

1. Interdisciplinary

An unfinished one can be seen in a portrait of Thomas Gainsborough's daughters, and Rossini wrote a comic duet for them. Maneki Neko is one, as is Behemoth in *The Master and Margarita*. While they are associated with the diseases panleucopenia and toxoplasmosis, historians think the plagues of the Middle Ages would have been much milder if more of these animals had been around. The fictional Bustopher Jones, Mungojerrie, and Old Deuteronomy were created by TS Eliot and used by Andrew Lloyd Webber. Identify these animals whose breeds include Birman, Abyssinian, and Siamese.

ANSWER: Cat(s) (accept any answer that contains cat, feline, felis, or felid in it, do not accept others)

2. Pyramidal Math (10 Seconds)

This type of function gives a solution to the differential equation $\frac{dy}{dx}$ equals k times the quantity one minus y end quantity times y . A type of sigmoid function, it can also be represented by the equation y equals one divided by the quantity one plus e raised to the minus x power. It is used to represent the spread of a disease or the growth of a population that has a carrying capacity. Identify this curve that is almost flat on the left and right ends of the graph but approximates exponential growth over certain intervals.

ANSWER: Logistic (accept additional words such as Growth, Function, or Curve) (prompt Sigmoid, do not accept Log or Logarithmic)

3. World Literature

One of his best-known novels is about a woman who resents the attitude of the rich relatives who support her and takes revenge on them. *Cousin Pons* and that novel, *Cousin Bette*, were grouped together as his *Poor Relations* novels. An early realist, he wrote many novels set in Paris. Name this author whose novels were collected together under the title *The Human Comedy*.

ANSWER: (Honore de) Balzac

4. Current Events

This country is the home of the National Congress for the Defense of the People, which is currently based in its North Kivu Province. A few years ago, the group took over Bukavu, which is in the South Kivu Province. Recently, they have tried to take over the towns of Kiwanja and Goma. Much of the fighting has taken place near this country's borders with Uganda, Burundi, and Rwanda. Name this nation currently headed by Joseph Kabila.

ANSWER: (The) Democratic Republic of (the) Congo (prompt Congo, do not accept Republic of Congo)

5. Biology

A tumor in this gland can lead to acromegaly. One of its lobes produces vasopressin, which affects the kidneys, and oxytocin. Some of the hormones produced by the other lobe affect other hormones, and their release is controlled by hypothalamic hormones. Name this gland located below the hypothalamus near the base of the skull.

ANSWER: Pituitary (Gland) (or Hypophysis)

6. Music

His first opera to receive praise was based on Walter Scott's *The Fair Maid of Perth*, but it closed after eighteen performances. In 1872, he wrote an opera about a slave in love with her master. In 1875, he completed an opera that was poorly received, and he had two heart attacks and died, but that opera is now considered one of the all time greats. It contains the Habanera and the Toreador Song. Name this composer of *Carmen*.

ANSWER: (Georges) Bizet

7. United States History

He was shot in the shoulder at the Battle of Trenton, and he traveled with Robert Livingston to Paris to negotiate the Louisiana Purchase. At one point, he served simultaneously as Secretary of State and Secretary of War. He then went on to win two Presidential Elections, winning all but thirty-four electoral votes the first time and all but one the second time. His Presidency included a major bank panic, the purchase of Florida, and the passage of the Missouri Compromise. Name this President of the Era of Good Feelings who stated that he was against European nations interfering in the Americas.

ANSWER: (James) Monroe

8. Physics (30 Seconds)

(Note to moderator: Joules is pronounced like Jewels.) How many Joules of energy are stored on a capacitor if it is ten to the negative eighth farads and it holds ten to the negative third coulombs? If you don't know the formula, you might be able to derive it using the facts that the differential of work is equal to the electrical potential difference times the differential of charge. In a capacitor, the electrical potential difference equals the charge divided by the capacitance.

ANSWER: 50 (Joules) (accept 5 times ten to the first or equivalents)

9. Vocabulary

This adjective describes things that are appropriate for courts of law or for public discussion. It sometimes is used to describe scientific investigations used to establish evidence in a legal case, and it can precede the words medicine or evidence. Give this term beginning with the letter F that, when it has the letter s added on to it, refers to the art of speaking and debating.

ANSWER: Forensic(s)

10. Religion/Mythology

Forty-four years after this man died, the Pope ordered his bones dug up, crushed, and thrown into a river. During his lifetime, his closest assistant was John Purvey and his patron was John of Gaunt. He was closely associated with the Lollard Movement and may have been its founder. In the 1380s, he oversaw the first translation of the Bible from Latin into vernacular English. Name this man who became known as the Morning Star of the Reformation.

ANSWER: (John) Wycliffe

11. Pop Culture

After starring for Dan Devine at Notre Dame, he was selected in the third round of the 1979 draft. He spent his first year-and-a-half in the NFL backing up Steve DeBerg, but he spent the next ten years as a starter before missing most of 1991 and 1992 with injuries and then being traded to the Kansas City Chiefs. His most famous passes were a ten-yard touchdown to John Taylor with thirty-four seconds left in Super Bowl Twenty-Three and a six-yard pass to Dwight Clark that is known as The Catch. His best receiver usually was Jerry Rice. Name this San Francisco 49er quarterback who won four Super Bowls.

ANSWER: (Joe) Montana

12. Geometry/Trigonometry (30 Seconds)

Point C is between Points A and D. Find the measure of Angle ABC if Angle BAC is sixty degrees and Angle BCD is one hundred degrees.

ANSWER: 40 (degrees)

13. Nonfiction

This work begins with the speaker claiming that he almost forgot who he was and that he is not eloquent, and the first part also includes questions as to which people are good for horses. In the second section, the speaker claims that he has always been interested in the truth rather than wealth and family interests. The third part ends with a plea to give good advice to his sons and with the words, "We go our ways - I to die, and you to live. Which is better God only knows." Name this work written by Plato which includes the speeches Socrates made at his trial.

ANSWER: (The) Apology (of Socrates) (accept Apologia) (do not accept Trial of Socrates)

14. British Literature

(Note to moderator: Hesperides has four syllables.) Give the most common title for this poem, which is not its first line. It contains the lines, "The glorious lamp of heaven, the sun, The higher he's a-getting, The sooner will his race be run, And nearer he's to setting. That age is best which is the first, When youth and blood are warmer; But being spent, the worse, and worst Times still succeed the former." This work was first published in 1648 in a work called Hesperides. Its first line is, "Gather ye rosebuds while ye may," and its writer never married. Name this work by Robert Herrick.

ANSWER: "To the Virgins, to Make Much of Time" (must be exact)

15. Geography/Earth Science/Astronomy

(Note to moderator: Biome is pronounced BIGH-ome.) This biome contains cottongrass, larches, and ermines and is characterized by wide variations in temperature. Trees adapt by having little area for transpiration and by not wasting any time needing to grow leaves, and animals adapt by changing colors, migrating, and hibernating. Name this biome of the Northern hemisphere that exists just South of the tundra.

ANSWER: Taiga (or Boreal Forest) (do not accept Forest)

16. Algebra (30 Seconds)

Give the x- and y-coordinates of the only point of intersection between the parabola y equals x squared plus four x plus 8 and the line y equals six x plus seven.

ANSWER: (1,13) (or $x=1$, $y=13$)

17. Art/Architecture

(Note to moderator: Cirque is pronounced Sirk.) He painted several portraits of his friends Claude Monet and Alfred Sisley. Late in life, he suffered from rheumatoid arthritis, but he continued to paint even when he needed a nurse to put the brush in his hand. Name this artist who painted Girls at the Piano, A Girl With A Watering Can, The Large Bathers, Jugglers at the Cirque Fernando, and Luncheon of the Boating Party.

ANSWER: (Pierre Auguste) Renoir

18. Chemistry

When this ion combines with carbonate, it forms salt of hartshorn. When it combines with iron sulfate, it forms Mohr's salt. It is commonly combined with nitrate to form explosives, and it is eliminated in the urea cycle. Its charge is positive one, and its five atoms combine for a molecular mass of eighteen. Name this common ion containing nitrogen.

ANSWER: Ammonium (prompt answers including NH₄, do not accept Ammonia)

19. United States Literature

The narrator of this novel is in love with a woman who gets a divorce and is then engaged to Mike Campbell. The narrator is a journalist in Paris who travels to Pamplona, and the woman, who drinks heavily, is named Lady Brett Ashley. The title of the book is taken from Ecclesiastes. Name this 1926 work about Jake Barnes by Ernest Hemingway.

ANSWER: (The) Sun Also Rises

20. World History

When he was seventeen, his brother was hanged for a terrorist bomb plot. Fifteen years later, he wrote a pamphlet titled *What Is To Be Done*, which he claimed was read by or to a majority of his countrymen. At the beginning of World War One, he was in Austria but soon moved to Switzerland. During the war, the Germans allowed him to travel across their country in a sealed train, and he soon became chairman of the Council of People's Commissars. A few years later, he suffered some major strokes, and he died in 1924. Name this Bolshevik who, near the end of his life, was very critical of Stalin.

ANSWER: (Vladimir Ilyich) Lenin (accept Ulyanov)

Tiebreakers:

If you need to replace a question, take the corresponding question from the Replacement Packet rather than one of these questions. In case of a tie, use these questions in order until one is answered correctly.

He won a Pulitzer Prize for his coverage of Jimmy Carter's Office of Management and Budget Director Bert Lance. Some of his books include *Take My Word For It, You Could Look It Up*, and *The Right Word in the Right Place at the Right Time*. This writer also wrote speeches for Richard Nixon and wrote the book *Before The Fall: An Inside View of the Pre-Watergate White House*. Name this writer who often contributed to the column *On Language*, which was about word usage.

ANSWER: (William or Bill) Safir(e)

This is the only rational solution to the equation $4x^3 - x^2 - 8x + 2 = 0$. If you roll two standard dice, it is the probability of getting any of the sums three, four, or five. It is the x-coordinate of the vertex of the graph of $y = 2x^2 - x + 1$. Give this number equal to the probability of picking a spade from a standard deck of cards.

ANSWER: $\frac{1}{4}$ (or 0.25)

This country borders Bolivia, Brazil, Chile, Paraguay, and Uruguay. Name this country whose capital is Buenos Aires.

ANSWER: Argentina