NAME _____ DATE _____ PERIOD _____

7-4 Skills Practice

Scientific Notation

Express each number in scientific notation.

1. 3,400,000,000

2. 0.000000312

3. 2,091,000

4. 980,200,000,000,000

5. 0.00000000008

6. 0.00142

Express each number in standard form.

7. 2.1×10^{5}

8. 8.023×10^{-7}

9. 3.63×10^{-6}

10. 7.15×10^{8}

11. 1.86×10^{-4}

12. 4.9×10^{5}

Evaluate each product. Express the results in both scientific notation and standard form.

13. $(6.1 \times 10^{5})(2 \times 10^{5})$

14. $(4.4 \times 10^{6})(1.6 \times 10^{-9})$

15. $(8.8 \times 10^{8})(3.5 \times 10^{-13})$

16. $(1.35 \times 10^{8})(7.2 \times 10^{-4})$

17. $(2.2 \times 10^{-3})^{2}$

18. $(3.4 \times 10^{2})^{2}$

Evaluate each quotient. Express the results in both scientific notation and standard form.

19. $\dfrac{(9.2 \times 10^{-3})}{(2 \times 10^{-6})}$

20. $\dfrac{(4.8 \times 10^{4})}{(3 \times 10^{-5})}$

21. $\dfrac{(1.161 \times 10^{-9})}{(4.3 \times 10^{-6})}$

22. $\dfrac{(4.625 \times 10^{10})}{(1.25 \times 10^{4})}$

23. $\dfrac{(2.376 \times 10^{-4})}{(7.2 \times 10^{-8})}$

24. $\dfrac{(8.74 \times 10^{-3})}{(1.9 \times 10^{5})}$

NAME _____ DATE _____ PERIOD _____

7-4 Practice

Scientific Notation

Express each number in scientific notation.

1. 1,900,000

2. 0.000704

3. 50,040,000,000

4. 0.0000000661

Express each number in standard form.

5. 5.3×10^{7}

6. 1.09×10^{-4}

7. 9.13×10^{3}

8. 7.902×10^{-6}

Evaluate each product. Express the results in both scientific notation and standard form.

9. $(4.8 \times 10^{4})(6 \times 10^{6})$

10. $(7.5 \times 10^{-5})(3.2 \times 10^{7})$

11. $(2.06 \times 10^{4})(5.5 \times 10^{-9})$

12. $(8.1 \times 10^{-6})(1.96 \times 10^{11})$

13. $(7.2 \times 10^{-5})^{2}$

14. $(5.29 \times 10^{6})^{2}$

Evaluate each quotient. Express the results in both scientific notation and standard form.

15. $\dfrac{(4.2 \times 10^{5})}{(3 \times 10^{-3})}$

16. $\dfrac{(1.76 \times 10^{-11})}{(2.2 \times 10^{-5})}$

17. $\dfrac{(7.05 \times 10^{13})}{(9.4 \times 10^{7})}$

18. $\dfrac{(2.04 \times 10^{-4})}{(3.4 \times 10^{5})}$

19. **GRAVITATION** Issac Newton's theory of universal gravitation states that the equation $F = G\dfrac{m_1 m_2}{r^2}$ can be used to calculate the amount of gravitational force in newtons between two point masses m_1 and m_2 separated by a distance r. G is a constant equal to 6.67×10^{-11} Nm^2kg^{-2}. The mass of Earth m_1 is equal to 5.97×10^{24} kg, the mass of the Moon m_2 is equal to 7.36×10^{22} kg, and the distance r between the two is 384,000,000 m.

   a. Express the distance r in scientific notation.

   b. Compute the amount of gravitational force between Earth and the Moon. Express your answer in scientific notation.