

## TWO-STEP EQUATIONS

Finley and Drake each write an equation below. Finley says that both equations have a solution of  $x = 5$ . Drake says that is not true. Determine who is correct and justify your reasoning.

**FINLEY**

$$5x = 25$$

**DRAKE**

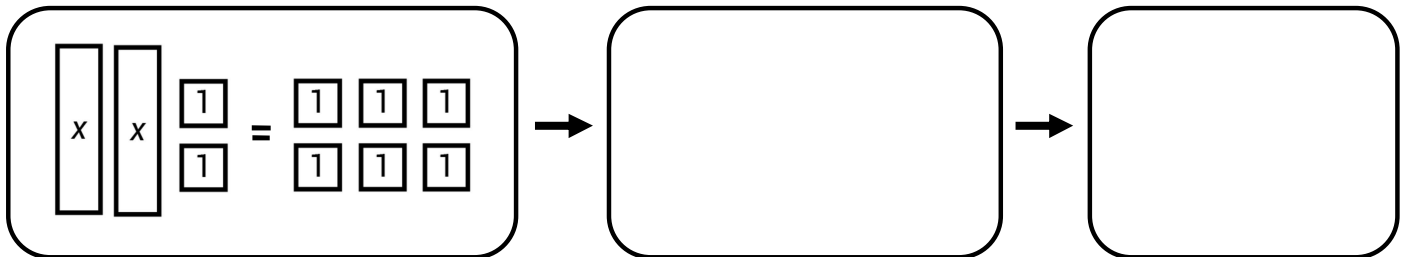
$$5x + 5 = 25$$

### STEPS TO SOLVE

1. Use inverse operations to undo addition and subtraction.
2. Use inverse operations to undo multiplication and division.
3. \_\_\_\_\_ the equation by isolating the variable

Ex.  $10x + 15 = 105$

Use algebra tiles to solve the equation modeled below.



Solve the following two-step equations. Draw algebra tiles if needed, and then check your work.

1.  $10 + 3k = 22$

**CHECK & GRAPH:**

\_\_\_\_\_

2.  $19 = 4p - 5$

**CHECK & GRAPH:**

\_\_\_\_\_

3.  $\frac{r}{2} - 8 = 16$

**CHECK & GRAPH:**

\_\_\_\_\_

4.  $7 = 2w - 3$

**CHECK & GRAPH:**

\_\_\_\_\_

Solve the equations below for practice. Roll a pair of dice and find the sum of the two numbers showing. Solve that problem.

	SOLVE	SOLUTION
2	$4x - 8 = 32$	
3	$6x + 9 = 27$	
4	$x - 2.7 = 15.4$	
5	$\frac{2}{3}x + 10 = 16$	
6	$\frac{x}{6} + 2 = 16$	
7	$19 = 5 + 7x$	
8	$\frac{x}{3} - 14 = 9$	
9	$5.37 + x = 12.89$	
10	$42 = 6x - 24$	
11	$10x + 25 = 50$	
12	$58 = 7x - 5$	

SHOW WORK HERE:

Use your understanding of solving equations to answer the questions below.

5. JP was asked to place a check mark next to any equation in which  $x = 7$  is a true statement. Check over his work and correct any mistakes.

QUESTION #1

$8x - 15 = 41$

QUESTION #2

$1.5x + 4 = 14.5$

QUESTION #3

$2x + 12 = 2$

6. Each of the students below made a statement about the equation,  $3x - 18 = 27$ . Which student(s) made a true statement?

**HANNAH**

The first step is to subtract 18 from both sides.

**AIYA**

To solve, add 18 to both sides and then divide by 3.

**ROMEO**

The solution is  $x = 15$  because  $3(15) - 18 = 27$ .

Summarize today's lesson: