



1. At the end of this time period, gifts of new clothing are exchanged. On its twenty-seventh day, the Night of Power occurs. The name for this period means "scorched." This period comes between Shaban and Shawwal, and it is chiefly observed through the practice of "sawm." During this period, the pre-dawn meal is called "suhoor" and the evening meal is "iftar." It ends at Eid al-Fitr (EED-ahl-FIT-ur), and is observed by fasting during daylight hours. For 10 points, name this month of the Islamic calendar.

ANSWER: **Ramadan**

019-13-74-04101

2. One character in this play foolishly steals a fountain pen from a man who failed to remember him, and burns a pair of University of Virginia sneakers after discovering his father's infidelity. The protagonist of this play is fired by Howard Wagner and is married to the troubled Linda. The protagonist of this play has a wealthy older brother named Ben and has two sons, Happy and Biff. For 10 points, identify this play ending with Willy Loman's suicide, written by Arthur Miller.

ANSWER: **Death of a Salesman**

189-13-74-04102

3. Because this force is non-renormalizable, generating a quantum field theory of it is impossible. Radiation generated by this force requires a quadrupole (KWAH-droo-POLE) source. One constant that defines this force was measured using a torsion balance by Henry Cavendish; that value is equal to 6.67 times 10 to the negative 11. This force bends spacetime according to general relativity. For 10 points, name this force described by Newton's inverse-square law, the attractive force between two bodies.

ANSWER: **gravity**

048-13-74-04103

4. One character in this poem proclaims, "The mind is its own place, and in itself can make a Heaven of Hell, a Hell of Heaven." In this poem, Uriel stands guard on the sun but is deceived by a disguised enemy. It describes a council in the palace of Pandemonium and a resolution by the protagonist that it is "better to reign in Hell than serve in Heaven." For 10 points, name this epic about Satan's temptation of Adam and Eve, written by John Milton.

ANSWER: **Paradise Lost**

080-13-74-04104

5. A legend above this painting explains its meaning in Latin with the words "Causarum Cognitio (cog-NIT-ee-oh)." This painting sits in the Apostolic Palace, facing the same artist's *La Disputa* in the Stanza della Segnatura. The leftmost person in it is Zeno of Citium, and Diogenes lounges alone in blue on the steps in its center. For 10 points, identify this painting in which over twenty ancient philosophers congregate, for which contemporary painters were used as models by its creator, Raphael.

ANSWER: **The School of Athens**

019-13-74-04105

6. In one of this man's stories, Benjamin Driscoll rides a motorcycle across a planet planting trees. He also wrote about a robotic house that keeps running long after a nuclear attack has killed its inhabitants. That story, "There Will Come Soft Rains," was included in this man's *Martian Chronicles*. Another book by this author centers on a fireman who is tasked with memorizing the Book of Ecclesiastes, named Guy Montag. For 10 points, name this science fiction author of *Fahrenheit 451*.

ANSWER: Ray **Bradbury** [or Ray Douglas **Bradbury**]

149-13-74-04106

7. The cells of this organ transform AICA ribonucleotide to ZMP using adenosine kinase. Like the brain, this organ can use ketone bodies if fatty acids are not available. Its cells are connected by gap junctions within intercalated disks. The sac enclosing this organ has fibrous and serous layers. This organ is synchronized via the S-A node transmitting signals to the A-V node, and it consists of two atria on top of two ventricles. For 10 points, name this organ that pumps blood.

ANSWER: **heart**

048-13-74-04107

8. One ruler of this name succeeded his brother Simeon the Proud and was known as "the Meek." The first ruler of this name persuaded the head of the Russian Orthodox Church to move to Moscow, and was known for his financial shrewdness as "Moneybags." The third or "Great" ruler of this name broke away from Mongol lordship. For 10 points, give this name of four princes of Moscow, the last of whom lost the Livonian War, was the first tsar of Russia, and was called "Grozny" or "Terrible."

ANSWER: **Ivan**

019-13-74-04108

9. This compound's pKa is -1.64, which is actually slightly greater than hydronium's pKa. Once produced in the Birkeland-Eyde process, this compound is industrially synthesized today with a rhodium catalyst from ammonia. When mixed with hydrochloric acid, this compound forms a substance which can dissolve gold, aqua regia. This strong oxidizing agent is produced on an industrial scale by the Ostwald process. For 10 points, name this strong acid with formula HNO<sub>3</sub>.

ANSWER: **nitric** acid [or **HNO<sub>3</sub>** until it is read]

190-13-74-04109

10. This man wrote a 1500-page history of his later political life while living on the estate of Sarah Ellis Dorsey. He supported a southern transcontinental railroad as Secretary of War for Franklin Pierce. His vice-president gave the Cornerstone Speech, which argued that the new constitution was founded on the conviction slavery was a moral good. He had plans to flee to Havana when his capital city was about to be taken by Ulysses Grant. For 10 points, name this only president of the Confederacy.

ANSWER: Jefferson Finis **Davis**

121-13-74-04110

11. Thiosulfate reduces a triply-bonded form of this element in a common laboratory demonstration of a clock reaction. This element turns dark blue in the presence of starch. The silver salt of this element was once used in photography. At room temperature, the solid form of this element visibly sublimates into a gas. It is added to sodium chloride to prevent goiters of the thyroid gland. For 10 points, name this purplish gas, the heaviest non-radioactive halogen, which has symbol I.

ANSWER: **iodine** [or **I** before it is read]

190-13-74-04111

12. One character created by this author is punished by Father Dolan and is frightened by Father Arnall's sermon about Hell. He wrote a short story collection including "After the Race," "The Sisters," and "Araby." Buck Mulligan and the aforementioned Stephen Dedalus appear along with Leopold Bloom in his major modernist novel. For 10 points, name this author of *Dubliners*, *A Portrait of the Artist as a Young Man*, and *Ulysses*.

ANSWER: James **Joyce** [or James Augustine Aloysius **Joyce**]

189-13-74-04112

13. On one side of this city is the winter recreation area Towchal Ridge, and other parts of it extend into the Kavir Desert. This city was a small village until Agha Mohammed Khan made it the capital of the Qajar (KUJ-ur) dynasty in 1785. Residents of this city can view the peak of Mount Damavand, as it sits near the Elburz Mountains. After 1979, many roads in this city were renamed, including the former Pahlavi Boulevard and Shah Reza Street. For 10 points, name this capital of Iran.

ANSWER: **Tehran**

019-13-74-04113

14. This experiment used a zinc sulfide screen attached to a microscope as a detector. The incident particles for it were generated from the decay of radon. This experiment was used to disprove the plum pudding model. Its results were compared to "firing a howitzer at tissue paper and having it reflect back at you." For 10 points, name this experiment that used alpha particles to show that an atom contains a central nucleus, performed by a British physicist.

ANSWER: Rutherford's **gold foil** experiment [or **Geiger-Marsden** experiment; or **Rutherford** experiment]

048-13-74-04114

15. One king of this name was responsible for the murder of Alfred the Aetheling, was the son of Canute, and was known as "Harefoot." Another king of this name was captured by Guy I of Ponthieu after a shipwreck and later defeated Tostig at the Battle of Stamford Bridge. That king of this name was shown being killed by an arrow to his eye in the Bayeux Tapestry. For 10 points, give this name of the last Anglo-Saxon king of England who died in his battle against William the Conqueror at Hastings.

ANSWER: **Harold** [or **Harold I**; or **Harold Harefoot**; or **Harold II**; or **Harold Godwinson**]

030-13-74-04115



1A. What technique, that uses randomly generated numbers based on a probability distribution to investigate problems, was named after a casino by von Neumann, Ulam and Metropolis?

ANSWER: **Monte Carlo** methods [or **Monte Carlo** experiments]

1B. Name the popular reformist mayor of Newark who gained fame for personally rescuing victims of Hurricane Sandy and for open responses on his Twitter account.

ANSWER: Cory **Booker**

2A. What technique for manipulating quadratics involves creating a new constant term in order to make the quadratic factorable?

ANSWER: **completing the square** [or word forms]

2B. What type of seismic wave is a transverse wave that cannot travel through the outer core?

ANSWER: elastic **S**-wave [or **secondary** wave; or **shear** wave]

3A. This is a 20-second calculation question. A spinner is divided into four equal portions with values marked -2, -1, 0, and 5. What is the expected value of one spin?

ANSWER: **0.5** [or **1/2**]

3B. This is a 20-second calculation question. Find the x-intercept of the line given by the equation  $y = 3x + 6$ .

ANSWER:  $x = -2$ ,  $y = 0$  [or **(-2,0)**]

4A. What type of argumentative short prose piece was pioneered by Michel de Montaigne, who coined its name from the French for "attempt"?

ANSWER: **essays**

4B. The prohibition against stepping in the shadow of a Polynesian chief is an example of what anthropological concept, referring to a behavior that is forbidden for sacred, often unexplained reasons?

ANSWER: **taboo**

5A. Identify the guard who won the Sixth Man of the Year award in 2012 while playing for the Oklahoma City Thunder and was traded to the Houston Rockets in the offseason.

ANSWER: James Edward **Harden**, Jr.

5B. What English poet wrote "An Horation Ode upon Cromwell's Return from Ireland" and "To His Coy Mistress"?

ANSWER: Andrew **Marvell**

6A. What quantity can be given by mass times the acceleration due to gravity times height?

ANSWER: **potential energy** [or **PE**; prompt on **energy**; do not accept "potential"; do not accept "total energy"]

6B. Name the organization that developed from a Coal and Steel Community and the Common Market, and was formed by the 1992 Maastricht Treaty.

ANSWER: **European Union** [or **EU**]

7A. This is a 30-second calculation question. Ellen can paint a room in six hours. Jean can paint the same room in four hours. Quincy takes twice as long as Ellen to paint the same room. How many hours will it take for the room to be painted if all three work together?

ANSWER: 2 hours

7B. This is a 30-second calculation question. Not counting 1 or 2, what is the smallest number of sides a regular polygon can have such that the measure of an interior angle of that polygon is not a whole number?

ANSWER: 7

8A. What symphony by Josef Haydn gets its name from the *fortissimo* chord at the beginning of its *Andante* second movement, in the midst of otherwise soft piano playing?

ANSWER: **Surprise** Symphony [or Symphony No. **94**]

8B. Name the jazz standard, originally used as the theme for the Duke Ellington orchestra, that was composed by Billy Strayhorn based on the directions to Ellington's house via subway.

ANSWER: "**Take the 'A' Train**"

9A. Cities such as Brownsville, Matamoros, Ciudad Juarez (SEE-oo-dod WAH-rez), and El Paso sit along what river?

ANSWER: the **Rio Grande**

9B. After clashing with Aunt Sarah's devious Siamese cats, the two title characters save a baby from a rat in what 1955 Disney animated feature?

ANSWER: ***Lady and the Tramp***

10A. Which President oversaw the start of a two-year embargo on foreign trade and signed the Louisiana Purchase?

ANSWER: Thomas **Jefferson**

10B. Word forms of what term can refer to either the transfer of heat by direct contact or to the reciprocal of electrical resistivity?

ANSWER: **conduction** [or word forms]



1. This language answers the questions "koho" and "co" with the accusative case, and, like Albanian, it contains the insult "kurva." Unique features of this language's orthography include the "r with a hook over it." Dialects of this language include Chod and Central Moravian. It is the second-most-spoken West Slavic language, behind Polish. For 10 points, identify this Central European language which has extensive mutual intelligibility with Slovak.

ANSWER: Czech language [or Cestina; prompt on Bohemian]

019-13-74-04117

2. Homogentisic acid has this color, which is why people with alkaptonuria have urine of this color. One substance that is this color is the product of the oxidation of tyrosine derivatives. This is the color of the dopaminergic neurons in the midbrain that are degraded in Parkinson's disease; those neurons comprise the substantia nigra. For 10 points, name this color, which is possessed by melanin and by tissue that has died through necrosis.

ANSWER: black [or brown]

048-13-74-04118

3. In one novel by this author, Matthew Maule puts a curse on Colonel Pyncheon's house after being accused of witchcraft. This author wrote a short story about a man who shuns all society after seeing his wife Faith and the rest of the town at a meeting of witches. In another novel by this author of *The House of the Seven Gables*, a minister ends his Election Day sermon with the revelation that he possesses the same mark as Hester Prynne. For 10 points, name this author of *The Scarlet Letter*.

ANSWER: Nathaniel Hawthorne

121-13-74-04119

4. Like the lungs and skin, this organ is unable to function in persons with collagen-4 mutations because its basement membrane is split. Like the ovary, this organ becomes polycystic in a namesake autosomal-dominant disease. The functional units of this organ contain a ball of capillaries called the glomerulus, which pass the filtrate to Bowman's capsule, then to the loop of Henle. The function of these organs is replaced in dialysis. For 10 points, name these blood-filtering organs that produce urine.

ANSWER: kidney

048-13-74-04120

5. This author created a man who carries on an affair with Hilda Burgoyne, although he is married to Winifred, in *Alexander's Bridge*. Another of this author's characters, Emil Bergson, is shot under a white mulberry tree along with Marie Shabata by Marie's husband, Frank. This author wrote a novel narrated by Jim Burden, who details the maturation of the title Bohemian girl and her marriage to Anton Cuzak. For 10 points, name this author of *O Pioneers!* and *My Antonia*.

ANSWER: Willa Cather [or Wilella Sibert Cather]

192-13-74-04121

6. In 2009, this man led the secretive censorship operation known as the 6521 project. He is married to a prominent folk singer who is the star of the annual CCTV New Year's Gala. This man oversaw the planning of the 2008 Summer Olympics. In the November 2012 18th Central Committee meeting, he was selected as the new general secretary of the Communist Party. He is expected to be named Hu Jintao's successor as president in 2013. For 10 points, name this new leader of China.

ANSWER: **Xi** Jinping

019-13-74-04122

7. In retirement, this man served as lead counsel for Venezuela in a boundary dispute with Great Britain. While serving in the Senate, this man invoked the Burlingame Treaty in his opposition to the Chinese Exclusion Act. The Billion-Dollar Congress existed during his Presidency. He signed the McKinley Tariff and the Sherman Antitrust Act. For 10 points, name this President who served between the non-consecutive terms of Grover Cleveland and was the grandson of the shortest-serving President.

ANSWER: **Benjamin Harrison** [prompt on **Harrison**]

030-13-74-04123

8. After this event, the "peseshkaf" was used and the leg of a calf was waved around in the "opening of the mouth" ceremony. Those who underwent this event had to pass monsters in Duat before attempting to reach the reed fields of Aaru. After this event, each person was in danger of having his heart eaten by Ammit if his heart weighed more than the feather of Ma'at. For 10 points, identify this event that, in ancient Egypt, led to dwelling in the realm of Osiris and might result in one's body being mummified.

ANSWER: **death** [or **dying** or other word forms; or other things that might happen to a dead person in ancient Egypt such as having a **funeral** or being **entombed** in a pyramid, etc.; or being made into a **mummy** until it is read]

019-13-74-04124

9. This building's pediment features sculptures by Pierre-Jean d'Angers (don-JAIR). This building was originally known as the Church of Sainte-Geneviève when it was designed by Jacques-Germain Soufflot. It has been a church three times and is now on its third stint as a public monument, where it holds the remains of Marie Curie, Victor Hugo, and Voltaire. For 10 points, name this neoclassical building in Paris, which resembles a Roman temple to "all the gods."

ANSWER: the **Pantheon**

019-13-74-04125

10. In one of this author's novels, two members of the title family read Schopenhauer's *The World as Will and Idea* and listen to Wagner's *Tristan und Isolde*, respectively. In another novel by this author, Serenus Zeitblom narrates the story of Adrian Leverkühn. This author of *Buddenbrooks* wrote of a tuberculosis clinic that is home to Hans Castorp. For 10 points, name this German author of *The Magic Mountain* and *Death in Venice*.

ANSWER: Thomas **Mann**

189-13-74-04126

11. Tad Szulc (SHULK) broke this story for the *New York Times* and wrote about it in a book subtitled *Chronicle of a Disaster*. Eleanor Roosevelt headed up the Tractors-for-Freedom organization to try to raise funds to free its surviving participants. Pepe San Roman led Brigade 2506 during it. The results of this event led to the resignation of Allen Dulles. For 10 points, name this failed attempt of exiles, organized by the CIA, to overthrow the regime of Fidel Castro in an invasion of Cuba in 1961.

ANSWER: **Bay of Pigs** Invasion

030-13-74-04127

12. This goddess once offered a trial by ordeal in which she chewed a sword into three pieces. This goddess banished her messenger to the night, creating the moon god, as punishment for killing the god of food. An evergreen bush was used to hang objects enticing to this goddess, including a string of beads and a mirror, when she hid in a cave after her brother threw a skinned horse at her. For 10 points, identify this sun goddess, the most worshipped *kami* (KA-mee) of Shinto mythology in Japan.

ANSWER: **Amaterasu**-o-mikami

019-13-74-04128

13. This was the third single from the *Wild Ones* album and is accompanied by a video which uses split screen to show beach scenes from Acapulco. This song, which knocked "Call Me Maybe" out of the #1 spot on the Billboard chart, exclaims "my Bugatti the same road" and asks "who done paved the road wider?" For 10 points, name this 2012 hit which advocates doing the title action "while you work," and contains a pursed lips-produced melody created by Flo Rida.

ANSWER: "**Whistle**"

019-13-74-04129

14. A novel set in one of these locations, known as a *sharashka*, is entitled *The First Circle*. Captain Buynovsky's ability to survive in one of these places is doubted in one novel. That novel is set in one of these places whose residents include the elderly Y-81, Alyosha the Baptist, and other "zeks." For 10 points, what locations were described as an "Archipelago" in a memoir by Alexander Solzhenitsyn, who was imprisoned in one under Stalin?

ANSWER: **gulags**

030-13-74-04130

15. The first person to climb this mountain was the author of "The Geographical Pivot of History," Halford Mackinder. It is locally identified with the god Ngai and called by a name meaning "Mountain of Whiteness." While the Embu and Meru people also live near here, this mountain's environs are dominated by a group whose culture was chronicled in a book about "facing" this mountain, the Kikuyu. For 10 points, name this mountain, found a hundred miles northeast of Nairobi.

ANSWER: Mount **Kenya** [or **Kirinyaga**; or **Kere-Nyaga**]

019-13-74-04131



1. In the months before this war, Britain almost became involved when the troop carrier *Kowshing* was sunk. This war began over an accused violation of the Lito Convention, when one side sent troops to suppress the Tonghak rebellion. This war resulted in the Pescadores, the Liaodong Peninsula, and Taiwan being ceded to the victors under the Treaty of Shimonoseki. For 10 points, name this war over control of Korea between two other East Asian powers, which was fought from 1894 to 1895.

ANSWER: First **Sino-Japanese** War [or First **China-Japan** War]

019-13-74-04132

2. The first known example of this construct was the "telluric helix," a creation of A.E.B. de Chancourtois that expanded on Dobereiner's law of triads. John Newlands, the developer of the Law of Octaves, also created an early version of this tool. Another developer of it used it to predict the existence of eka-silicon. Henry Moseley proposed rearranging the components of this diagram by atomic number. For 10 points, name this diagram of the elements developed by Dmitri Mendeleev.

ANSWER: **periodic table** of elements

131-13-74-04133

3. This author wrote a dialogue in which Vivian tells Cyril that art reveals "nature's lack of design," "The Decay of Lying." In a novel by this man, Lord Henry Wotton corrupts the title character with a "yellow book," and the title character manages to stay young while a painting of him grows old. He also wrote a comedy in which Jack and Algernon both wish to have the title name. For 10 points, name this Victorian author of *The Picture of Dorian Gray* and *The Importance of Being Earnest*.

ANSWER: Oscar **Wilde** [or Oscar Fingal O'Flahertie Wills **Wilde**]

080-13-74-04134

4. One process described by this letter breaks down fatty acids to form acetyl-CoA molecules which then feed into the Krebs cycle; that is a namesake "oxidation." Another process of this name is mediated by the W bosons of the weak force and has a "plus" form in which a single positron is emitted from the atomic nucleus. It also names a software state that comes before the final release. For 10 points, name this Greek letter which names a form of radiation less harmful than gamma rays.

ANSWER: **beta**

104-13-74-04135

5. Dense granules in these cells contain ADP. These cells display the glycoprotein 2-b-3-a integrin complex on their surfaces. Aspirin prevents heart attacks by preventing the activation of these cells. These cells, which form from the fragmentation of megakaryocytes, are irregularly shaped and reside in the buffy coat after centrifugation. For 10 points, name these jagged cells that are important in blood clotting.

ANSWER: **platelets**

048-13-74-04136

This is a calculation question. Abigail, Brian, and Chris each pick their favorite one-digit positive integer. What is the probability they pick three different numbers?

ANSWER: **56/81**

What storms form from tropical depressions and are measured by the Saffir-Simpson scale?

ANSWER: **hurricanes**