Name: _____

8.EE.A.4: Operations with Scientific Notation

1 What is the product of 8.4×10^8 and 4.2×10^3 written in scientific notation?

2 What is the product of (1.5×10^2) and (8.4×10^3) expressed in scientific notation?

3 What is the product of 12 and 4.2×10^6 expressed in scientific notation?

4 What is the product of (6×10^3), (4.6×10^5), and (2×10^{-2}) expressed in scientific notation?

5 What is the quotient of 8.05×10^6 and 3.5×10^2?

6 The quotient of (9.2×10^6) and (2.3×10^2) expressed in scientific notation is

7 If 3.85×10^6 is divided by 385×10^4, the result is

8 What is the value of $\frac{6.3 \times 10^8}{3 \times 10^4}$ in scientific notation?

9 The expression $\frac{6 \times 10^{-7}}{3 \times 10^{-3}}$ is equivalent to

10 If $(7.6 \times 10^n)(3.5 \times 10^3) = 2.66 \times 10^9$, what is the value of n?

11 What is the sum of 6×10^3 and 3×10^2?

12 State the value of the expression $\frac{(4.1 \times 10^2)(2.4 \times 10^3)}{(1.5 \times 10^7)}$ in scientific notation.

13 If the mass of a proton is 1.67×10^{-24} gram, what is the mass of 1,000 protons?

14 If the number of molecules in 1 mole of a substance is 6.02×10^{23}, then the number of molecules in 100 moles is

15 In 1995, the federal government paid off one-third of its debt. If the original amount of the debt was \$4,920,000,000,000, which expression represents the amount that was not paid off?

16 Two objects are 2.4×10^{20} centimeters apart. A message from one object travels to the other at a rate of 1.2×10^5 centimeters per second. How many seconds does it take the message to travel from one object to the other?

17 The distance from Earth to the imaginary planet Med is 1.7×10^7 miles. If a spaceship is capable of traveling 1,420 miles per hour, how many days will it take the spaceship to reach the planet Med? Round your answer to the *nearest day*.

8.EE.A.4: Operations with Scientific Notation
Answer Section

1 ANS:
3.528×10^{12}

REF: 010927ia

2 ANS:
1.26×10^{6}

REF: 061430ia

3 ANS:
5.04×10^{7}

REF: 060927ia

4 ANS:
5.52×10^{7}

REF: 061127ia

5 ANS:
2.3×10^{4}

REF: fall0725ia

6 ANS:
4×10^{4}

$\frac{9.2 \times 10^{6}}{2.3 \times 10^{2}} = 4 \times 10^{4}$

REF: 081006ia

7 ANS:
1

REF: 060207a

8 ANS:
2.1×10^{4}

REF: 010319a

9 ANS:
2×10^{-4}

REF: 011319ia

10 ANS:
5

$\frac{26.6 \times 10^{8}}{3.5 \times 10^{3}} = 7.6 \times 10^{5}$

REF: 061527ia

11 ANS:
6.3×10^{3}

REF: 060628a

12 ANS:
6.56×10^{-2}

REF: 081231ia

13 ANS:
1.67×10^{-21} g

REF: 060429a

14 ANS:
6.02×10^{25}

REF: 010018a

15 ANS:
3.28×10^{12}

REF: 060815b

16 ANS:
2.0×10^{15}

$$\frac{\text{distance}}{\text{speed}} = \frac{2.4 \times 10^{20}\ \text{c}}{1.2 \times 10^{5}\ \text{cps}} = 2.0 \times 10^{15}\ \text{s}$$

REF: 060308b

17 ANS:
499. $\frac{\text{distance}}{\text{speed}} = \frac{1.7 \times 10^{7}\ \text{miles}}{1420\ \text{mph}} \approx 11972\ \text{hours} \approx 499\ \text{days}$

REF: 060029a