

MATH: What is the term for the segment that connects non-consecutive vertices of a polygon?

ANSWER: **Diagonal**

BONUS: What is the one word description of the face of hexahedron?

ANSWER: **Square** [Hexahedron is also known as a cube]

MATH COMPUTATION: What are the factors of the polynomial $4x^3 + 16x^2 + 12x$?

ANSWER: **$4x(x + 1)(x + 3)$ OR $4x(x + 3)(x + 1)$**

BONUS COMPUTATION: What are the factors of the polynomial $x^3 - 216$?

ANSWER: **$(x - 6)(x^2 + 6x + 36)$**

SOCIAL STUDIES: **The Choctaw and Cherokee were allied to the United States during this war.** Isaac Brock died at the * Battle of Queenston Heights during this war. The Battle of New Orleans occurred during what war which was ended by the Treaty of Ghent?

ANSWER: (War of) **1812**

BONUS: During what War of 1812 battle was Francis Scott Key inspired to write the words to the Star Spangled Banner?

ANSWER: (Battle of) **Baltimore** [prompt on Fort McHenry]

SOCIAL STUDIES: **This man issued the Cartagena Manifesto and the Decree of War to the Death. This man met with another revolutionary at the * Guayaquil Conference.** Gran Colombia was founded by what South American revolutionary known as "The Liberator?"

ANSWER: (Simon) **Bolivar**

BONUS: Which revolutionary did Bolivar meet with at the Guayaquil Conference?

ANSWER: (Jose de) **San Martin**

CURRENT EVENTS/POP CULTURE: **Elon Musk suggested Las Vegas as the location of a cage match with this*** other tech titan. This man challenged Musk to a battle after the two exchanged words in their fierce business rivalry. Name the Facebook co-founder.

ANSWER: **Mark Zuckerberg**

BONUS: Zuckerberg is reportedly trained in which Japanese martial art?

ANSWER: **jiu-jitsu**

CURRENT EVENTS/POP CULTURE: **Three of her former dancers sued*** her for a hostile work environment. They say the singer, who's known for championing body positivity, weight shamed them. Name the pop star.

ANSWER: **Lizzo**

BONUS: Lizzo is famously known for playing which musical instrument?

ANSWER: **flute**

SCIENCE (calculation): Add the following numbers and give your ANSWER with the correct number of significant digits: 320 grams, 10.0 grams and 24.85 grams.

ANSWER: 350 (grams)

BONUS: Multiply the following numbers and give your ANSWER with the correct number of significant digits and units: 4.0 cm, 12.0 cm, 3.0 cm.

ANSWER: 140 cm³ [centimeters cubed or cubic centimeters]

SCIENCE (calculation): The giant pendulum in Mrs. Grey's class takes 5.0 seconds to swing from one side of the whiteboard to the other and back. What is the pendulum's frequency in hertz? You do not need to express your ANSWER using significant digits.

ANSWER: 0.2 (hertz)

BONUS: A specific wavelength of radiation has a frequency of 3,000,000 Hertz. Using 300,000 km/s as the speed of light, what is the wavelength of the radiation in meters? Again, you do not need to express this ANSWER using significant digits.

ANSWER: 100 (m)

LITERATURE: **In addition to being a composer, he was also an educator, social reformer,* philosopher, and painter.** He was referred to as the Bard of Bengal. Name the man who wrote the national anthems for both India and Bangladesh.

ANSWER: **Rabindranath Tagore**

BONUS: Which prize did Tagore win in 1913 for his poetry?

ANSWER: **Nobel Prize**

LITERATURE: **This beast fable was first published in 1945.*** It tells the story of a group of farm animals who rebel against their human farmer. In which book do the animals hope to create a society where the animals can be equal, free, and happy?

ANSWER: **Animal Farm**

BONUS: Who wrote *Animal Farm*?

ANSWER: **George Orwell**

REPLACEMENT QUESTIONS FOR OAAC FROSHMORE MATH 23-24

FINE ARTS: One example of this type of song in Moldova is called “Limba Noastră” in honor of the Romanian language. In *Casablanca* one of this type of song drowns out another example sung by * Nazi officers. “Deutschland Über Alles,” “La Marseillaise” and “The Star Spangled Banner” are examples of what genre of patriotic song?

ANSWER: **National Anthem**

BONUS: What country’s “Kimigayo” is the world’s shortest national anthem?

ANSWER: **Japan**

HUMANITIES: The Pitjantjara and the Pintupi are subgroups of this broad ethnic identity. Many cultures in this broad identity observe a mythology known as The Dreaming or * Dream Time. Who are these people, whose holy sites include Uluru, the indigenous people of Australia?

ANSWER: **Aborigines** [or Australian Aboriginals]

BONUS: Many variations of Australian Aboriginal music includes what low wind instrument native to Australia?

ANSWER: **Didgeridoo**