

Name: SAMPLE Date: _____

Pre-Algebra CHAPTER 4 Practice 2

List the positive factors of each number. (1pt each)

1) 25

factors: 1, 5, 25

Answers

1) see left

2) 36

factors: 1, 2, 3, 4, 6, 9, 12, 18, 36

2) see left

3) 40

factors: 1, 2, 4, 5, 8, 10, 20, 40

3) see left

Simplify each expression. (1pt each)

4) 9^2

$$9 \times 9$$

4) 81

5) $b \cdot b \cdot b$

5) b^3

6) $c^3 \cdot c^2 \cdot c^1$

6) c^6

Use the order of operations to simplify. (2pts each)

7) $3(25 - 23)^3$

$$\begin{array}{l} \downarrow \\ 3(2)^3 = 3 \times 8 = 24 \end{array}$$

7) 24

Use the order of operations to simplify. (2pts each)

8) $90 + (3 + 5)^2 \div 2$

$$8^2 = 64$$

$$64 \div 2$$

$$90 + 32$$

8) 122

9) -3^4

$$-(3 \times 3 \times 3 \times 3)$$

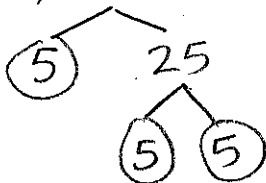
$\underbrace{\quad\quad} \quad \underbrace{\quad\quad}$
 9×9

$$- 81$$

9) -81

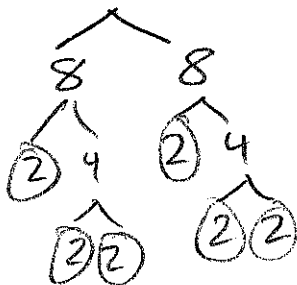
Write the prime factorization. Use exponents where possible. (1pt each)

10) 125



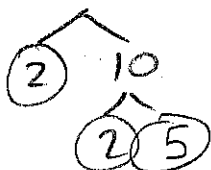
10) 5^3

11) 64



11) 2^6

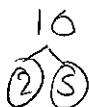
12) 20



12) $2^2 \cdot 5$

Find the Greatest Common Factor. (2pts each)

13) 10, 45



$$10: 2 \cdot 5$$

$$45: 3 \cdot 3 \cdot 5$$

13) 5

14) $3y^2, 24y^3$

$$3y \cdot y$$

$$2 \cdot 2 \cdot 2 \cdot 3 \cdot y \cdot y \cdot y$$

14) $3y^2$

15) $6m^3n, 8mn^2$

$$\begin{array}{c} 2 \cdot 3 \cdot m \cdot m \cdot m \cdot n \\ 2 \cdot 2 \cdot 2 \cdot m \cdot n \cdot n \end{array}$$

15) $2mn$

Write in simplest form. (2pts each)

16) $\frac{10m^3n^2}{50m^3n}$

$$\frac{10}{50} \cdot \frac{m^3}{m^3} \cdot \frac{n^2}{n}$$

$$\frac{1}{5} \cdot \frac{1}{1} \cdot \frac{n \cdot n}{n}$$

16) $\frac{n}{5}$

17) $\frac{3abc}{6ab^2}$

$$\frac{3 \cancel{a} \cancel{b} c}{6 \cancel{a} \cancel{b} b}$$

17) $\frac{3c}{6b}$

18) $\frac{12ef}{4e^6f^2}$

$$\frac{12}{4} \frac{e^1}{e^6} \frac{f}{f^2}$$

18) $\frac{3}{e^5f}$

Write a sentence to define Rational Numbers. (1pt)

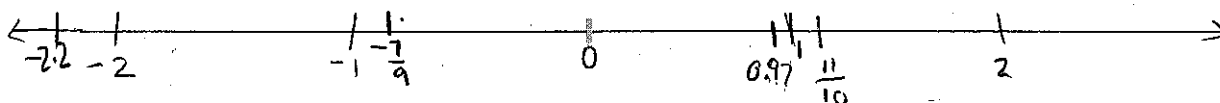
19) A rational number is a number that can be written as a ratio in the form $\frac{a}{b}$ where $b \neq 0$.

19) see left

Graph the following rational numbers on the number line below. (2pts)

20) -2.2 0.97 $-\frac{7}{9}$ $\frac{11}{10}$

20) see left



Simplify each expression. (2pts)

21) $-4k^7 \cdot 9k^2$
 $-36k^{7+2}$

21) $\underline{-36k^9}$

22) $(2^4)^3$ (write as an exponent)

$2^{4 \times 3}$

22) $\underline{2^{12}}$

23) $12q^4 \cdot q^1$

$12q^{4+1}$

23) $\underline{12q^5}$

24) $\frac{r^4}{r^9}$ $r^{(4-9)} = r^{-5} = \frac{1}{r^5}$

24) $\underline{\frac{1}{r^5}}$

25) $\frac{3t^9}{18t^6}$ $\frac{1}{6} t^{9-6} = \frac{t^3}{6}$

25) $\underline{\frac{t^3}{6}}$

Write each expression without using a fraction bar. (2pts)

26) $\frac{u^8 v^4}{u^2 v^8}$ $u^{8-2} v^{4-8} = u^6 v^{-4}$

26) $\underline{u^6 v^{-4}}$

Write each expression without using a fraction bar. (2pts)

27) $\frac{w^2x^2}{w^3v^2x}$

$w^{2-3} v^{-2} x^{2-1} = w^{-1} v^{-2} x$

27) $w^{-1} v^{-2} x$

Write the number in scientific notation. (2pts)

28) 0.597

5.97×10^{-1}

28) 5.97×10^{-1}

Write the number in standard form. (2pts)

29) 7.31×10^6

7,310,000

29) see left

Multiply then express the number in scientific notation. (2pts)

30) $(9 \times 10^{-4})(9 \times 10^{15})$

$9 \times 9 \times 10^{-4} \times 10^{15}$

81×10^{11}

↓

$8.1 \times 10^1 \times 10^{11}$

8.1×10^{12}

30) see left