

Mastery Maintenance

Date _____ Period _____

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Simplify. Your answer should contain only positive exponents.

1) $3y^4 \cdot yx^3$

2) $3u^3 \cdot 4uv^2$

3) $(4xy^4)^2$

4) $(2u^2v^3)^3$

5) $\frac{4x^4y^2}{4y^2}$

6) $\frac{4ba^4}{4a^2b^4}$

7) $4r^{-1}$

8) m^{-4}

Simplify each expression.

9) $-10x - 4x$

10) $-9x + 9x$

11) $4v + 2 + 8v$

12) $1 - 4n + 6n - 10$

13) $-3(6 - 7a)$

14) $-8(1 - 7x)$

15) $3 + 6(-10 - 7p)$

16) $-7 - 10(7k - 7)$

Write each number in scientific notation.

17) 0.631

18) 1700000

Write each number in standard notation.

19) 1.5×10^2

20) 4×10^4

Name the set or sets to which each number belongs.

21) $\frac{5}{6}$

22) $\sqrt{47}$

23) 0

24) -4

Find the slope of the line through each pair of points.

25) $(12, 20), (7, -19)$

26) $(8, -1), (-2, -5)$

Solve each proportion.

27) $\frac{9}{5} = \frac{k}{9}$

28) $\frac{a}{9} = \frac{11}{3}$

Solve each equation.

29) $-116 = 4(1 - 5x)$

30) $4(7x + 8) = 116$

Solve each equation. Remember to check for extraneous solutions.

31) $-7\sqrt{n} = -42$

32) $0 = \sqrt{m} - 2$

Evaluate each using the values given.

33) $x - y \div 4 + y - y$; use $x = 6$, and $y = 4$

34) $5 + p^3(q - q)$; use $p = 3$, and $q = 6$

35) $q(q(3 + m) - m)$; use $m = 6$, and $q = 2$

36) $p - (6 - p - (m - n))$; use $m = 4$, $n = 4$, and $p = 5$

Find each percent change. State if it is an increase or a decrease.

37) From 84 to 60

38) From 34 to 38

39) From 37 to 35

40) From 72 to 58