

key.

Section 1.1: The Real Numbers

1.) Circle the true statements

$5 \neq 5$

$6 \leq 6$

$7 < 7$

$12 \geq 12$

$1 > 0$

3.) Given the sets S and T , determine whether the following statements are true or false:

$S = \{2, 4, 6, 7, 10, 12, 14\}$

$T = \{4, 8, 12\}$

$T \subset S$ F

$S \subset T$ F

$4 \in S$ T

$4 \notin T$ F

2.) Find

$|-6| = 6$

$|1.9| = 1.9$

$-|-4^3| = -64$

$|-5^2| - |3^3| = 25 - 27 = -2$

$|2^3| - |3^2| = 8 - 9 = -1$

4.) On the number line, $A = 36$ and $B = -16$. Write an expression that represents the distance between A and B .

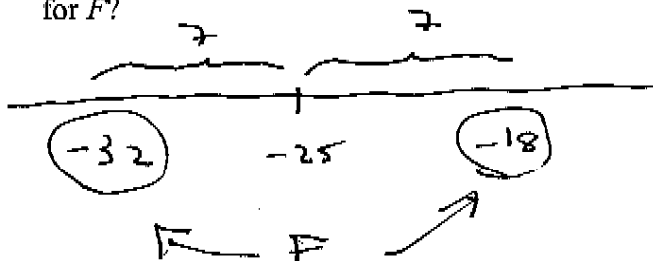
$|36 - (-16)|$ or $|-16 - 36|$

5.) Evaluate

$8^2 = 64$

$7^3 = 343$

$-2^4 = -16$

6.) E and F are two points on the number line. If $E = -25$ and the distance between the points is 7, what are the two possibilities for F ?7.) Rewrite $4 \cdot 4 \cdot 4 \cdot 4 \cdot 4$ using exponents.

4^5

Section 2.1: Algebraic Expressions

8.) Simplify: $8 - 4(a + 3)$

$$8 - 4a - 12$$

$$-4 - 4a$$

9.) Simplify: $6a - 13 - 5a + 15$

$$a + 2$$

10.) Simplify: $5a(b - 7) - 2(3a + 4)$

$$5ab - 35a - 6a - 8$$

$$5ab - 41a - 8$$

11.) Simplify: $15(2 - b) + 32 - 9(3b - b^2)$

$$30 - 15b + 32 - 27b + 9b^2$$

$$62 - 42b + 9b^2$$

12.) Simplify:

$$7n(m - 6) + 10m + 3n(n - 8m)$$

$$7nm - 42n + 10m + 3n^2 - 24nm$$

$$-17nm - 42n + 10m + 3n^2$$

13.) Evaluate $8m + n - 17$ when $m = 5$ and $n = -1$

$$8(5) + (-1) - 17$$

$$40 - 1 - 17$$

$$22$$

14.) Evaluate $3a^2 - 7a - 6$ when $a = -3$

$$3(-3)^2 - 7(-3) - 6$$

$$3 \cdot 9 + 21 - 6$$

$$27 + 21 - 6$$

$$42$$

15.) Evaluate $3x^3 - 6xy - 5xz + 4z - 1$ when $x = 2$, $y = -4$, and $z = 7$

$$3(2)^3 - 6(2)(-4) - 5(2)(7) + 4(7) - 1$$

$$3 \cdot 8 + 48 - 70 + 28 - 1$$

$$24 + 48 - 70 + 28 - 1$$

$$29$$

Section: 2.2: Linear Equations

16.) $-7 - 3y = 8$

$\Rightarrow 15 = 3y$

$\Rightarrow y = 5$

17.) $3(t-6) = -8(1-t)$

$\Rightarrow 3t - 18 = -8 + 8t$

$\Rightarrow -10 = 5t$

$\Rightarrow t = -2$

18.) $\frac{1}{4}(p-5) = 3$ LCD = 4

$\Rightarrow p - 5 = 12$

$\Rightarrow p = 17$

19.) $\frac{3}{4}(z+3) = 9$ LCD = 4

$\Rightarrow 3(z+3) = 36$

$\Rightarrow 3z + 9 = 36$

$\Rightarrow 3z = 27$

$\Rightarrow z = 9$

20.) $\frac{1}{8}n + 6 = -\frac{5}{4}(n-16)$ LCD = 8

$\Rightarrow 8 \cdot \left(\frac{1}{8}n + 6 \right) = -10(n-16)$

$\Rightarrow n + 48 = -10n + 160$

$\Rightarrow 11n = 112$

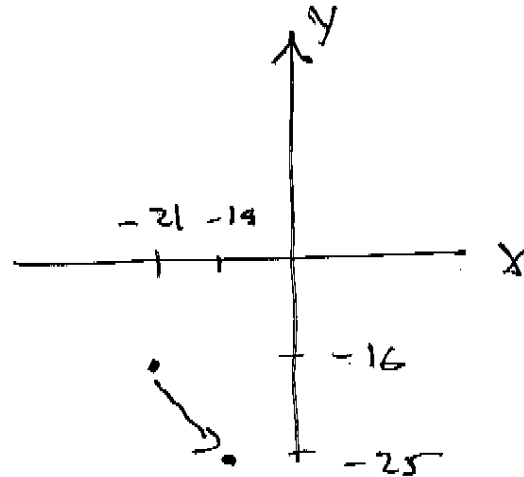
$\Rightarrow n = \frac{112}{11}$

Section: 3.1: Introduction to Graphing

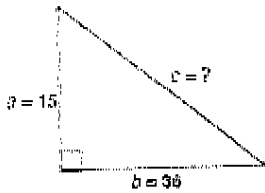
Find the rise and run in moving from the point $(-21, -16)$ to the point $(-19, -25)$.

$$\text{Rise} = -9$$

$$\text{Run} = 2$$



Use the Pythagorean Theorem to solve:



$$15^2 + 36^2 = c^2$$

$$\Rightarrow 1521 = c^2$$

$$\Rightarrow c = 39$$

Use the distance formula to find the distance between the points $(-11, -5)$ and $(4, -7)$.

$$D = \sqrt{(-11 - 4)^2 + (-5 - (-7))^2}$$

$$= \sqrt{15^2 + 2^2}$$

$$= \sqrt{225 + 4}$$

$$= \sqrt{229}$$