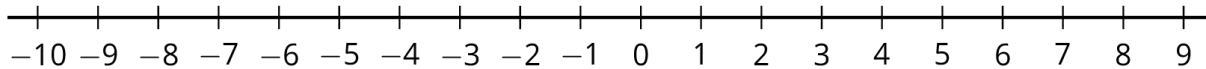# DISTRIBUTE!

LEARNING GOAL

1. I can apply the distributive law to solve linear inequalities in one variable.

REVIEW

Solve $20 - 6p \geq 2$

Check:

Graph:

MAKING THE GRADE

Jenna received a 70% on a math assignment. To get at least an 80% in math class, her grade on the next assignment must be a solution to the inequality:
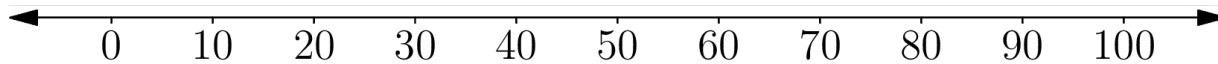
$$\frac{1}{2}\left(70 + x\right) \geq 80$$

On the next slide, you will help her find what grade she needs.

EXAMPLE 1

Solve $\frac{1}{2}(70 + x) \geq 80$

Check:

Graph:

FIND THE MISTAKE

One of the solutions contains a mistake. What is the mistake? Circle it and explain.

Solution 1

$$2(x + 10) \geq 30$$
$$2x + 20 \geq 30$$
$$\underline{-20 \quad -20}$$
$$2x \geq 10$$
$$x \geq 5$$

Solution 2

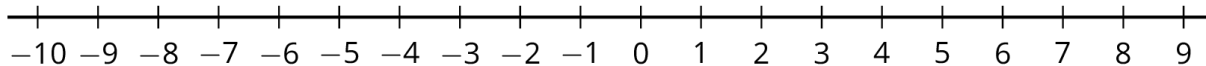$$2(x + 10) \geq 30$$
$$\underline{-10 \quad -10}$$
$$2x \geq 20$$
$$x \geq 10$$

EXERCISE 1

Solve $13 - 2a \geq 21$

Check:

Graph your solution:

EXERCISE 2

Solve $4 + 3t \leq -20$

Check:

Graph:
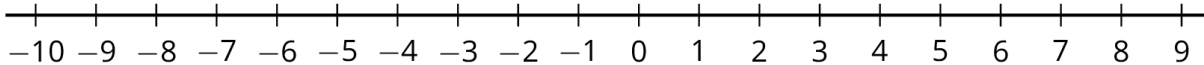
```
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−10 −9 −8 −7 −6 −5 −4 −3 −2 −1  0  1  2  3  4  5  6  7  8  9
```

FIND THE MISTAKE

One of the solutions contains a mistake. What is the mistake? Circle it and explain.

Solution 1	Solution 2
$x + 2 > 8$	$x + 2 > 8$
$\underline{-2 \quad -2}$	$\underline{-2 \quad -2}$
$x > 6$	$x < 6$

FIND THE MISTAKE

One of the solutions contains a mistake. What is the mistake? Circle it and explain.

Solution 1

$$-\frac{1}{2}x > 8$$

$$(-2) \cdot -\frac{1}{2}x > (-2) \cdot 8$$

$$x > -16$$

Solution 2

$$-\frac{1}{2}x > 8$$
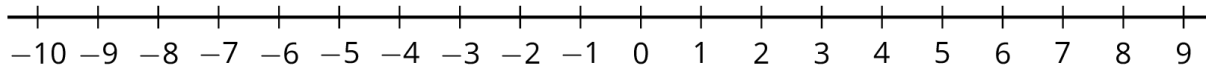
$$(-2) \cdot -\frac{1}{2}x < (-2) \cdot 8$$

$$x < -16$$

DISTRIBUTE TO SOLVE

Solve $2(5 + 3a) \geq 40$

Check:

Graph:

```
 ┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──┼──
-10 -9 -8 -7 -6 -5 -4 -3 -2 -1  0  1  2  3  4  5  6  7  8  9
```
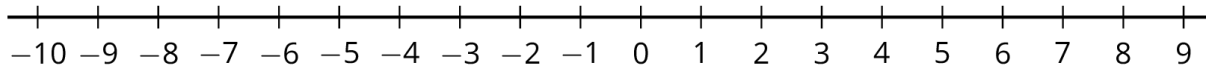
DISTRIBUTE TO SOLVE

Solve $3(4 - 2a) \geq 18$

Check:

Graph:

FIND THE MISTAKE

One of the solutions contains a mistake. What is the mistake? Circle it and explain.

Solution 1	Solution 2

$$4(x + 4) \leq 24$$

$$4x + 4 \leq 24$$

$$\underline{-4 \quad -4}$$

$$4x \leq 20$$

$$x \leq 5$$

$$4(x + 4) \leq 24$$

$$4x + 16 \leq 24$$

$$\underline{-16 \quad -16}$$

$$4x \leq 8$$

$$x \leq 2$$

FINDING THE AVERAGE

Edmond took 3 tests and scored 80%, 90%, and 84%.
What was his average test score?