

Froshmore Science Replacement Questions 24-25

MATHEMATICS COMPUTATION: What is the length of a diagonal of a square if the area of the square is 50 square units?

ANSWER: **10** (units)

BONUS COMPUTATION: If a hexagon has an area of $96\sqrt{3}$ square units and the apothem has a length of $4\sqrt{3}$ units, what is the length of one side of the hexagon?

ANSWER: **8** (units)

POP/CE: Zoe Kravitz, Maya Hawke, and Lily-Rose Depp all have this title.* The pop culture term was added to the Merriam-Webster Dictionary in 2024. What is the term for a person who gains success or opportunities through familial connections?

ANSWER: **nepo baby**

BONUS: Name the father of Zoe Kravitz.

ANSWER: **Lenny Kravitz**

POP/CE: She was the matriarch of her famous family before she passed away in 2024.* She lost her husband and brother-in-law to assassins' bullets. Name the woman who died six weeks after her third child ended his presidential campaign.

ANSWER: **Ethel Kennedy**

BONUS: Which President awarded Ethel Kennedy the Presidential Medal of Freedom in 2014?

ANSWER: **Obama**

FINE ARTS: In this musical, a character is told to "Get the moonlight out of your hair" in the number "Another Day." This musical's second act begins with a song which includes cups of coffee and * 525,600 minutes as ways to measure a year. What is this musical about the AIDS epidemic which includes the song "Seasons of Love?"

ANSWER: **Rent**

BONUS: Roy Cohn is a character in what Tony Kushner play about the AIDS epidemic which is split into parts called "Millennium Approaches" and "Perestroika?"

ANSWER: **Angels in America:** (A Gay Fantasia on National Themes)

HUMANITIES: The fall of the Soviet Union was argued to be the "end" of this thing by Francis Fukuyama. This thing names a genre of plays which includes

Shakespeare's * Henriad. What is this subject, which names a work by Herodotus?

ANSWER: **History**

BONUS: The philosophy of history and truth was examined by what French thinker of *Discipline and Punish*?

ANSWER: (Michel) **Foucault**

SCIENCE This layer of Earth is composed primarily of molten iron and nickel* and is responsible for creating Earth's magnetic field. It lies between the solid inner core and the mantle. Name this layer of Earth's interior.

Answer: outer core

BONUS SCIENCE What is the name of Earth's outermost layer, which includes both the oceanic and continental plates?

Answer: crust

SCIENCE This type of energy, often associated with height,* is given by the formula $U=mgh$. What is this type of energy that is stored in an object due to its position in a gravitational field?

Answer: Gravitational potential energy

BONUS SCIENCE In the absence of air resistance, what principle states that the total energy in a closed system remains constant?

Answer: conservation of energy (prompt on just "conservation")

SOCIAL STUDIES: After this event, its victim was taken to the Petersen House. This event coincided with the delivery of the line, "You sockdologizing old mantrap" in the play * *Our American Cousin*. What is this event, in which John Wilkes Booth killed the 16th president of the United States?

ANSWER: **Assassination of Lincoln** [accept logical equivalents, but prompt on any answer that doesn't include the name Lincoln]

BONUS: The Assassination of Abraham Lincoln was part of a larger plot which also planned the assassination of what other man, Lincoln's Vice President and later 17th US President?

ANSWER: (Andrew) **Johnson**

SOCIAL STUDIES: **A member of this family was connected to the death of Mary Jo Kopechne in the Chappaquiddick Incident. Another member of this family was injured in the sinking of PT * 109.** Sirhan Sirhan assassinated Robert, a member of what family, whose members include the last president to be assassinated, John Fitzgerald?

ANSWER: **Kennedy**

BONUS: What name was given to John F. Kennedy's administration? It is a reference to a kingdom in Arthurian legend.

ANSWER: **Camelot**

LITERATURE: **People falling down and pies to the face are this type of comedy.*** It usually involves some kind of deception or miscommunication. Name the type of comedy in which everything is completely absurd.

ANSWER: **farce**

BONUS: Who wrote the farce *Comedy of Errors*?

ANSWER: **Shakespeare**

LITERATURE: **It tells the tale of Winston Smith, a citizen of the miserable society of Oceania.*** Smith is trying to rebel against the Party and its omnipresent symbol, Big Brother. Name the dystopian novel and cautionary tale published in 1949.

ANSWER: **1984**

BONUS: Who wrote *1984*?

ANSWER: **George Orwell**