

Name: _____

Date: _____

8.EE.3

_____ 1. A lab has two bacteria cultures. Culture A contains 8×10^4 bacteria, and culture B contains 4×10^6 bacteria. How do the two cultures compare in size? (2013 8.EE.3)

A. Culture A contains twice as many bacteria as culture B.

B. Culture A contains $\frac{1}{2}$ as many bacteria as culture B.

C. Culture A contains $\frac{1}{25}$ as many bacteria as culture B.

D. Culture A contains $\frac{1}{50}$ as many bacteria as culture B.

_____ 2. The speed of light in a vacuum is 299,792,458 meters per second. Which number, written in scientific notation, is the **best** approximation of the speed of light? (2015 8.EE.3)

A. 0.3×10^7 meters per second

C. 3.0×10^7 meters per second

B. 0.3×10^8 meters per second

D. 3.0×10^8 meters per second

_____ 3. Kevin moved from a city to a small town. The population of the city is 6×10^5 , which is about 15 times as great as the small town. Which expression could represent the approximate population of the small town?

(2016 8.EE.3) (no calculator)

A. 4×10^3

B. 4×10^4

C. 9×10^5

D. 9×10^6

_____ 4. Ellentown College has approximately 3×10^3 students and Pengrove University approximately 30,000 students. How many times as much is the number of students at Pengrove University as the number of students at Ellentown College?

(2016 8.EE.3) (no calculator)

A. 1

B. 10

C. 30

D. 100

_____ 5. Bianca and Nick are both musicians who sell their songs online. During the same year, Bianca sold 8×10^5 downloads of her songs and Nick sold 4×10^6 downloads of his songs. How many times as much is the number of songs that Nick sold than the number of songs that Bianca sold? (2016 8.EE.3)

A. 2

B. 5

C. 20

D. 40

_____ 6. A certain human red blood cell has a diameter of 0.000007 meters. Which expression represents this diameter, in meters, in scientific notation? (2017 8.EE.3) no calculator

A. 7×10^{-6}

B. 7×10^{-5}

C. 7×10^6

D. 7×10^5

_____ 7. City X has a population of 3×10^5 and City Y has a population of 6×10^6 . Which statement correctly describes the relationship between the populations of City X and City Y?

(2018 8.EE.3)

A. The population of City Y is 2 times the population of City X.

B. The population of City Y is 20 times the population of City X.

C. The population of City X is 300,000 **less** than the population of City Y.

D. The population of City X is 3,000,000 **less** than the population of City Y.

_____ 8. The planet Mercury is approximately 3.6×10^7 miles away from the sun, and the planet Jupiter is approximately 4.8×10^8 miles away. About how many times farther from the sun is planet Jupiter than planet Mercury? (2021)

A. 1.3

B. 7.5

C. 13.3

D. 17.3