of this novel unwisely advises her friend Harriet to reject the proposal of Robert Martin, whom Harriet does eventually marry as the title character marries George Knightley. For 10 points, name this Jane Austen novel about a self-proclaimed matchmaker.

ANSWER: Emma

080-13-76-08122

7. This scientist rejected a theory of reactions advanced by Georg Ernst Stahl. This author of the *Elementary Treatise on Chemistry* had scientific texts in other languages translated by his wife Marie Anne. He self-financed a series of elaborate experiments designed to demonstrate his principle of the conservation of mass. This scientist disproved the phlogiston theory of combustion, showing that combustion proceeded via oxygenation. For 10 points, name this French chemist who was executed during the French Revolution.

ANSWER: Antoine-Laurent Lavoisier

014-13-76-08123

8. The Supreme Court found that this company's Tellico project violated the ESA by endangering the snail darter in this company's case versus Hill. This company's original three-person board consisted of Harcourt Morgan, Arthur Morgan, and David Lilienthal. This company was created because of the lobbying of George Norris, who wanted to develop the area around Muscle Shoals. For 10 points, name this government-owned corporation created during the New Deal to establish hydroelectric dams on its namesake river.

ANSWER: Tennessee Valley Authority [or TVA]

080-13-76-08124

9. One of the key debates in this country's upcoming 2013 elections is over a childcare supplement provided to parents who keep their young children out of state-supported nurseries. A January 20th election in one of this country's states saw David McAllister's coalition fall one seat short of maintaining power. That election may be a sign that this country's incumbent leader will lose in a bid for a third term to Peer Steinbrück of the Social Democrats. For 10 points, name this European country currently ruled by the Christian Democrats under chancellor Angela Merkel.

ANSWER: Federal Republic of Germany [or Bundesrepublik Deutschland]

023-13-76-08125

10. A graph can be represented by storing the adjacencies of each vertex in one of these data structures. A skip is made from layers consisting of this data structure. The last element of these data structures is usually NULL, but can be changed to reference their first element to form a "circular" one. They're not trees, but operations on these structures can be made easier by adding sentinel nodes. They are often used to implement stacks and queues. For 10 points, name this data structure whose "doubly" form consists of nodes with pointers to their next node and previous node.

ANSWER: linked list [prompt on list]

201-13-76-08126

11. This man led the campaign to end the Beiyang government known as the Northern Expedition. A suspected kidnapping plot by Li Zhilong led to this man's political feud with Wang Jingwei. He used the Gang Greens as paramilitaries during the "White Terror." He was kidnapped by Zhang Xueliang (shoe-AY-lee-ahng) during the Xi'an (SHEE-ahn) incident and succeeded Sun Yat-sen. For 10 points, name this Nationalist leader of China who was forced to flee to Taiwan after the Chinese Civil War was won by Mao Zedong.

ANSWER: **Chiang** Kai-shek [or **Jiang** Jieshi; or **Jiang** Zhongzheng; or **Chiang** Chieh-shih; or **Chiang** Chung-cheng]

186-13-76-08127

12. Francois Poulenc wrote his *Concert Champetre* for this instrument for a woman who played it, Wanda Landowska. Georg Friedrich Handel wrote a suite of eight pieces for this instrument, the fifth of which concludes with a movement nicknamed "The Harmonious Blacksmith." This instrument has a 64-bar cadenza in the Fifth Brandenburg Concerto, the first concerto to give it a prominent solo. It produces sound by plucking a string rather than hitting it with a hammer. For 10 points, name this keyboard instrument largely replaced after the Baroque period by the piano.

ANSWER: the **harpsichord** [prompt on the **keyboard**; do not accept or prompt on the "piano" or "pianoforte"]

080-13-76-08128

13. At over 867 degree Celsius, this mineral turns into tridymite, and chemical stability above 573 degrees Celsius differentiates the beta and alpha forms of this mineral. This mineral is located below muscovite at the bottom of Bowen's reaction series. This mineral, which exhibits piezoelectricity, has a hardness of 7 on the Mohs scale. Composed of silica, examples of this mineral include citrine and amethyst. For 10 points, name this common mineral that comes in "rose" and "smoky" varieties.

ANSWER: **quartz**

014-13-76-08129

14. This country is the home of the aboriginal Tao people, who share space with the Lanyu nuclear waste facility on its Orchid Island. The Chelung-pu Fault that runs through this country caused the devastating Chi Chi earthquake here in 1999. This country controls the once-threatened islands of Quemoy and Matsu, as well as the Pescadores. In 1971, this country lost its seat at the United Nations to its larger rival. Once known as Formosa, this country competes in the Olympics under the name of its capital. For 10 points, name this island country on the west of the Philippine Sea which is claimed by China.

ANSWER: **Taiwan** [or **Republic of China**; or **Chung-hua Min-kuo**; or **Chinese Taipei**; do not accept or prompt on "China" alone]

019-13-76-08130

15. Increased levels of this substance in the blood causes tendon xanthomas and senile arcus in the eyes. The rate-limiting step of the synthesis of this compound is catalyzed by HMG-CoA reductase. This substance is the final common product in the production of terpenes. It is the predecessor of steroid hormones and is responsible for regulating the fluidity of cell membranes. For 10 points, name this substance, whose levels in the bloodstream are decreased by statins.

ANSWER: **cholesterol**

048-13-76-08131



1. The sum of the first  $n$  ones of these numbers is a perfect square. There are no known perfect numbers that can be described by this term. The integral, from negative to positive infinity, of a function described by this term is always zero. Functions with this descriptor can be represented by the equation  $f$  of  $x$  equals negative  $f$  of negative  $x$  and include the sine function. Those functions have rotational symmetry about the origin. All but one prime is this type of number. For 10 points identify this term that describes numbers not divisible by two, unlike even numbers.

ANSWER: **odd**

066-13-76-08132

2. This character seals her death with the line, "I will, my lord. I pray you pardon me." This character cries, "These words like daggers enter in my ears!" in another scene. Later, this character states, "The lady doth protest too much, methinks," during the performance of a play. In this character's bedroom, Polonius is stabbed while hiding behind an arras. She is the object of the statement "Frailty, thy name is woman!" because she married too soon after her husband's death. For 10 points, name this wife of Claudius and mother of Hamlet.

ANSWER: Queen **Gertrude**

080-13-76-08133

3. Organisms with a periplasmic space are unable to take up one chemical used in this procedure, which is sometimes replaced with the Ziehl-Neelsen stain for acid-fast organisms. This process can use carbol fuchsin in its last step instead of safranin. This process uses iodine as a mordant to trap the crystal violet primary dye. Those that are positive for this test appear purple and have peptidoglycan in their cell walls. For 10 points, name this procedure used to divide bacteria into namesake positive and negative types.

ANSWER: **Gram** staining

048-13-76-08134

4. In one of this author's stories, Cyrus Bourne is shot by his father Reuben at the same place where Reuben abandoned Roger Malvin to die. Another character created by this author is ashamed to find his wife Faith cavorting in the forest. This author collected those stories in *Mosses from an Old Manse*. *Moby-Dick* was dedicated to this man, who began one novel by describing a rose bush next to a jail. He created the characters of Governor Bellingham, Roger Chillingworth, and Pearl. For 10 points, name this author who wrote about Hester Prynne in *The Scarlet Letter*.

ANSWER: Nathaniel **Hawthorne**

190-13-76-08135

5. One member of this dynasty survived a series of rebellions known as the Fronde. Another king from this dynasty arranged for the assassination of Concino Concini. The founder of this dynasty was assassinated by Francois Ravailac and enacted the Edict of Nantes. One king of this dynasty had Madame de Pompadour as a mistress. The cardinals Richelieu and Mazarin served kings of this dynasty, one of whom declared "I am the state!" For 10 points, name this French dynasty that was founded by Henry IV and included Louis XIV.

ANSWER: House of **Bourbon**

186-13-76-08136

Which Italian poet wrote of his love for Laura in *Il Canzoniere*?

ANSWER: **Petrarch** [or Francesco **Petrarca**]

This is a calculation question. A square pyramid has a base with area 16 and lateral surface area of 24. Find the height of the pyramid.

ANSWER: square **root** of **5** [or **radical 5**]