Name:_____   Date:_____

8.EE.4

_____1. Evaluate: (2013 8.EE.4)

$$(2.4 \times 10^4)(4.5 \times 10^3)$$

     A. 1.08×10^7 B. 1.08×10^8 C. 1.08×10^{12} D. 1.08×10^{13}

_____2. Determine the product. $800.5 \times (2 \times 10^6)$ (2014 8. EE.4)

     A. 1.7×10^7 B. 1.601×10^7 C. 1.7×10^9 D. 1.601×10^9

_____3. At a given time, Saturn was 9.1×10^8 miles from the Sun and Earth was 9.3×10^7 miles from the Sun. By what distance is one planet closer to the Sun than the other planet?   (2014 8.EE.4)

     A. 2×10^1 B. 2×10^{15} C. 8.17×10^7 D. 8.17×10^8

_____4. The combined volume of all the tanks at an aquarium is 1.25×10^6 gallons. The aquarium plans to install a new dolphin tank with a volume of 250,000 gallons. What will be the total volume of all of the tanks at the aquarium after the new dolphin tank is installed?   (2014 8.EE.4)

     A. 1.5×10^5 B. 3.75×10^5 C. 1.5×10^6 D. 3.75×10^6

_____5. What is the value of the expression below?   (2016 8.EE.4)

$$\frac{(4.8 \times 10^8)}{(1.2 \times 10^4)} \times (2.2 \times 10^{-6})$$

     A. 0.88   B. 0.088   C. 0.0088   D. 0.00088

_____6. The mass of a dust particle is approximately 7.5×10^{-10} kilograms and the mass of an electron is 9.1×10^{-31} kilograms. Approximately how many electrons have the same mass as one dust particle?   (2017 8.EE.4)

     A. 1.21×10^{20} B. 1.21×10^{21} C. 8.24×10^{20} D. 8.24×10^{21}

_____7. Which expression is equivalent to $(4.5 \times 10^2) + (6.0 \times 10^3)$ and written in scientific notation?   (2017 8.EE.4)

   A. 1.05×10^6 B. 2.7×10^6 C. 6.45×10^3 D. 10.5×10^5

____8. Two cells are viewed and measured under a microscope. The approximate diameter of each cell is listed below.

- cell P: 5.0×10^{-4} meters   cell P: 3.0×10^{-5} meters

What is the approximates difference, in meters, between the diameter of cell P and the diameter of cell Q?   (2018   8.EE.4)

   A. 2.0×10^{-5} B. 2.0×10^{-4} C. 4.7×10^{-5} D. 4.7×10^{-4}

_____9. What is the value of the expression shown below?   (2019 and 2021   8.EE.4)

$$\frac{(1.6 \times 10^5)}{(0.2 \times 10^2)}$$

   A. 0.8×10^3 B. 8×10^3 C. 0.8×10^7 D. 8×10^7

_____10. The closest distance between Earth and Mars is approximately 3.39×10^7 miles. The fastest rocket leaving Earth travels at an average speed of approximately 3.6×10^4 miles per hour. At that rate, which expression could be used to determine the approximate number of hours it would take the rocket to travel that distance?
                                    (2019 and 2021 8.EE.4)

   A. $(3.39 \times 10^7) - (3.6 \times 10^4)$ C. $(3.39 \times 10^7) \div (3.6 \times 10^4)$

   B. $(3.6 \times 10^4) \div (3.39 \times 10^7)$ D. $(3.6 \times 10^4) \div (3.39 \times 10^7)$

11. The mass of Earth is approximately 5.97×10^{24} kilograms. The mass of Venus is approximately 4,870,000,000,000,000,000,000,000 kilograms. What is the difference between the approximate masses, in kilograms, of Earth and Venus? Express your answer in scientific notation.   (2018   8.EE.4)

   Show your work.

                         Answer: _____ kilograms

12. The approximate areas of two states are listed below.

- Texas: 2.69×10^5 square miles

- Rhode Island: 1.21×10^3 square miles

Determine the difference, in square miles, between the area of Texas and the area of Rhode Island. Write your answer in scientific notation.   (2019   8.EE.4)

Show your work.

Answer: _____square miles