LEARNING GOAL

1. I can solve inequalities by solving a related equation and then checking which values are solutions to the original inequality.

KEY VOCABULARY

1. **solution set**
2. **ray**
3. **end point**

Learning goal: I can describe the set of numbers that make an inequality true.

$c + 19 \leq 100$

A **solution** is a number that makes an inequality true.

NOT A SOLUTION

$c = 89$

SOLUTION

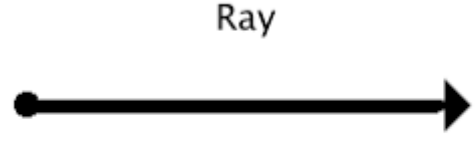
$c = ?$

Learning goal: I can graph the solution to an inequality in one variable.

$c + 19 \leq 100$

$c =$ cost of Thomas' cleats

In mathematics, a **ray** is a connected part of a line that has only one end point.



SOLUTIONS TO THOMAS' INEQUALITY

$$c + 19 \leq 100$$

$c =$ cost of Thomas' cleats

Directions: Fill in the table to find which values are solutions to Thomas' inequality. Then graph the inequality on the number line, and write a simpler inequality describing the solutions.

c	40	60	71	76	86	90
$c + 19$						
Solution or not a solution?						

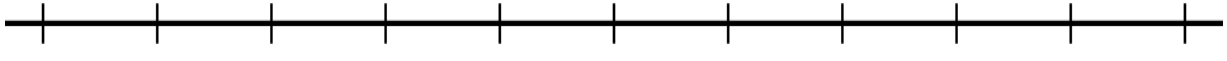
Answer blocks:

Solution

Not a solution

Find the endpoint: For which value of c is $c + 19 = 100$?:

Graph of the **solution set**:



Simple inequality desribing the **solution set**:

SOLUTIONS TO JOE'S INEQUALITY

$$21 + 3g \leq 30$$

$g =$ how many GB of data Joe uses

Directions: Fill in the table to find which values are solutions to Joe's inequality. Then graph the inequality on the number line, and write a simpler inequality describing the solutions.

g	-1	0	1	2	3	4	10
$21 + 3g$							
Solution or not a solution?							

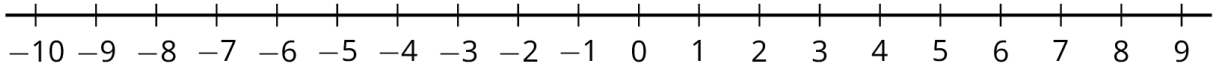
Answer blocks:

Solution

Not a solution

Find the endpoint: For which value of g is $21 + 3g = 30$?:

Graph of the **solution set**:



Simple inequality desribing the **solution set**:

EXERCISE 1

$x + 5 > 10$

Directions: Fill in the table to find which values are solutions to the inequality. Then graph the inequality on the number line, and write a simpler inequality describing the solutions.

x	2	3	4	5	6	7	8
$x + 5$							
Solution or not a solution?							

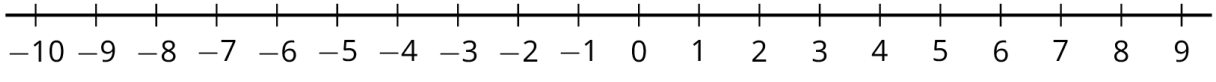
Answer blocks:

Solution

Not a solution

Find the endpoint: For which value of x is $x + 5 = 10$ true?:

Graph of the **solution set**:



Simple inequality desribing the **solution set**:

EXERCISE 2

$$3 - x \geq 5$$

Directions: Fill in the table to find which values are solutions to the inequality. Then graph the inequality on the number line, and write a simpler inequality describing the solutions.

x	-4	-3	-2	-1	0	1	2
$3 - x$							
Solution or not a solution?							

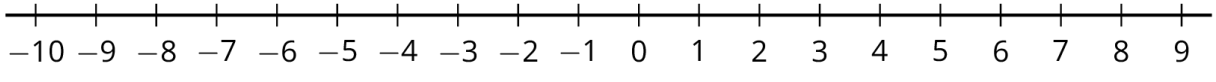
Answer blocks:

Solution

Not a solution

Find the endpoint: For which value of x is $-x + 3 = 5$ true?:

Graph of the **solution set**:



Simple inequality desribing the **solution set**:

EXERCISE 3

$50 - 2x < 10$

Directions: Fill in the table to find which values are solutions to the inequality. Then graph the inequality on the number line, and write a simpler inequality describing the solutions.

x	-30	-20	-10	0	10	20	30
$50 - 2x$							
Solution or not a solution?							

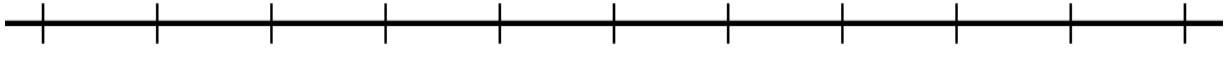
Answer blocks:

Solution

Not a solution

Find the endpoint: For which value of x is $50 - 2x = 10$ true?:

Graph of the **solution set**:



Simple inequality desribing the **solution set**:

EXERCISE 4

$2x + 4 < 8$

Directions: Fill in the table to find which values are solutions to the inequality. Then graph the inequality on the number line, and write a simpler inequality describing the solutions.

x	-2	-1	0	1	2	3	4
$2x + 4$							
Solution or not a solution?							

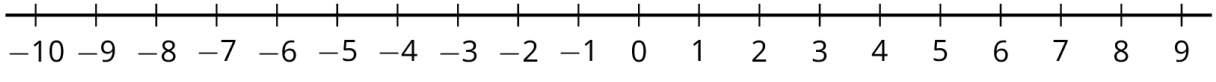
Answer blocks:

Solution

Not a solution

Find the endpoint: For which value of x is $2x + 4 = 8$ true?:

Graph of the **solution set**:



Simple inequality desribing the **solution set**:

EXERCISE 5

$$5 - 2x \leq 1$$

Directions: Fill in the table to find which values are solutions to the inequality. Then graph the inequality on the number line, and write a simpler inequality describing the solutions.

x	-2	-1	0	1	2	3	4
$5 - 2x$							
Solution or not a solution?							

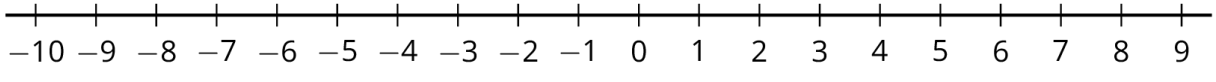
Answer blocks:

Solution

Not a solution

Find the endpoint: For which value of x is $5 - 2x = 1$ true?:

Graph of the **solution set**:



Simple inequality desribing the **solution set**:

EXERCISE 6

$$4 - 2x < 0$$

Directions: Fill in the table to find which values are solutions to the inequality. Then graph the inequality on the number line, and write a simpler inequality describing the solutions.

x	-2	-1	0	1	2	3	4
$4 - 2x$							
Solution or not a solution?							

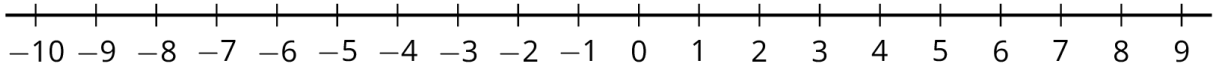
Answer blocks:

Solution

Not a solution

Find the endpoint: For which value of x is $4 - 2x = 0$ true?:

Graph of the **solution set**:



Simple inequality desribing the **solution set**:

EXERCISE 7

$$2x - 8 > 4$$

Directions: Fill in the table to find which values are solutions to the inequality. Then graph the inequality on the number line, and write a simpler inequality describing the solutions.

x	-2	-1	0	1	2	3	4
$2x - 8$							
Solution or not a solution?							

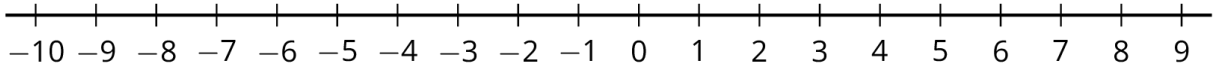
Answer blocks:

Solution

Not a solution

Find the endpoint: For which value of x is $2x - 8 = 4$ true?:

Graph of the **solution set**:



Simple inequality desribing the **solution set**:

EXERCISE 8

$2x - 8 > 25$

Directions: Fill in the table to find which values are solutions to the inequality. Then graph the inequality on the number line, and write a simpler inequality describing the solutions.

x	-30	-20	-10	0	10	20	30
$2x - 8$							
Solution or not a solution?							

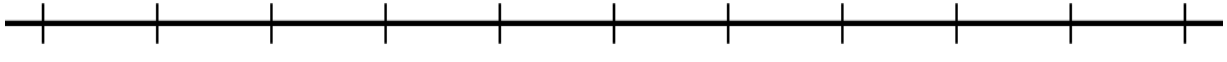
Answer blocks:

Solution

Not a solution

Find the endpoint: For which value of x is $2x - 8 = 25$ true?:

Graph of the **solution set**:



Simple inequality desribing the **solution set**:

EXERCISE 9

$-3x - 10 > -40$

Directions: Fill in the table to find which values are solutions to the inequality. Then graph the inequality on the number line, and write a simpler inequality describing the solutions.

x	-30	-20	-10	0	10	20	30
$-3x - 10$							
Solution or not a solution?							

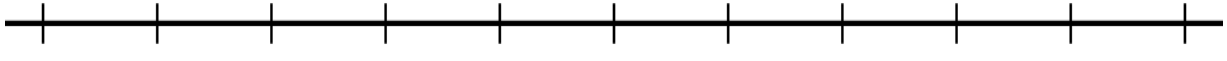
Answer blocks:

Solution

Not a solution

Find the endpoint: For which value of x is $-3x - 10 = -40$ true?:

Graph of the **solution set**:



Simple inequality desribing the **solution set**: