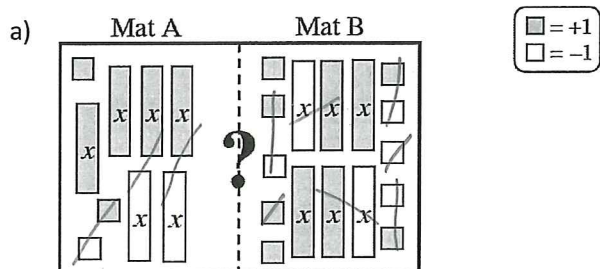


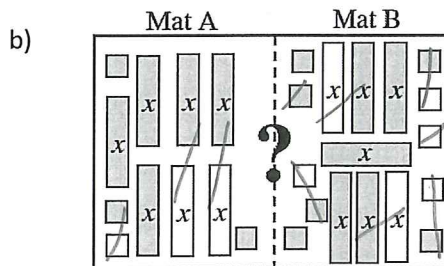
Name: Mackenzie Boyd Date: \_\_\_\_\_ Period: 2

Lesson 6.1.2 Problems 6-17 to 6-22

6-17. Write an algebraic expression for each mat below. Then use the legal moves that you have developed to simplify each mat. If possible, decide which expression is greater.



$2x+1 < 2x+2$



$3x+2 > 3x+1$

6-18. When solving a problem about the perimeter of a rectangle using the 5-D Process, Herman built the expression below.

Perimeter =  $x + x + 4x + 4x$  feet

a) Draw a rectangle and label its sides based on Herman's expression.



b) What is the relationship between the base and height of Herman's rectangle? How can you tell?

The base is 4 times the height.  $x$  is representing one number, such as 2,  $2 \times 4 = 8$

c) If the perimeter of the rectangle is 60 feet, how long are the base and height of Herman's rectangle? Show how you know.

$$x + x + 4x + 4x = 60$$

$$\frac{10x}{10} = \frac{60}{10} \quad x = 10$$



$$B = 4x \quad (4 \cdot 10)$$

$$h = x \quad 10$$

6-19. Simplify the expressions below.

$$\frac{25 \times 3}{75}$$

a)  $5^2 \cdot (-3) - 4 \cdot 6 + 7$

$$25 \cdot (-3) - 4 \cdot 6 + 7$$

$$-75 - 24 + 7$$

$$-99 + 7$$

$$\boxed{-92}$$

b)  $-3 \cdot (6 + 4 \cdot 2)$

$$-3 \cdot (6 + 8)$$

$$-3 \cdot (14)$$

$$\boxed{-42}$$

c)  $9 + 8 \div (-4) - 12$

$$\begin{aligned} 9 + 2 - 12 \\ 7 - 12 \\ \textcircled{-5} \end{aligned}$$

d)  $2^3 - 3 \cdot 4 + 6(-1 + 2)$

$$\begin{aligned} 8 - 3 \cdot 4 + 6 + 12 \\ 8 - 12 - 6 + 12 \\ -4 - 6 + 12 \\ -10 + 12 \\ \textcircled{2} \end{aligned}$$

e)  $4 + (3 + 4)^2$

$$\begin{aligned} 4 + (7)^2 \\ 4 + 49 \\ \textcircled{53} \end{aligned}$$

f)  $\frac{8-13}{10}$

$$\begin{aligned} \frac{-5}{10} \\ \textcircled{-\frac{1}{2}} \end{aligned}$$

6-20. Write the following expressions in two ways, one with parentheses and one without. For example,  $4(x - 3)$  can be written  $4x - 12$ .

- a) A number reduced by 3, then multiplied by 2.

$$\underline{2(x-3)} \qquad \underline{2x-6}$$

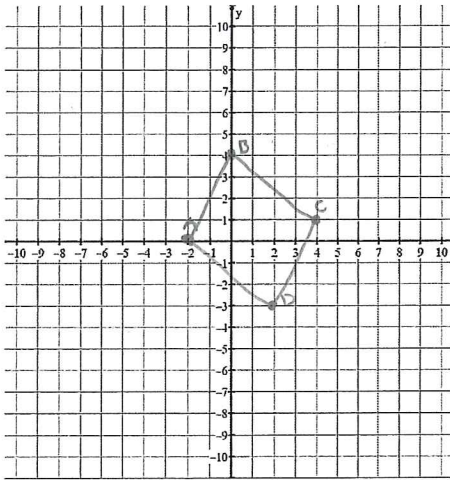
- b) A number increased by 7, then multiplied by 5.

$$\underline{5(x+7)} \qquad \underline{5x+35}$$

- c) Ten times a number, then add twenty.

$$\underline{10x+20} \qquad \underline{10(x+2)}$$

6-21. Graph these points on a coordinate grid:  $A(-2, 0)$ ,  $B(0, 4)$ ,  $C(4, 1)$ ,  $D(2, -3)$ . Connect the points in order, with point  $D$  connected to point  $A$ . What shape have you created?



Parallelogram

6-22. Alan was paying a dinner check, but he was not sure how much he should tip for his bill of \$27.38. If a 15% tip is standard, about how much should Alan leave for the server?

$$\begin{array}{r}
 27.38 \\
 \times .15 \\
 \hline
 13690 \\
 + 27380 \\
 \hline
 4.1070
 \end{array}$$

He will leave about \$4.11 tip

