

## What's Going On?

**Checking In**

**Minds on**

Solve it!

**Action!**

Isolating the Variable

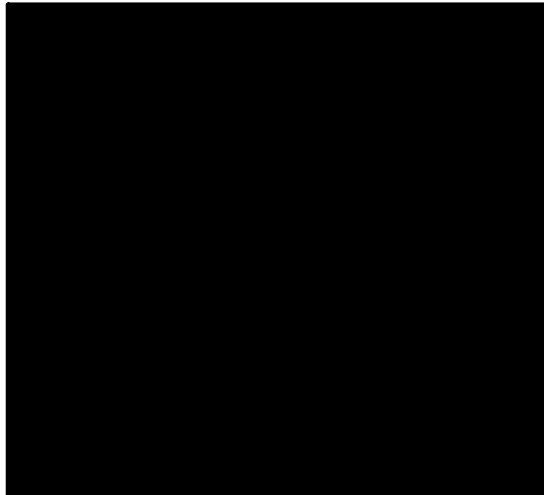
**Consolidation**

Whiteboards

**Learning Goal - I will be able to solve simple equations!**

What's behind the black box?

$$4a - 5 = 11$$



$$a = 4$$

$$4a - 5 = 11$$

$$\begin{array}{r} 4a - 5 = 11 \\ \quad +5 \quad +5 \\ \hline \cancel{4}a = \frac{16}{\cancel{4}} \end{array}$$

$$a = 4$$

**Minds on**

Solve It!

$$x + 4 = 7$$

*(Handwritten: A red diagonal line is drawn through the equation. The number 4 is circled in green. Below the 4 is a red 4, and below the 7 is a red -4.)*

$$x = 3$$

$$x = \square$$

*(Handwritten scribbles: A messy scribble of black ink, possibly representing a crossed-out equation like  $x + 3 = 3$  or  $x = 3$ .)*

**Minds on**

Solve It!

$$\begin{array}{r} x + 9 = 2 \\ -9 \quad -9 \end{array}$$

$$x = -7$$

**Minds on**

Solve It!

$$\frac{4x}{4} = \frac{16}{4}$$

$$x = 4$$

**Minds on**

Solve It!

$$\frac{\cancel{3}x}{\cancel{3}} = \frac{-9}{3}$$

$$x = -3$$

**Minds on**

Solve It!

$$\frac{-2x}{-2} = \frac{8}{-2}$$

$$x = -4$$



**Minds on**

Solve It!

$$\frac{-5x}{-5} = \frac{-10}{-5}$$

$$x = 2$$

Minds on

Solve It!

$$\cancel{4} \cdot \frac{x}{\cancel{4}} = 6 \cdot \cancel{4}$$

$$x = 24$$

**Minds on**

Solve It!

$$\cancel{-4} \left( \frac{x}{\cancel{-4}} \right) = (3) \times \cancel{-4}$$

$$x = -12$$

**Action!**

## Isolating the Variable

$$2x - 7 = 9$$

Our end goal is to have  $x = \underline{\quad}$

That means that, first, we have to get the *term* that contains  $x$  (**variable term**) by itself.

The key to solving equations is opposite operations.

And remember, whatever you do to one side of an equation **MUST** be done to the other side as well!

**Action!**

## Isolating the Variable

$$2x - 7 = 9$$

1. Isolate the variable term. (2x)

$$\boxed{2x} - 7 = 9$$
$$+7 \quad +7$$

$$2x = 16$$

2. Isolate / solve for the variable.

$$\frac{2x}{2} = \frac{16}{2}$$
$$\boxed{x = 8}$$

## Consolidation

### 7 Problems

a.  $t + 8 = 20$

b.  $y - 7 = 5$

c.  $2t + 8 = 20$

d.  $4w - 6 = 10$

e.  $5x + 4 = 14$

f.  $6y - 7 = 5$

g.  $2a + 3 = 11$

## Consolidation

## Problems Solved!

$$a. t + 8 = 20$$

~~-8~~     ~~-8~~

$$t = 12$$

$$b. y - 7 = 5$$

~~+7~~     ~~+7~~

$$y = 12$$

$$c. 2t + 8 = 20$$

~~-8~~     ~~-8~~

$$2t = 12$$

~~2~~     ~~2~~

$$t = 6$$

$$d. 4w - 6 = 10$$

~~+6~~     ~~+6~~

$$4w = 16$$

~~4~~     ~~4~~

$$w = 4$$

$$e. 5x + 4 = 14$$

~~-4~~     ~~-4~~

$$5x = 10$$

~~5~~     ~~5~~

$$x = 2$$

$$f. 6y - 7 = 5$$

~~+7~~     ~~+7~~

$$6y = 12$$

~~6~~     ~~6~~

$$y = 2$$

$$g. 2a + 3 = 11$$

~~-3~~     ~~-3~~

$$2a = 8$$

~~2~~     ~~2~~

$$a = 4$$

# LGL Question

Solve for p. Show your work and use proper form.

$$-3p - 7 = -16$$

1. Isolate the variable term.  
\* The variable term is  $-3p$

$$-3p - 7 = -16$$

*(Note: In the original image, a blue line is drawn through the minus sign and the 7, and a blue circle is drawn around the -16. A green +7 is written below the 7, and a blue +7 is written below the -16.)*

$$-3p = -9$$

*(Note: In the original image, the entire equation is highlighted in yellow.)*

2. Now solve for the variable

$$\frac{-3p}{-3} = \frac{-9}{-3}$$

$$p = +3$$



**Consolidation**

# Homework!!!