

9-4

Solving Quadratic Inequalities

Objectives:

1. I can solve a quadratic inequality.
2. I can graph the answer to a quadratic inequality.
3. I can state my answer in set and interval notation.

Replace the ? with <, >, or = to make the statement true.

1. $3 ? 6$

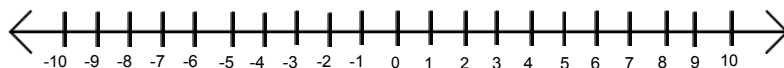
2. $-3 ? -6$

3. $\frac{1}{2} ? .5$

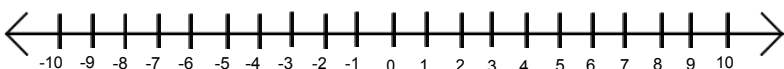
4. $\frac{2}{3} ? \frac{3}{5}$

Write each inequality using interval notation then graph.

$$\{x \mid -2 \leq x \leq 4\}$$

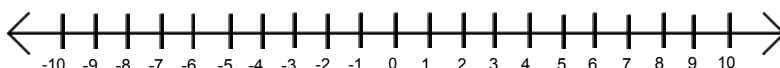


$$\{x \mid 1 < x \leq 5\}$$

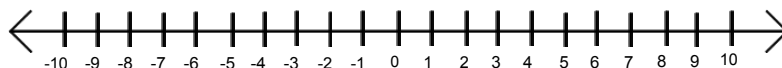


Write each inequality using interval notation then graph.

$$\{x \mid x < 2\}$$



$$\{x \mid x \geq 3\}$$

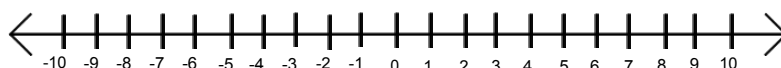


Write each inequality using interval notation then graph.

$$\{x \mid x < -2 \cup x > 5\}$$

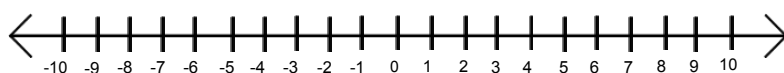


$$\{x \mid x \leq 1 \cup x \geq 4\}$$



You try

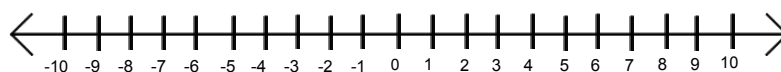
$$\{x \mid -3 \leq x \leq 2\}$$



$$\{x \mid x < 3\}$$



$$\{x \mid x < 3 \cup x > 8\}$$



Write each interval using inequality notation involving x , then graph.

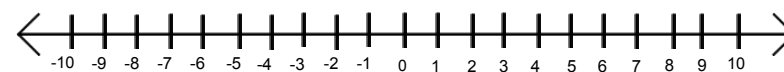
$$[-2, 4)$$



$$(-\infty, -3] \cup [4, \infty)$$

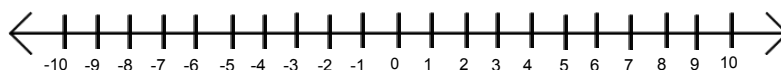


$$(-\infty, 1)$$



You try

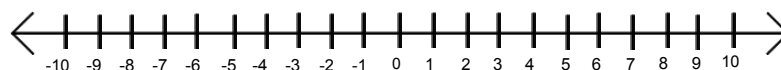
$$(0, 5]$$



$$(-\infty, -6) \cup (3, \infty)$$

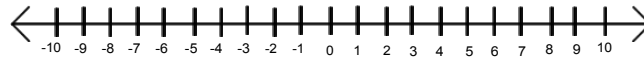
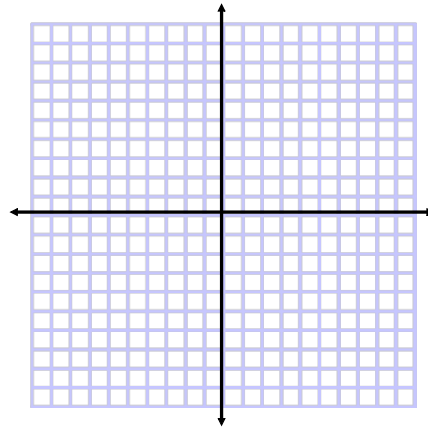


$$(7, \infty)$$



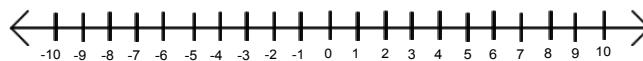
Solve the following using the graphical method.

$$x^2 - 4x - 5 \geq 0$$



Solve the following using the algebraic method.

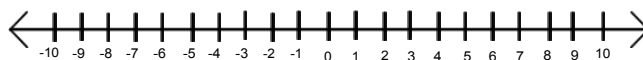
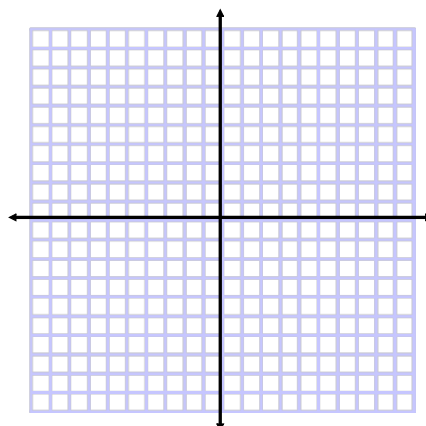
$$x^2 - 4x - 5 \geq 0$$



You Try

Solve algebraically then check your answer by graphing

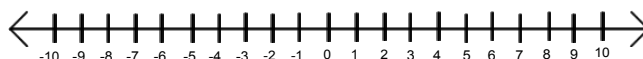
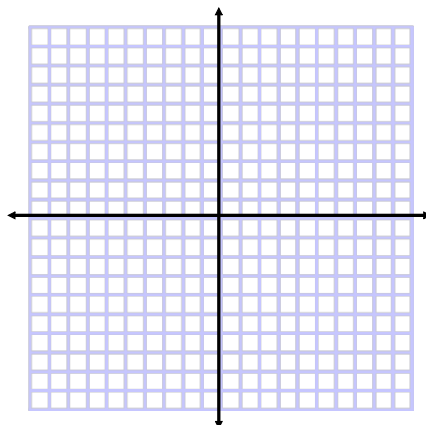
$$x^2 + 3x - 10 \geq 0$$



You Try

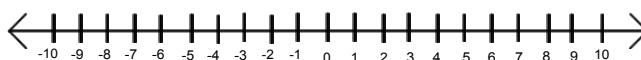
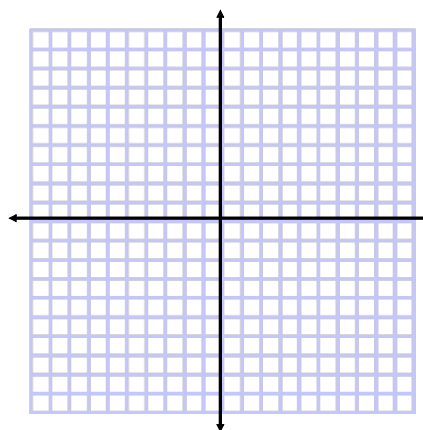
Solve algebraically then check your answer by graphing

$$-x^2 + 5x - 6 < 0$$



Solve algebraically then check your answer by graphing

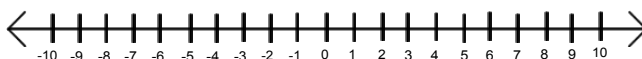
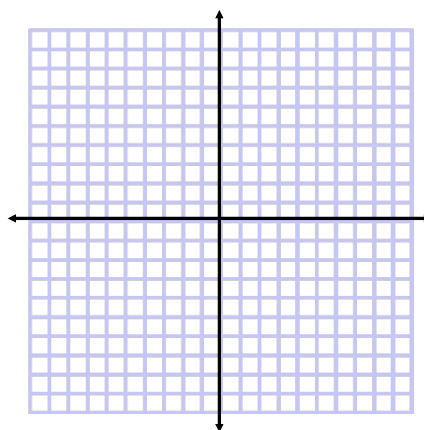
$$2x^2 > 4x - 1$$



You try

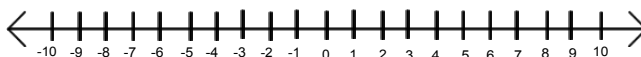
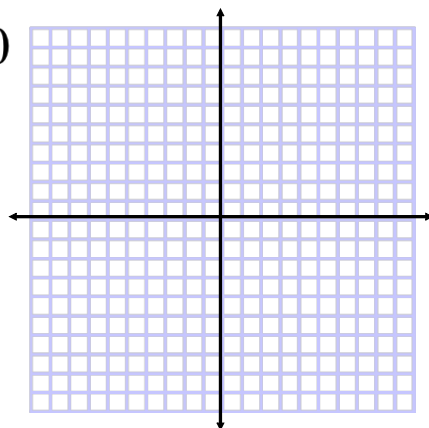
Solve algebraically then check your answer by graphing

$$3x^2 < -x + 5$$



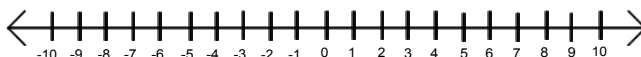
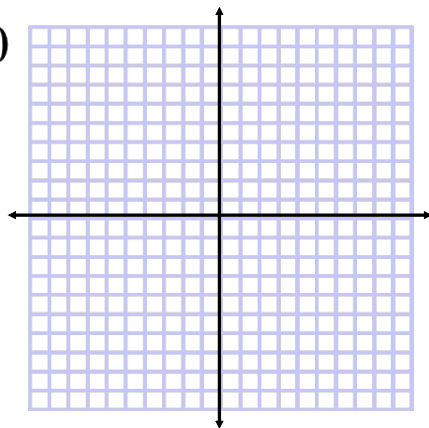
Solve algebraically then check your answer by graphing

$$y^2 + 3y + 5 \geq 0$$



Solve algebraically then check your answer by graphing

$$y^2 + 3y + 5 \geq 0$$



Solve algebraically then check your answer by graphing

$$x^2 + 8x + 16 > 0$$

