

1. This city contains Tijuca Forest, the largest urban park in the world. The park contains the granite peak Corcovado, known for its Christ the Redeemer statue which looks over the city. It is also famous for its tourist beaches such as Ipanema and Copacabana. Home of a world famous Carnival celebration, what is this city, the second largest in Brazil whose name translates to River of January?

Answer: Rio de Janeiro (Prompt on Rio)

2. Knowledge of this scientific law helped move scientists away from alchemy and towards modern chemistry since it proves that substances never disappear completely. Although wood, for instance, seems to go away when burned, this law states that it simply changes chemical form. What is this law that suggests matter cannot be created or destroyed in a chemical reaction?

Answer: Law of Conservation of Mass or Conservation of Matter

3. Her sister Cassandra remembered that this author named her first attempted novel *Elinor and Marianne* in 1796. Her second novel was first titled *First Impressions*, and in it Charles Bingley marries Jane Bennett and Mr. Darcy marries Elizabeth. Who is this author who later turned *Elinor and Marianne* into *Sense and Sensibility* and *First Impressions* into *Pride and Prejudice*?

Answer: Jane Austen

4. One of its most recent additions is a life-size statue of Buck O'Neill on the main floor. Christy Matthewson and Walter Johnson were among the first five members voted in. Although there are 298 plaques its main gallery, Joe Jackson and Pete Rose are not among them. What is this museum located in Cooperstown, New York, which enshrines the greatest players and contributors to America's pastime?

Answer: National Baseball Hall of Fame

5. In some stories this goddess is older than Zeus, but in others he is her father. The islands of Kythira and Cyprus both claim her birth but most stories suggest she was born as an adult out of sea foam. She is one of the few gods in Greek mythology to be married, but she is unfaithful to her husband Hephaestus and usually prefers Ares. Who is this goddess in Greek mythology, the goddess of beauty and love?

Answer: Aphrodite

6. **Math Calculation.** Luigi, a champion ice sculptor, has been asked to create 6 life-size sculptures of President Lincoln. To accomplish this task he must rely on his estranged former apprentice, Mortimer. Luigi can complete one sculpture in one hour, and Mortimer can do the same job in two hours. Assuming the two can put aside their differences, how long would it take them together to complete six sculptures of Lincoln for the county fair? It might help if you know the formula $a \text{ times } b \text{ over } a \text{ plus } b$.

Answer: 4 hours or 240 minutes

7. These buildings could hold up to twenty families all related through the mother's side. The Five Civilized Nations were said to inhabit a symbolic one of these with the Senecas guarding the western door and the Mohawks at the east. Constructed from a series of posts covered in bark, they differed in length from 30 to several hundred feet. Not to be confused with smaller teepees or wigwams, what are these large dwellings made by the Iroquois and other Native American tribes?

Answer: Longhouses

8. W. S. Clark created a "balloon" method for it, and most methods rely on the model created by Nathan Isherwood and Chris Browning. The Reed-Kellogg system has fallen out of favor with linguists who prefer X-bar Theory or a parse tree. What is this method taught by English teachers, which creates a pictorial representation of a sentence to emphasize its grammatical structure?

Answer: Sentence Diagrams

9. This work of art consists of 32 canvases each 20 by 16 inches. At the 1962 exhibition, the paintings, created with a mechanized silkscreen process, were placed in a straight line, like products on a shelf. Name this work of art that helped jumpstart the Pop Art movement created by Andy Warhol depicting containers of "tomato" and "clam chowder" and named for a common brand of food products.

Answer: Campbell's Soup Cans

10. Twenty-Two of the thirty-two largest cities in the world are located on these bodies of water. They have high levels of biological diversity and are sometimes referred to as the nurseries of the sea because so many marine animals reproduce in their calm, brackish waters. What are these bodies of water formed where rivers meet the sea and where fresh water and salt water mix?

Answer: Estuary or estuaries (Do not accept "rivers;" prompt on "river mouths" or equivalents) _____HALFTIME

11. The title characters of this book ironically use guns only once, during the siege of La Rochelle. Milady de Winter, one of the villains in this novel persuades her jailor to kill the Duke of Buckingham and later kills Constance, D'artagnan's (DAR-tan-yan's) lover. After saving the day, Athos, Portos, and Aramis all retire in what swashbuckling novel by Alexandre Dumas?

Answer: The Three Musketeers (Les Trois Mousquetaires)

12. He is currently a member of the United Socialist Party, which he created in 2006 to merge all the parties in his country that support his so-called Bolivarian Revolution. Recently, his country passed a referendum that will allow him to run for a third term, and he once famously called President Bush, "el Diablo." Who is this outspoken opponent of US foreign policy, the current President of Venezuela?

Answer: Hugo Chavez

13. He abolished feudalism to avoid bringing about another Warring States Period. He standardized units of measurements and built new roads, but this ruler also buried Confucian scholars alive. He is perhaps most famous for beginning the Great Wall and creating a mausoleum for himself featuring an army of terracotta warriors. Name this man who ruled from 259-210 BCE, the first emperor of a unified China.

Answer: Qin Shi Huang or Shi-Huang Ti Also accept "Emperor Qin" pronounced "Chin"

14. Prompted by Brian Epstein to write a song for the American market, it was recorded in Abbey Road studios on October 17, 1963. It was performed twice on the *Ed Sullivan Show*, and it became the first number one hit for the Beatles in America. Beginning "Yeah, I'll tell you something/ I think you'll understand," what is this song in which John Lennon and Paul McCartney plead to grasp an appendage?

Answer: "I Want to Hold Your Hand"

15. Nodes of Ranvier can be found in between myelin sheathes on this type of cell, and serves as a spot where ion flow may happen in the cell. Existing in three basic types, sensory, motor, and inter, these cells contain extensions called dendrites and axons. What is this type of cell, found in the brain and throughout the nervous system, which relay messages from the brain to different parts of the body?

Answer: Neurons (prompt on brain cells or nerve cells)

16. The site was cleared upon the Arab conquest of 638, and today a wooden fence separates male and female worshippers here. The huge blocks of stone at its base are probably part of a temple built by Herod, but some traditions maintain that they are from Solomon's temple. About 160 feet long by 60 feet high, what is this site in Jerusalem where Jewish pilgrims traditionally lament over the temple's destruction and pray for its restoration?

Answer: The Wailing Wall or Western Wall

17. **Math Calculation** Morris is scouting the holes at a miniature golf course to try and get an edge on his competition. He is having trouble with one hole in which there are three doors that swing open on different time schedules. The red door opens 4 seconds after all three doors close. 2 seconds later the blue door opens, and the red door opens again 2 seconds later. After one more second the yellow door opens. Since Morris wants to putt when all three doors are open at the same time, calculate how often all three doors are open by finding the least common multiple of the times the doors are open.

Answer: Every 36 Seconds (red door opens every 4 seconds; blue 6 seconds; yellow 9 seconds)

18. They are phylogenetically related to bacteria since they have their own DNA and often ribosomes. Mutations in the DNA of these cellular organelles have been linked to aging in mammals. Their outer membranes are permeable so that ions could come in, and the ATP produced within could go out. What is this organelle known as the powerhouse of the cell?

Answer: Mitochondria or Mitochondrion

19. This author's Ann Arbor, Michigan, home is on display at the Henry Ford Museum in Dearborn, but he is much more well-known for New England subjects. The only poet to win four Pulitzer Prizes, he read his poem "The Gift Outright" at John F. Kennedy's inauguration. Who is this American poet who also wrote "Stopping by Woods on a Snowy Evening" and "The Road Not Taken?"

Answer: Robert Frost

20. Massachusetts Senator Timothy Pickering opposed it because it expanded the number of slave territories, provided a tyrant millions of dollars, and was perhaps unconstitutional. Nevertheless, ministers of Napoleon and Thomas Jefferson made the deal in 1803 for 15 million dollars. What was this land sale that resulted in the United States doubling in size from land west of the Mississippi?

Answer: Louisiana Purchase

1. Which weighs more, a ton of feathers or a ton of bricks?
 - A. Although they weigh the same, the bricks possess a much greater ratio of mass to volume. What term is given to that ratio?
Answer: Density
 - B. To determine whether a ton of bricks or feathers will float, and you don't have a pool handy, you could use this ratio which equals the density of a substance divided by the density of water.
Answer: Specific Gravity
 - C. For more density fun, you can always pass the time and impress your friends by using this instrument that measures the specific gravity of liquids.
Answer: Hydrometer
2. Identify these works by American author Nathaniel Hawthorne.
 - A. This Hawthorne novel set in 17th century Massachusetts tells the story of Hester Prynne who is forced to wear a badge of shame for committing adultery.
Answer: The Scarlet Letter
 - B. Written a year after *The Scarlet Letter*, this Hawthorne novel chronicles the lives of the Pyncheon family and is named for the gloomy mansion in which they live.
Answer: The House of the Seven Gables (Accept The House of Seven Gables)
 - C. This Hawthorne short story concerns an Italian scientist who feeds his child so much poison that she becomes immune to it and dependent on it.
Answer: "Rappaccini's Daughter"
3. Name the following mathematicians given clues about their written works for 10 points each.
 - A. This Greek mathematician's book *Elements* was the standard text on geometry in the Western world for about 2,000 years.
Answer: Euclid
 - B. This Italian mathematician wrote *Liber Abaci* or *The Book of the Abacus* in 1202 and introduced Arabic numerals to Europe. He is now more famous for a namesake series of numbers.
Answer: Fibonacci or Leonardo of Pisa
 - C. This English mathematician wrote his *Method of Fluxions* in 1671 which contains his development of calculus.
Answer: Isaac Newton
4. It's the world's third largest religion with approximately a billion adherents, but it is often left out when discussing major monotheistic religions.
 - A. What is this major world religion, the predominant religion in India?
Answer: Hinduism
 - B. Most modern Hindus claim that their seemingly many gods are simply incarnations of a single being. What name is given to these incarnations such as Rama and Krishna that also names a graphic representation of a computer user?
Answer: Avatars
 - C. Rama and Krishna are avatars of this Hindu god, described in the Bhagavad Gita as having a "universal form," and also known as the preserver in the Hindu triad.
Answer: Vishnu
5. Alternatively known as the Battle of Mogadishu, the Battle of the Black Sea, and the Day of the Rangers, answer the following about this military conflict.
 - A. The Battle of Mogadishu occurred in this African country on October 3 and 4, 1993.
Answer: Somalia
 - B. The Battle of Mogadishu is best known for this dramatic event where two US helicopters were shot down by rocket-powered grenades. It was the subject of a Mark Bowden book and a 2001 movie.
Answer: Black Hawk Down
 - C. The battle marked a turning point in the 3rd world policy of what US President who would later be criticized for inaction during genocides in Rwanda and Yugoslavia?
Answer: William Jefferson "Bill" Clinton

6. The four top grossing documentary movies of all time were made in the last five years, identify these for 10 points each.

- A. Nearly all of the 49 million dollars made by this film worldwide have been donated by Al Gore to a bipartisan campaign to increase awareness about global climate change.

Answer: An Inconvenient Truth

- B. This 2006 French nature documentary chronicling the yearly journey of Antarctic birds made 77 million dollars.

Answer: March of the Penguins

- C. This 2004 critique of the Bush administration's War on Terror by Michael Moore made 120 million in the US and 220 million worldwide making it the highest grossing documentary film ever.

Answer: Fahrenheit 9/11

7. Scientists use patterns related to temperature changes to label the layers of the earth's atmosphere. Answer the following...

- A. The temperature decreases as you increase in altitude in this layer that is nearest the earth's surface.

Answer: Troposphere

- B. Located above the troposphere, the temperature increases with altitude in this layer which contains ozone and absorbs solar radiation.

Answer: Stratosphere

- C. The molecules of air in this outermost layer are very hot since it absorbs a certain type of solar radiation, but because the molecules are so spread out, this layer would actually feel cold on your skin.

Answer: Thermosphere

8. Gustav Freytag's analysis of Greek and Shakespearean dramas led him to create a namesake pyramid or plot mountain to better discuss dramatic works.

- A. According to Freytag, drama is divided into five parts. This term is given to the start of the story that provides the necessary background and setting. It is followed by the "rising action" stage.

Answer: Exposition

- B. Also known as the turning point, the third part of a play, or the peak of the pyramid, occurs when the main character makes a change for better or worse.

Answer: Climax

- C. This is the last stage of Freytag's model. It follows the "falling action" and in a comedy is the part in which problems are resolved and the characters live happily ever after.

Answer: Denouement

9. Identify the following about the most recent Coldplay album and its intersections with the art world.

- A. Translating to "Long Live Life," this Coldplay album features the songs "Life in Technicolor," "Lost!", and the title track.

Answer: Viva la Vida or Death and All His Friends

- B. *Viva la Vida* takes its name from a painting by this Mexican artist who also painted *Self-Portrait with Thorn Necklace and Hummingbird*. She was married to muralist Diego Rivera and was played by Salma Hayek in a 2002 movie.

Answer: Frida Kahlo

- C. The cover art of Coldplay's *Viva la Vida* is this 1830 painting by Eugene Delacroix featuring a bare-breasted woman holding a musket and a French flag.

Answer: Liberty Leading the People or La Liberté Guidant le Peuple

10. Answer the following about the Russian Revolutions 1917.

- A. This last Russian Tsar was forced to abdicate in 1917 and was killed with his family a year later.

Answer: Nicholas II

- B. This revolutionary and communist politician led the October Revolution and became the first head of the USSR. His preserved body is on permanent display in Moscow.

Answer: Vladimir Lenin

- C. Lenin was the founder of this majority Marxist political party which split apart from the Mensheviks.

Answer: Bolsheviks

11. Identify the following female poets who lived in Massachusetts for 10 points each.
- A. This first female poet published in America, she came to Massachusetts in 1630 with John Winthrop. She wrote the collection *The Tenth Muse Lately Sprung Up in America* as well as the poem "To My Dear and Loving Husband".
Answer: Anne Bradstreet
- B. Purchased as a slave by a Boston family, she became the first published African American poet in 1773 with her collection *Poems on Various Subjects, Religious and Moral*.
Answer: Phillis Wheatley
- C. Born in Amherst, Massachusetts, this reclusive poet wrote "Because I Could Not Stop For Death" and "I Heard a Fly Buzz When I Died"
Answer: Emily Dickinson
12. Math computation is fun! Or not. Either way, compute the following related questions about the line $5x + 3y = 2$. You have 15 seconds for each part.
- A. What is the slope-intercept form of this equation?
Answer: $y = (-5/3)x + 2/3$
- B. Ten points for both, what are the x and y intercepts of this line?
Answer: X: $(2/5, 0)$, Y: $(2/3, 0)$
- C. What is the slope of the line that is perpendicular to the given line?
Answer: 3/5
13. Identify these parts of the eye, for ten points each.
- A. This tissue lines about 70% of the eye and contains about 7 million cones and 100 million rods that convert light into electrical signals.
Answer: Retina
- B. The vitreous form of this gel-like liquid fills the space between the lens and the retina. The name of this substance derives from the ancient Greek belief that the body was filled with four basic substances of this name.
Answer: Humor or Humours
- C. The aqueous humor lies between the lens and this clear, dome-shaped surface that covers the front of the eye. What is this transparent outer layer of the eye that covers the pupil and lens?
Answer: Cornea
14. Identify these pioneers in the history of rock and roll music for 10 points each.
- A. This Mississippi blues guitarist died when he was just 27 in 1938, but his songs for guitar influenced generations of musicians. Legend has it that he got his musical skill from the devil at a crossroads.
Answer: Robert Johnson
- B. Although no single individual invented rock and roll, The Rock and Roll Hall of Fame credits this St. Louis-born guitarist who wrote "Roll Over Beethoven" and "Johnny B. Goode" as the first person "to put all the pieces together."
Answer: Chuck Berry
- C. Known as "The King of Rock and Roll," he pushed rock and roll into the mainstream with songs such as "Hound Dog" and "Jailhouse Rock."
Answer: Elvis Presley
15. Answer the following about the early history of Florida.
- A. Florida was named by this Spanish explorer who landed on the peninsula in 1513 while supposedly searching for the fountain of youth.
Answer: Juan Ponce de Leon
- B. This city in Florida is the oldest continuously occupied European city in the continental US and is home to a huge Spanish fort the Castillo de San Marcos.
Answer: St. Augustine
- C. Florida was the scene for three wars fought between the US government and this Native American tribe. Chief Osceola led this group of Indians in the second war which was fought from 1835-1842.
Answer: Seminoles

16. Identify the following geological oddities around the world.

- A. This monolithic igneous intrusion rises 1267 feet above the surrounding plains in Wyoming and was the first US National Monument.

Answer: Devil's Tower

- B. Called Uluru by the aborigines, this large sandstone formation in central Australia stands 1142 feet above sea level.

Answer: Ayer's Rock

- C. This formation of 40,000 interlocking hexagonal basalt columns in Northern Ireland leads from the foot of a cliff and disappears under the sea.

Answer: Giant's Causeway

17. Identify the following cities with famous auto racing venues for 10 points each.

- A. The Grand Prix of Endurance, an annual 24-hour auto racing event, has been held annually near this French city since 1923.

Answer: Le Mans

- B. Nicknamed the Brickyard, the motor speedway outside this US city can hold 400,000 people making it the highest capacity sporting facility in history.

Answer: Indianapolis

- C. This Alabama city boasts a motorsports complex that seats 175,000 people and is among the largest tracks in NASCAR's Sprint Cup Series.

Answer: Talladega

18. Answer the following about a certain biogeochemical cycle.

- A. Although it makes up 78% of the air we breathe, all animals must get this gaseous element from plants.

Answer: Nitrogen

- B. This is the process by which molecular nitrogen is converted into nitrogen compounds, a process usually performed by bacteria and other microorganisms.

Answer: Nitrogen Fixation

- C. Some Nitrogen fixation occurs during this atmospheric event which can break apart molecular nitrogen causing it to change forms and fall to the ground when it rains.

Answer: Lightning Strikes (Prompt on Thunderstorms)

19. Identify the following characters from Herman Melville's novel *Moby Dick*.

- A. This narrator and protagonist of *Moby Dick* is named in arguably the most famous first line in American literature.

Answer: Ishmael

- B. Name the tyrannical captain of the *Pequod* who has an obsessive desire to kill the white whale.

Answer: Captain Ahab

- C. Lastly name the young first mate of the *Pequod* a thoughtful Quaker whose name was adopted by a Seattle-based chain with over 16,000 locations.

Answer: Starbuck

20. Answer the following about the famous line "Let them eat cake!"

- A. This woman supposedly uttered the line outraging French peasants who had no bread let alone cake.

Answer: Marie Antoinette

- B. That quotation, however, had been floating around for a while appearing in this French philosopher's 1770 *Confessions*, but he is more famous for his *The Social Contract*.

Answer: Jean-Jacques Rousseau

- C. The line may have also been spoken by an aunt of this French king. Name that king who was married to Marie Antoinette and was guillotined in 1793.

Answer: Louis XVI (Prompt on Louis)