Name: _____ Period: _____

Math 8: Chapter 10 Test Review

Evaluate the expression.

1. $-4^2 =$	**2.** $(-4)^2 =$	**3.** $2^4 =$
4. $\dfrac{1}{6^2} + \dfrac{5}{36} =$	**5.** $8^3 - 8^2 =$	**6.** $-\left(\dfrac{1}{4}\right)^3 =$
7. $\left(\dfrac{2}{5}\right)^2 =$	**8.** $1 - \left(\dfrac{1}{5}\right)^3 =$	**9.** $\dfrac{1}{5}\left(3^2 + 6\right) =$

10. $8^2 - 3^3 =$

Simplify the expression.

11. $\left(\dfrac{3}{4}w\right)^2 =$	**12.** $\dfrac{3^5}{3^2} =$	**13.** $\dfrac{b^6}{(2b)^3} =$
14. $\dfrac{5^7 a}{5^4 a^2} =$	**15.** $\left(3^2 x^4\right)\left(2x\right)^3 =$	**16.** $\dfrac{q^2 \cdot q^5}{q^7} =$
17. $(3x)^4 =$	**18.** $\dfrac{3^{12}}{3^9} =$	**19.** $\dfrac{1^2}{3^4} \cdot \dfrac{3^6}{1} =$

20. $z^2\left(z \cdot z^3\right) =$

Simplify. Write the expression using only positive exponents.

21. $8w^{-5} =$

22. $\dfrac{2z^{-3}}{4z^{-5}} =$

23. $3y^{-2} \cdot 6y^{-3} =$

24. $\dfrac{(ab)^{-3}}{a^2} =$

Write the number in standard form.

25. $6.999 \times 10^5 =$

26. $7.05 \times 10^{-6} =$

27. $2 \times 10^{-1} =$

28. $4.773 \times 10^8 =$

Evaluate the expression. Write your answer in scientific notation.

29. $\left(8.3 \times 10^6\right) - \left(4.6 \times 10^6\right)$

30. $\left(6.8 \times 10^4\right) - \left(8.5 \times 10^3\right)$

31. $\left(1.1 \times 10^8\right) \times \left(4 \times 10^7\right)$

32. $\left(8.3 \times 10^3\right) \times \left(3 \times 10^{-6}\right)$

33. $\left(8 \times 10^{-4}\right) \div \left(4 \times 10^3\right)$

34. $\left(9 \times 10^{-4}\right) \div \left(3 \times 10^{-2}\right)$

35. At Mercury's closest approach to the Sun it is 46,000,000 kilometers away. At its farthest distance it is 69,800,000 kilometers away.

    a. Write the distance range using scientific notation.

    46,000,000 = _____ *(in scientific notation)*

    69,800,000 = _____ *(in scientific notation)*

    b. Is Mercury ever 5.8×10^7 kilometers from the Sun?

36. A gymnasium is 100 yards wide, 150 yards long, and 30 yards tall.

    a. Write the dimensions in scientific notation.

    100 yards = _____

    150 yards = _____

    30 yards = _____

    b. Find the volume of the building. Write your answer in scientific notation.