

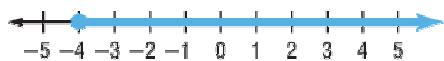
Lesson 5-9**Example 1**

Solve $r - 5 \geq -9$ and graph the solution.

Solution

$$\begin{aligned} r - 5 &\geq -9 \\ r - 5 + 5 &\geq -9 + 5 \quad \text{Undo the subtraction.} \\ r &\geq -4 \quad \text{Simplify.} \end{aligned}$$

Draw the graph.



The solution is all real numbers greater than or equal to -4 .

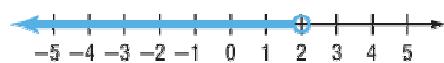
Example 2

Solve $-5x + 4 > -6$ and graph the solution.

Solution

$$\begin{aligned} -5x + 4 &> -6 \\ -5x + 4 - 4 &> -6 - 4 \quad \text{Undo the addition.} \\ -5x &> -10 \\ \frac{-5x}{-5} &< \frac{-10}{-5} \quad \text{Reverse the direction of the inequality since you are dividing by } -5. \\ x &< 2 \end{aligned}$$

Draw the graph.



The open circle shows that 2 is not a solution.
Choose a point to check your answer.

The solution is all real numbers less than 2 .

Example 3

RETAIL Trevor wants to buy a home theater system that costs \$850. He has already put aside \$370. If he is able to save \$30 a month for this purchase, how many months will it take until he has at least enough money to buy the system?

Solution

Write and solve an inequality that represents the situation.

Let m = the number of months it will take until Trevor has at least enough money to buy the system.

$$\begin{aligned}30x + 370 &\geq 850 \\30x + 370 - 370 &\geq 850 - 370 \\30x &\geq 480 \\x &\geq 16\end{aligned}$$

It will take Trevor at least 16 months to be able to buy the system.