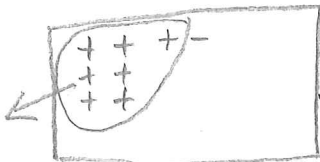


Name: Answers Date: _____ Period: _____

Lesson 3.2.1 Homework Problems 3-34 to 3-38

3-34. The number 6 is represented with + and - tiles at right. For each problem below, start with this **diagram** and **then show how to remove** the appropriate number of tiles to represent the problem given. State the final answer for each part.

a. $6 - 7 = (-1)$



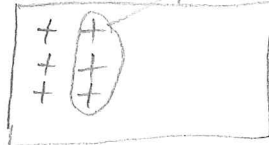
Answer: (-1)

b. $6 - (-2) = 8$



Answer: 8

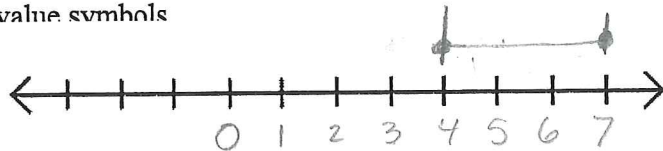
c. $6 - 3 = 3$



Answer: 3

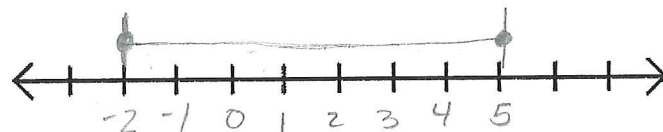
3-35. Use a number line to show the distance between the two given integers. Plot each integer as a point on the number line, and then find the distance between the two points. Write each situation as a subtraction problem using absolute value symbols

a. 7 and 4



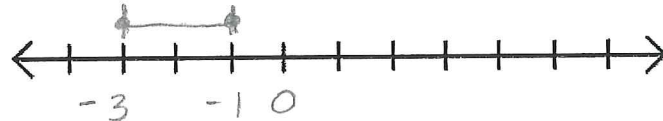
Subtraction Problem: $|7 - 4| = 3$

b. 5 and -2



Subtraction Problem: $|5 - (-2)| = 7$
OR $|(-2) - 5| = |-7| = 7$

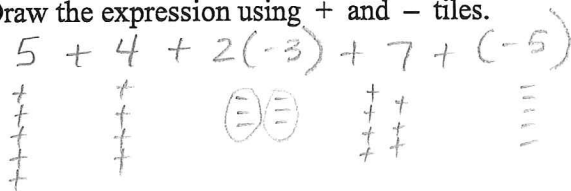
c. -1 and -3



Subtraction Problem: $|(-1) - (-3)| = |2| = 2$
 $|(-3) - (-1)| = |-2| = 2$

3-36. Consider the expression $5 + 4 + 2(-3) + 7 + (-5)$.

a. Draw the expression using + and - tiles.



$$5 + 4 + 2(-3) + 7 + (-5)$$

$$\overset{\vee}{9} + \overset{\vee}{(-6)} + \overset{\vee}{7}$$

$$\overset{\vee}{3} + \overset{\vee}{2}$$

$$\textcircled{5}$$

b. Simplify the expression to find the number it represents.

$\textcircled{5}$

c. Remove the last number from the expression (-5) and find the sum again. Show how this would change your drawing. How much larger or smaller is the answer? Explain how your answer makes sense when compared to the answer in part (b).

$$5 + 4 + 2(-3) + 7$$

$$\overset{\vee}{9} + \overset{\vee}{(-6)} + 7$$

$$3 + 7$$

$$\textcircled{10}$$

If I take off (-5) then I don't have to subtract 5 from 10.

3-37. Read the Math Notes below. Then use the information to answer the following questions.

Evaluating Algebraic Expressions

An algebraic expression consists of one or more variables, or a combination of numbers and variables connected by mathematical operations. Examples of algebraic expressions include $4x$, $3(x-5)$, and $4x-3y+7$.

To evaluate an algebraic expression for particular values of the variables, replace the variables in the expression with their known numerical values and simplify. Replacing variables with their known values is called substitution. An example is provided below.

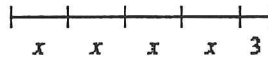
Evaluate $4x-3y+7$ for $x=2$ and $y=1$.

Replace x and y with their known values of 2 and 1, respectively, and simplify.

$$\begin{aligned} &4(2)-3(1)+7 \\ &=8-3+7 \\ &=12 \end{aligned}$$

Jorge was thinking about using variables to represent lengths of a tightrope walker's many tricks.

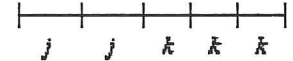
- a. Jorge wrote the expression $x+x+x+x+3$ to represent the sequence shown in the diagram below. Does his expression make sense? Explain.



Yes. It shows his movement across tight rope.

$$4x+3$$

- b. Write an expression to represent the sequence shown in the diagram at right.



$$2j+3k$$

- c. In part (a), if $x=5$ feet, how long is the tightrope?

$$\begin{aligned} &4x+3 \\ &4(5)+3 \\ &20+3 \rightarrow \text{23 ft} \end{aligned}$$

- d. In part (b), if $j=3$ feet and $k=2$ feet, how long is the tightrope?

$$\begin{aligned} &2j+3k \\ &2(3)+3(2) \\ &6+6 \\ &\text{12 feet} \end{aligned}$$

3-38. Simplify the following fraction expressions. Show all of your work.

a. $\frac{3}{4} + \frac{2}{3}$
 $\frac{9}{12} + \frac{8}{12}$

$$\frac{17}{12} = 1\frac{5}{12}$$

b. $\frac{7}{8} - \frac{1}{4}$
 $\frac{7}{8} - \frac{2}{8}$

$$\frac{5}{8}$$

c. $\frac{3}{5} \cdot \frac{1}{3}$

$$\frac{3}{5} \cdot \frac{1}{3} = \frac{3}{15} = \frac{1}{5}$$

d. $\frac{4}{7} \cdot \frac{2}{3}$

$$\frac{4}{7} \cdot \frac{2}{3} = \frac{8}{21}$$