

1. Pop Culture

He won the American League Triple Crown in 1956. Though he had a great career, many people think he would have been even better if he had not injured his knee chasing a Willie Mays fly ball when they were both rookies in the 1951 World Series. He also drank heavily, which probably contributed to his death at the age of 63. Name this Yankee centerfielder from the 1950s and '60s who hit 536 home runs, which was considered a lot at the time.

ANSWER: (Mickey) Mantle

2. World Literature

Near the beginning of this play, a character tells The Manager that he doesn't want to wear a cook's cap, and The Manager complains that nobody in France is writing good comedies. The rehearsal is soon interrupted by a family who spend the day trying to convince The Manager to make a play about them. Name this 1921 work by Luigi Pirandello.

ANSWER: Six Characters In Search of an Author (or Sei personaggi in cerca d'autore)

3. Algebra (10 Seconds)

Yuri Matiyasevich connected these to recursively enumerable sets, which meant that there was no algorithm to solve all of them. Named after a 3rd Century mathematician, one example is the equation in Fermat's Last Theorem, though many people associate them with linear equations. Name these equations, often with more than one solution, that can only be solved using integers.

ANSWER: Diophantine (Equations) (accept Diophantus)

4. Art/Architecture

One of his pictures, which might be a self-portrait, shows a man wearing a wide red turban. He also completed a work begun by his brother Hubert called *The Adoration of the Mystic Lamb*; it is better known as *The Ghent Altarpiece*. Name this 15th Century Dutch artist who painted *The Arnolfini Wedding*.

ANSWER: (Jan van) Eyck

5. Chemistry (30 Seconds)

For this problem, use the approximation that Planck's constant is 6.63×10^{-34} Joule seconds, and include units in your answer. Find the de Broglie wavelength of a particle with a mass of 6.63×10^{-40} kilograms moving at a velocity of ten thousand meters per second.

ANSWER: 100 meters (accept equivalents such as 10^2 m)

6. Religion/Mythology

Translated literally into English, this term means 'instrument of thought'. Sometimes, japa malas are used to keep track of them. A famous example can be translated as 'Hail the jewel in the locus,' but many examples cannot be translated. They often are based on Sanskrit. Name these short statements often chanted by followers of Eastern religions.

ANSWER: Mantra(s)

7. US History

He served as Andrew Jackson's 2nd Attorney General and 4th Secretary of the Treasury, but he did not stay long in the latter position because the Senate refused to confirm him. The Senate also refused to confirm him as a Supreme Court Associate Justice, but it later allowed him to become the Chief Justice. Two of the early cases he presided over were Charles River Bridge and The Amistad. Name this Judge who wrote the majority opinion in the Dred Scott case.

ANSWER: (Roger) Taney

8. Geometry/Trigonometry (30 Seconds)

Give your answer in simple radical form. What is the tangent of theta if it is an acute angle and the cosine of theta is $\frac{2}{3}$?

ANSWER: Root 5 Over 2

9. Language Arts

Sometimes pluralized, this word can refer to land and the buildings on it. It comes from Latin words meaning 'things mentioned before', and it sometimes refers to the preliminary statements in a legal document. It used to commonly be preceded by the words Major or Minor. Name this synonym of Assumption which is used in logical arguments.

ANSWER: Premise(s)

10. Astronomy/Earth Science/Geography

(Note to moderator: Manitoulin is pronounced 'Man-it-too-lin'. Sault is pronounced 'Soo'.) Towns on this body of water include Sarnia and Bay City. It also contains Manitoulin Island, which is the largest island in a freshwater lake. It drains into the Saint Clair River and receives water from Sault Sainte Marie. Name this Great Lake between the province of Ontario and the Lower Peninsula of Michigan.

ANSWER: (Lake) Huron

11. World History

His last name was changed at the age of forty because he was good at finding openings in enemy lines. He at first defeated the French Army, then joined forces with it to defeat the Spanish and British, and finally was opposed by the French and died in a French prison. His main goal was accomplished in 1804, one year after he died. Born a slave, he fought hard to end slavery on his native island, Hispaniola. Name this leader of Haiti.

ANSWER: (Francois-Dominique Toussaint) L'Ouverture (accept Toussaint or Breda)

12. Calculus/Combinatorics (10 Seconds)

(Note to moderator: $f(C)$ is pronounced 'f of C'.) This theorem is used to prove Rolle's Theorem and is only true for closed and bounded intervals. It is similar to the boundedness theorem but is more specific. One way to state it is that in any closed interval $A B$, there exist values C and D such that for all values of x in $A B$ the quantity $f(C)$ is less than or equal to $f(x)$, which is less than or equal to $f(D)$. This is equivalent to saying that the function has a minimum and maximum. Name this theorem abbreviated EVT.

ANSWER: Extreme Value (Theorem) (prompt EVT)

13. British Literature

This collection contains forty-four poems, the last of which begins: "Belovèd, thou hast brought me many flowers Plucked in the garden, all the summer through And winter, and it seemed as if they grew In this close room, nor missed the sun and showers." The one before that ends: "and, if God choose, I shall but love thee better after death." Name this collection first published in 1850 that was written by Elizabeth Barrett Browning.

ANSWER: Sonnets from the Portuguese

14. Music

(Note to moderator: Andante is three syllables, and Eroica has four syllables.) This term sometimes precedes the term sostenuto, as it does for the first movement of the *Moonlight Sonata*. In Latin, it means At Ease, and it is often used in the second movements of pieces, including the *Eroica*. Identify this tempo that is faster than largo and slower than andante.

ANSWER: Adagio

15. Biology

(Note to moderator: Monogenea is pronounce Mahn-eh-JEE-nee-ah.) This is the most primitive phylum with bilateral symmetry and with a mesoderm. If you include Monogenea, it contains four classes, three of which are always parasitic. Name this phylum which consists of flukes, tapeworms, and flatworms.

ANSWER: Platyhelminthes (accept different word forms, accept Flatworms before they are mentioned)

16. Technology

(Note to moderator: Kinescope is pronounce KIN-uh-scope.) Give a three-word answer, not an abbreviation. Some people claim that the first one was invented by Karl Ferdinand Braun in 1897. Over the next few decades, it was used to make fundamental scientific discoveries, and in 1929 a Russian used the same basic design to build a kinescope. One end contains a negatively charged electrode, while the other end contains a fluorescent screen. Name this device used for years to build television sets.

ANSWER: Cathode Ray Tube(s) (do not accept CRT)

17. Current Events

This Senator is working with Senator Leahy on Identity Theft legislation and with Senator Bingaman to control carbon emissions. A few months ago, he claimed that then-Attorney General Gonzales defied logic and plain English. He has also worked closely with Senator Casey, the junior Senator from his state. Actions like these have led to him being called a Republican in Name Only. Name this Senator from Pennsylvania.

ANSWER: (Arlen) Specter

18. Nonfiction

His best-known work is written in the third person, but it describes how he led an effort to stop a Swiss migration and later ended a revolt in his conquered territories. The other history attributed to him is *Commentaries on the Civil War*. Name this Roman emperor who wrote *Commentaries on the Gallic War* and was later assassinated.

ANSWER: (Gaius) Julius Caesar (prompt Caesar)

19. Physics (30 Seconds)

A three kilogram mass is attached to a one kilogram mass by a string, and they are sitting on a frictionless surface. The three kilogram mass is pulled so that the one kilogram mass follows it. What is the tension in the string if the three kilogram mass is pulled with a force of one Newton?

ANSWER: $\frac{1}{4}$ Newtons (or .25 Newtons)

20. US Literature

He worked as an auto mechanic in Chicago while writing his first novel, *The Orchard Keeper*. In 1979, he completed a novel he had been working on for a long time about a fisherman in Knoxville named Cornelius Suttree. He then switched to writing Westerns such as *Blood Meridian* and the *Border Trilogy*, which was completed by *Cities of the Plain*. Name this reclusive author who in 2005 completed *No Country for Old Men*.

ANSWER: (Cormac) McCarthy

Tiebreakers:

This is a computational tossup, so you are allowed 30 Seconds. What is the length of a segment connecting the vertex of the parabola $y=x^2-4x+3$ to either one of its x-intercepts?

ANSWER: Root 2

Many of his drawings were collected in the Wasmuth Portfolio, and he sometimes used the adjectives Usonian and Organic to describe his work. Some of his notable designs include Price Tower, Ennis House, and Pfeiffer Chapel. He is also known for the studios he designed in Spring Green, Wisconsin and Scottsdale, Arizona. Name this architect who designed The Imperial Hotel, the New York Guggenheim, Robie House, Taliesin East and West, and Fallingwater.

ANSWER: (Frank Lloyd) Wright

Give the word that completes this Ben Franklin quote: "Time is..."

ANSWER: Money