

Name _____

Period _____

Solving Equations Using the Distributive Property

To solve an equation that has an operation involving the

distributive property:

1. Simplify both sides of the equation (if needed)
2. Use inverse operations to isolate the variable.

Solve: $5y + 2(y - 3) = 92$

$5y + 2y - 6 = 92$ Use the distributive property

$7y - 6 = 92$ Combine like terms

$7y - 6 + 6 = 92 + 6$ Add 6 to each side

$7y = 98$ Simplify

$\frac{7y}{7} = \frac{98}{7}$ Divide each side by 7

$y = 14$ Solution. Y is alone.

Practice:

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1.) $24 = \frac{1}{4}(x - 8)$

$$24 = \frac{1}{4}x - \frac{8}{4}$$

$$\begin{array}{r} 24 = \frac{1}{4}x - 2 \\ +2 \qquad +2 \end{array}$$

$$(4) 26 = \frac{1}{4}x(4)$$

$$\boxed{104 = x}$$

2.) $3(4 - s) - 5s = 52$

$$12 - 3s - 5s = 52$$

$$\begin{array}{r} 12 - 8s = 52 \\ -12 \qquad -12 \end{array}$$

$$\begin{array}{r} -8s = 40 \\ -8 \qquad -8 \end{array}$$

$$\boxed{s = -5}$$

3.) $\frac{1}{2}(x + 12) = -8$

$$\begin{array}{r} \frac{1}{2}x + 6 = -8 \\ -6 \qquad -6 \end{array}$$

$$\frac{1}{2}x = -14$$

$$2 \cdot \frac{1}{2}x = -14 \cdot 2$$

$$\boxed{x = -28}$$

4.) $1 = y + 3(y - 9)$

$$1 = y + 3y - 27$$

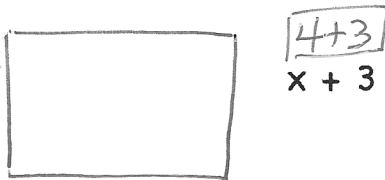
$$\begin{array}{r} 1 = 4y - 27 \\ +27 \qquad +27 \end{array}$$

$$\begin{array}{r} 28 = 4y \\ 4 \qquad 4 \end{array}$$

$$\boxed{7 = y}$$

Write an equation for the area of the rectangle. Then solve for x.

5.) area is 63 square units



6.) area is 48 square units

