Unit 8 Study Guide

Circle the expressions that are equivalent to the one given. Choose ALL that apply.

1) x^5

a. $5x$ b. $\frac{5}{x}$ c. $x \cdot x \cdot x \cdot x \cdot x$ d. $5x \cdot 5x \cdot 5x \cdot 5x \cdot 5x$ e. $x + x + x + x + x$

2) x^3

a. $3x$ b. $\frac{3}{x}$ c. $x \cdot x \cdot x$ d. $3x \cdot 3x \cdot 3x$ e. $x + x + x$

3) xy^2

a. $x \cdot x \cdot x \cdot y \cdot y$ b. $x \cdot y \cdot y$ c. $x \cdot y^2$ d. $x^2 + y^2$

4) $(xy)^2$

a. $x \cdot x \cdot y \cdot y$ b. $x \cdot y \cdot y$ c. $x^2 \cdot y^2$ d. $x^2 + y^2$

5) $(2x)^0$

a. 1 b. $2x$ c. $(x^2)^0$ d. $2x^2 \cdot 2x^0$

6) $x^3 \cdot x^2$

a. $6x$ b. $5x$ c. $(x^3)^2$ d. $\frac{x^3}{x^{-2}}$ e. x^6 f. x^5

7) $x^{10} \div x^5$

a. x^5 b. x^2 c. 2 d. $\frac{1}{x^{-5}}$ e. $\frac{x^{10}}{x^5}$

8) $(2x^3y^2)^4$

a. $8x^7y^6$ b. $2^4x^{12}y^8$ c. $\frac{32x^{15}y^2}{2x^3y^{-6}}$ d. $(2xy^3)(8x^{11}y^5)$

9) $5x^3y \cdot \frac{1}{2}x^{-4}y^4$

a. $\frac{2\frac{1}{2}y^5}{x}$ b. $5.5x^{-7}y^4$ c. $\frac{5y^5}{2x}$ d. $2.5x^{-7}y^5$

Classify each number. Circle ALL that apply.

10) $\sqrt{100}$

a. Natural b. Whole c. Integer d. Rational e. Irrational f. Real

11) $\sqrt{20}$

a. Natural b. Whole c. Integer d. Rational e. Irrational f. Real

12) -12

a. Natural b. Whole c. Integer d. Rational e. Irrational f. Real

13) $\frac{0}{2}$

a. Natural b. Whole c. Integer d. Rational e. Irrational f. Real

14) $\frac{12}{20}$

a. Natural b. Whole c. Integer d. Rational e. Irrational f. Real

15) $\frac{-14}{7}$

a. Natural b. Whole c. Integer d. Rational e. Irrational f. Real

16) -5.5

a. Natural b. Whole c. Integer d. Rational e. Irrational f. Real

Write in Scientific Notation.

17) $630{,}000{,}000{,}000{,}000$

18) 0.0000000000987

19) $98{,}000{,}000{,}000$

20) 0.000573

Simplify. Leave your answer in scientific notation.

21) $\frac{2\times10^{25}}{4\times10^{5}}$

22) $(4\times10^{35})(3\times10^{24})$

23) $4.3\times10^{8} + 2.2\times10^{10}$

24) $\frac{4\times10^{15}}{2\times10^{3}}$

25) $(7\times10^{15})(3\times10^{10})$

26) $2\times10^{6} + 3\times10^{7}$

27) Approximate $\sqrt{50}$ to the tenths place.

Review:

28) Find the slope of the line with the equation $4x + 6y = 18$

29) Find the slope of the line with the equation $2x - 3y = 18$

30) Find the equation of a line that goes through $(1,6)$ and $(2,-4)$

31) Find the equation of a line that goes through $(-2,8)$ and $(1,11)$

32) Solve for x: $2 - 3(2x + y) = 2y + x$

33) Solve for y: $3x - (y + 3) = 2y - 5x + 1$

34) Solve for the variable: $5 - 2(3x + 3) = 3x - 6x - 1$