

Factoring Homework 2(a)

Name KEY

1) Perimeter of a square is $16x - 20$. What is the length of one side?

$$\frac{16x - 20}{4} = 4x - 5$$

2) The perimeter of an equilateral triangle is $9x + 12y - 36$. What is the length of each side?

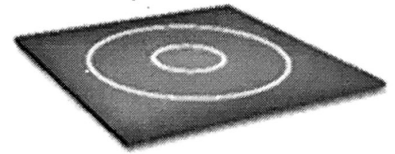
$$\frac{9x + 12y - 36}{3} = 3x + 4y - 12$$

3) The perimeter of a regular pentagon is $25x + 10$. What is the length of each side?

$$\frac{25x + 10}{5} = 5x + 2$$

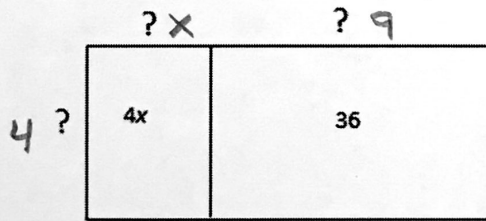
4) A square wrestling mat has a perimeter of $(12x - 32)$ feet. Write an expression that represents the side length of the mat (in feet).

$$\frac{12x - 32}{4} = 3x - 8$$



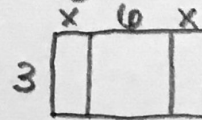
5) The rectangle shown below has a total area of $(4x + 36)$ square feet. Factor $4x + 36$ to find the missing lengths

$$4x + 36 = 4(x + 9)$$



6) **MAKING A DIAGRAM** A table is 6 feet long and 3 feet wide. You extend the table by inserting two identical table *leaves*. The longest side length of each rectangular leaf is 3 feet. The extended table is rectangular with an area of $(18 + 6x)$ square feet.

a. Make a diagram of the table and leaves.



b. Write an expression that represents the length of the extended table. What does x represent?

$2x + 6$
 x is the width of each leaf

7) Factor $-\frac{1}{2}$ out of $-\frac{1}{2}x + 6$.

$$-\frac{1}{2}(x - 12)$$

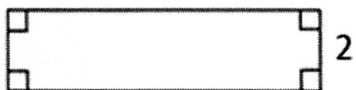
8) Factor $-\frac{1}{4}$ out of $-\frac{1}{2}x - \frac{5}{4}y$.

$$-\frac{1}{4}(2x + 5y)$$

Factoring Homework 2(b)

Name KEY

1.) The rectangle below has an area of $4x + 6$. If the width is 2, what is the length?



$$\frac{4x+6}{2} = 2x+3$$

2.) A rectangle has an area of $9x - 12$. If the width is $3x - 4$, what is the length?

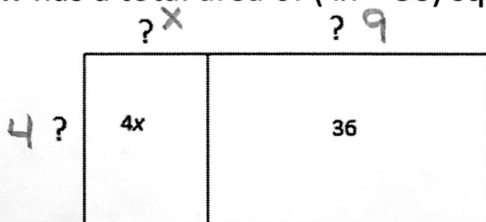


$$-(3x-4) = 9x-12$$

↖ (3)

3) The rectangle shown below has a total area of $(4x + 36)$ square feet. Factor $4x + 36$ to find the missing lengths

$$\begin{aligned} 4x + 36 \\ 4(x + 9) \end{aligned}$$



4) A square picture frame has a **perimeter** of $(20x + 32)$ inches. What is the length of one side of the picture frame?

$$\frac{20x+32}{4} = 5x+8$$

5) Perimeter of the regular pentagon below (regular means all sides are congruent) is $25x + 10$. Find the missing side length.

$$\frac{25x+10}{5}$$

$$5x+2$$

