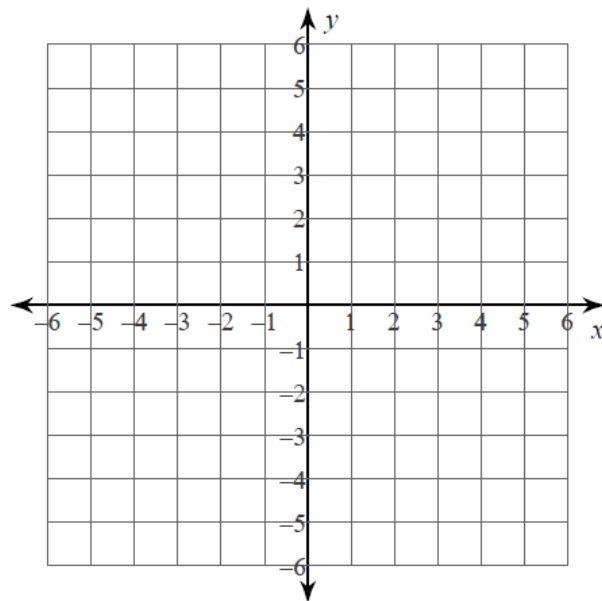


Algebra 2 Course, Unit 3 –  
Worksheet 1 –  
Graphing Inequalities in two  
Variables, Part 1

Algebra 2 Course, Unit 3 – Worksheet 1 – Graphing Inequalities in Two Variables,  
Part 1

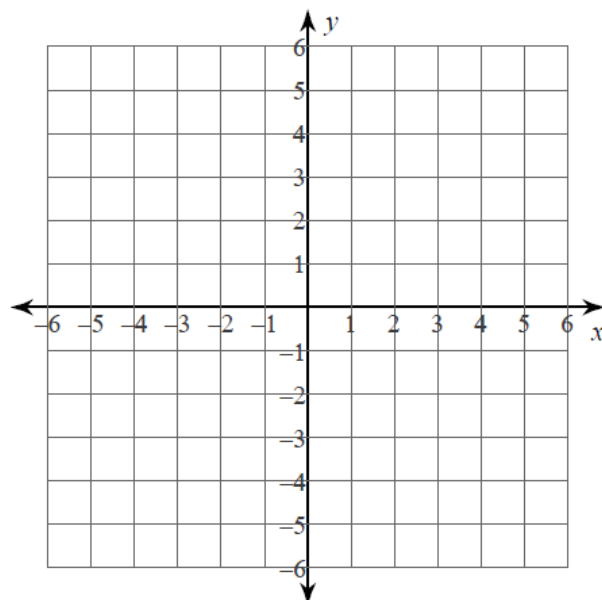
1. Graph the inequality on the quadrant plane below.

$$y > -4$$



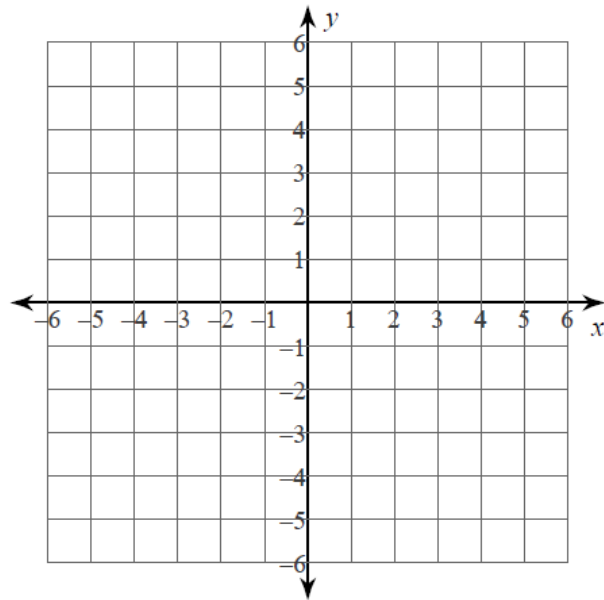
2. Graph the inequality on the quadrant plane below.

$$x \leq 5$$



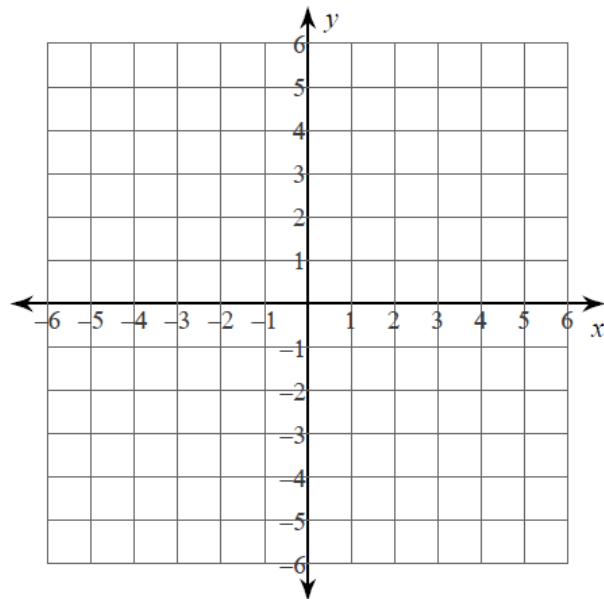
3. Graph the inequality on the quadrant plane below.

$$x + y > 2$$



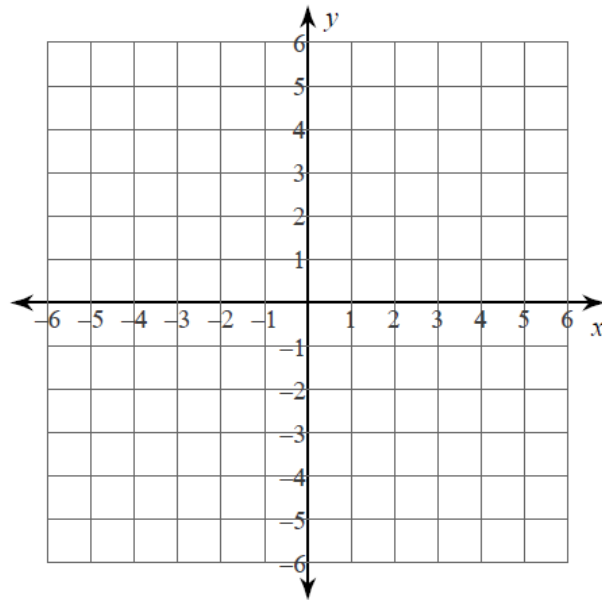
4. Graph the inequality on the quadrant plane below.

$$x - y < 5$$



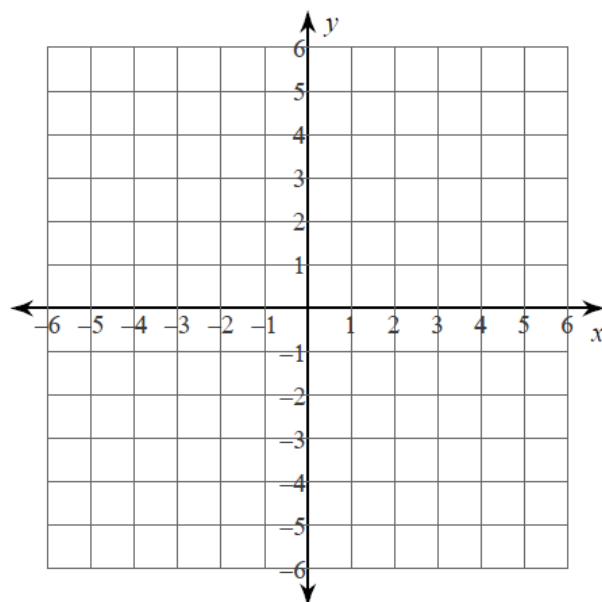
5. Graph the inequality on the quadrant plane below.

$$y \geq 3x - 4$$



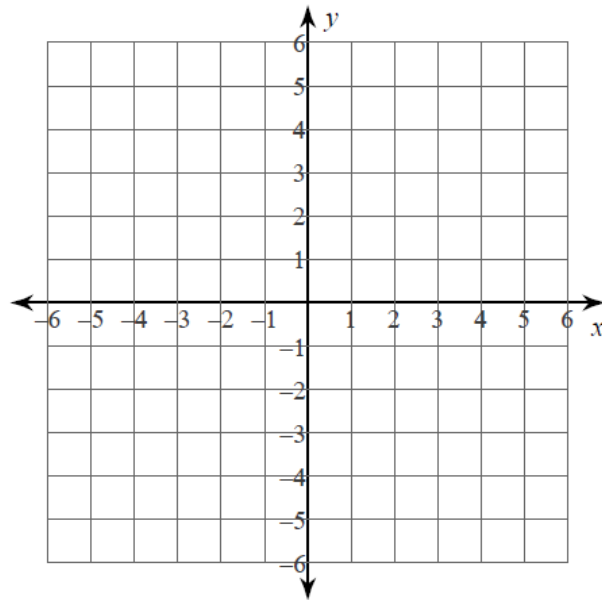
6. Graph the inequality on the quadrant plane below.

$$y \leq \frac{3}{5}x - 5$$



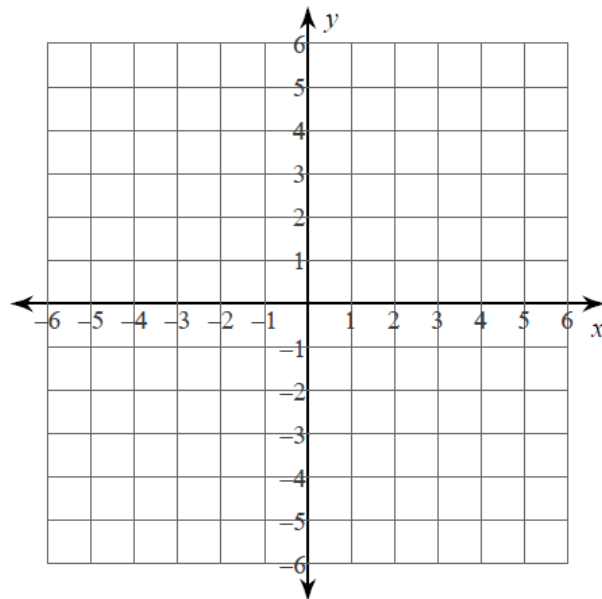
7. Graph the inequality on the quadrant plane below.

$$y > -5x - 5$$



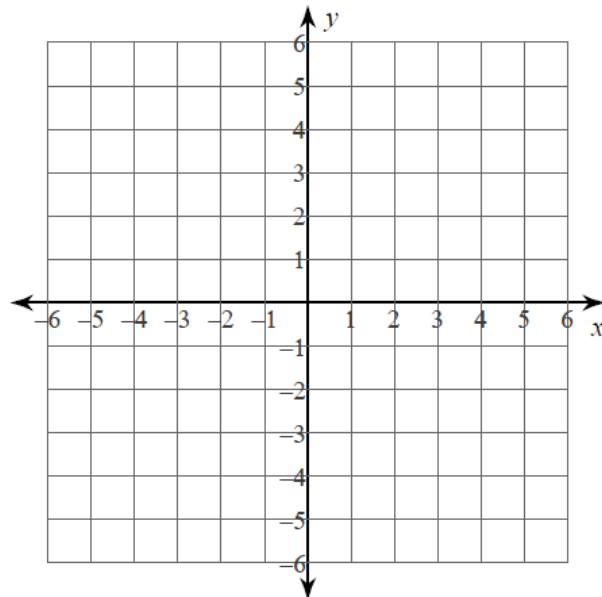
8. Graph the inequality on the quadrant plane below.

$$y > 2x - 5$$



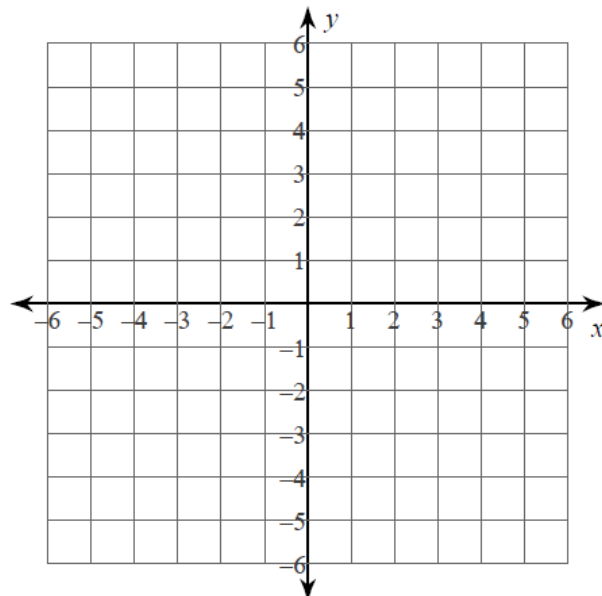
9. Graph the inequality on the quadrant plane below.

$$y \geq \frac{7}{4}x + 2$$



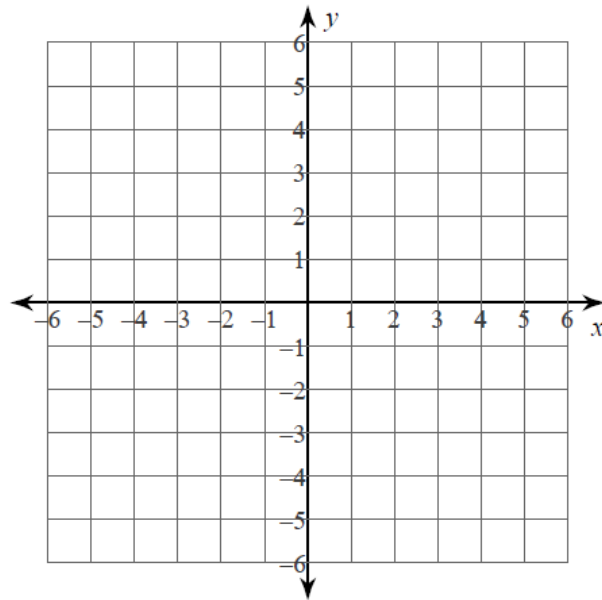
10. Graph the inequality on the quadrant plane below.

$$y \leq \frac{4}{3}x - 4$$



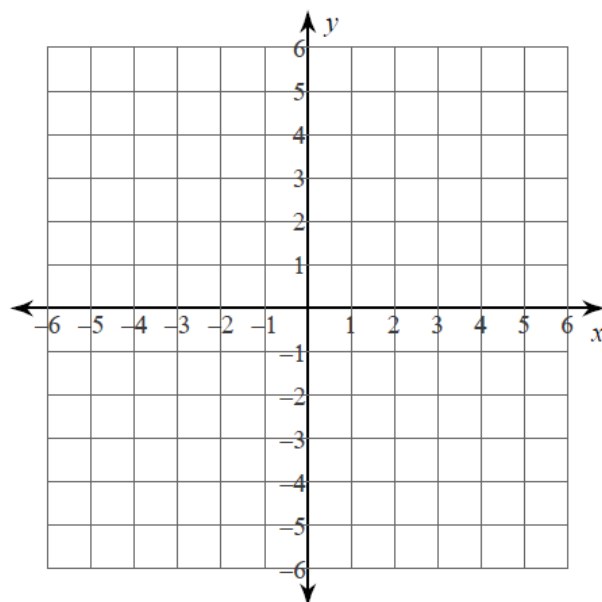
11. Graph the inequality on the quadrant plane below.

$$y < 6x + 1$$



12. Graph the inequality on the quadrant plane below.

$$y > \frac{1}{5}x + 3$$



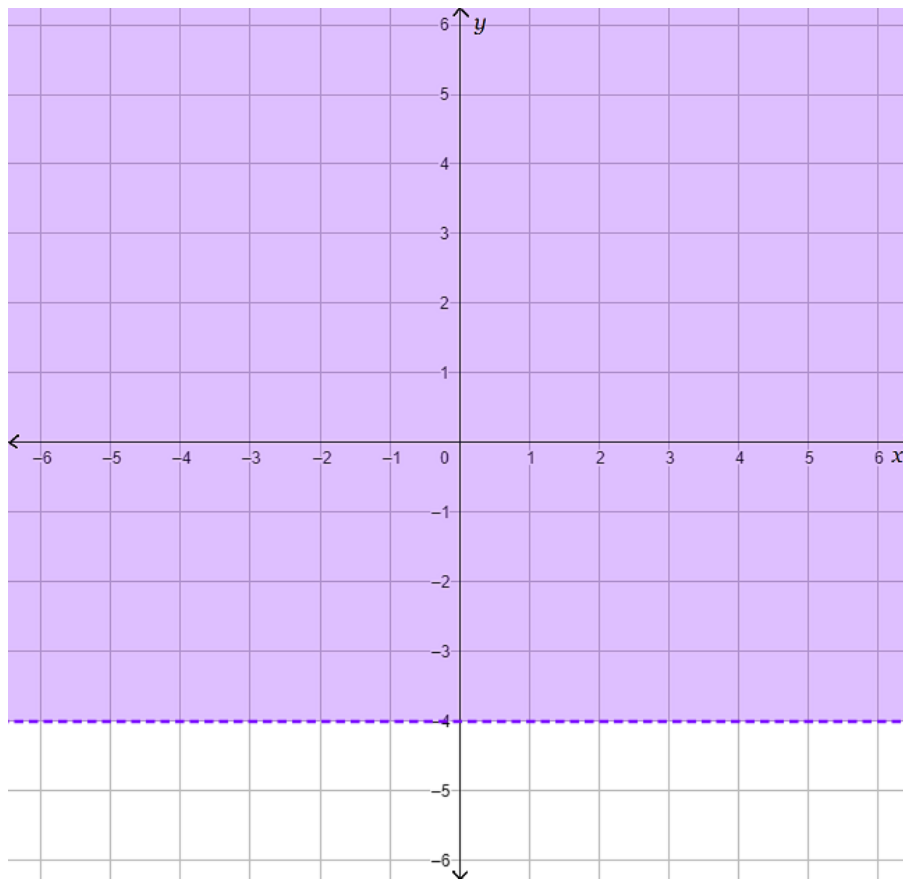
Answers – Algebra 2 Course, Unit 3 – Worksheet 1 – Graphing Inequalities in Two Variables, Part 1

1. Graph the inequality on the quadrant plane below.

$$y > -4$$

The corresponding equation is  $y = -4$ , and this line is a dotted line because the inequality symbol does not have an equal sign. This means the points on the corresponding line are not included in the solution area of the inequality. The shading is above the line because the inequality statement says  $y$  is greater than  $-4$ , which is above  $-4$  on the  $y$ -axis.

**Answer:** The graph is:



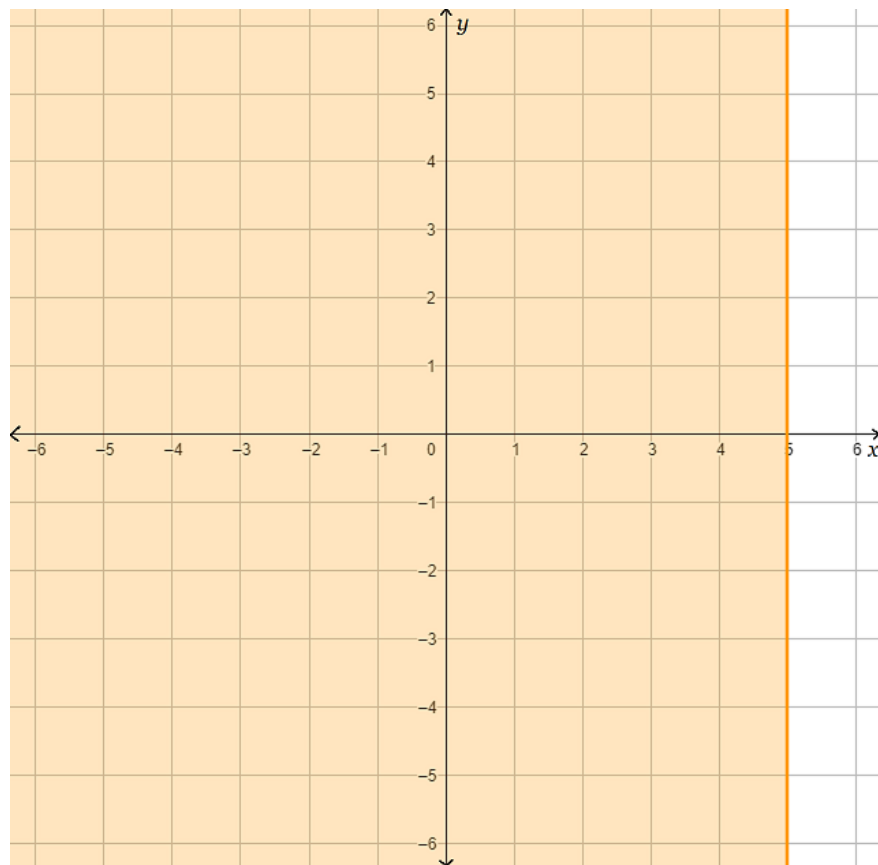


2. Graph the inequality on the quadrant plane below.

$$x \leq 5$$

The corresponding equation is  $x = 5$ , and this line is a solid line because the inequality symbol has an equal sign. This means the points on the corresponding line are included in the solution area of the inequality. The shading is to the left of the line because the inequality statement says  $x$  is less than or equal to 5, which is to the left of 5 on the  $x$ -axis.

**Answer:** The graph is:

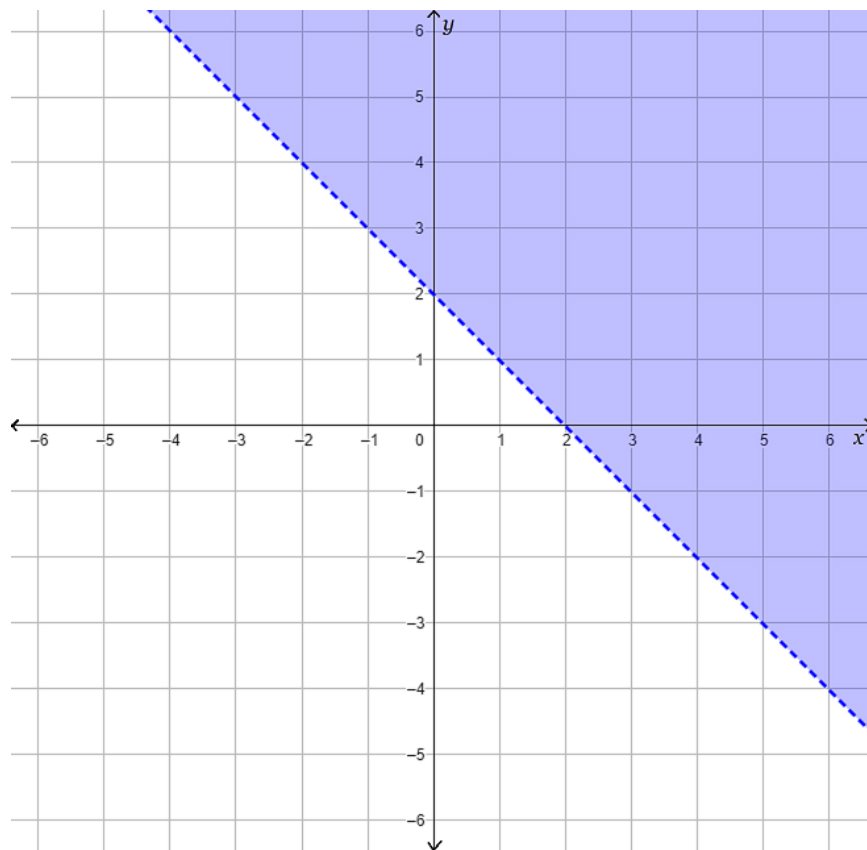


3. Graph the inequality on the quadrant plane below.

$$x + y > 2$$

Solving for  $y$  gives  $y > -x + 2$ . The corresponding equation is  $y = -x + 2$ , with a slope of  $-1$  and a  $y$ -intercept of  $(0, 2)$ . This line is a dotted line because the inequality symbol does not have an equal sign. This means the points on the corresponding line are not included in the solution area of the inequality. The shading is above the line because the final inequality statement says  $y$  is greater than  $-x + 2$ , which is above the line  $y = -x + 2$ .

**Answer:** The graph is:

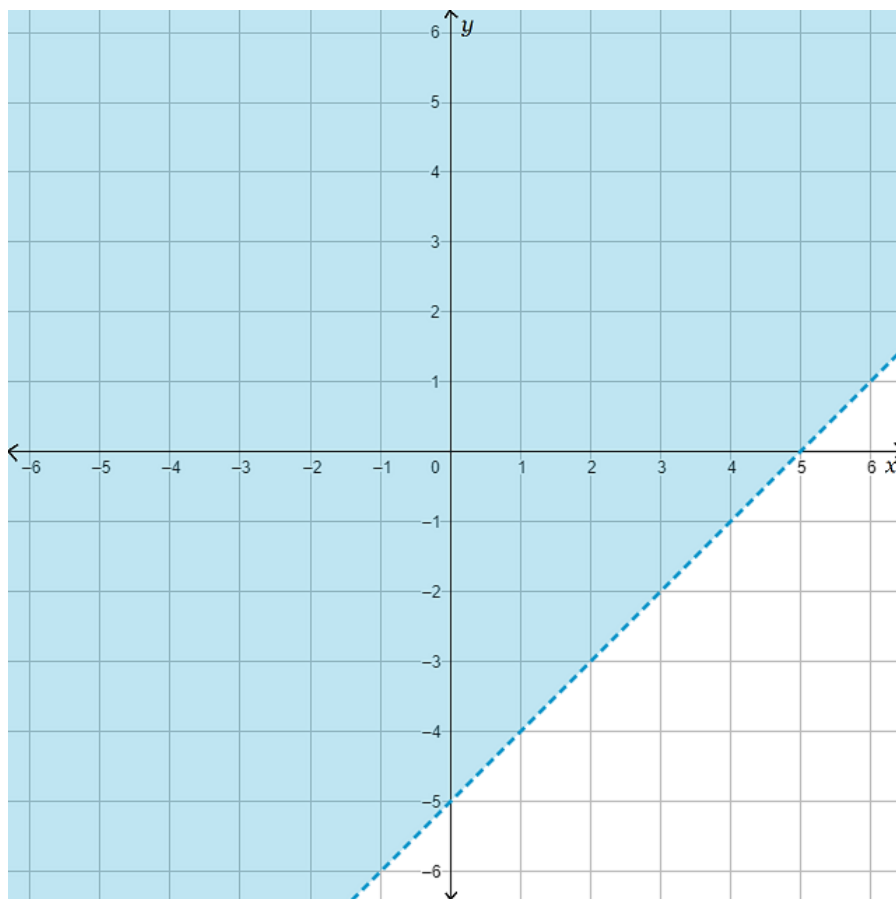


4. Graph the inequality on the quadrant plane below.

$$x - y < 5$$

Solving for  $y$  gives  $-y < -x + 5$ ;  $y > x - 5$ . The corresponding equation is  $y = x - 5$ , with a slope of 1 and a  $y$ -intercept of  $(0, -5)$ . This line is a dotted line because the inequality symbol does not have an equal sign. This means the points on the corresponding line are not included in the solution area of the inequality. The shading is above the line because the final inequality statement says  $y$  is greater than  $x - 5$ , which is above the line is  $y = x - 5$ .

**Answer:** The graph is:

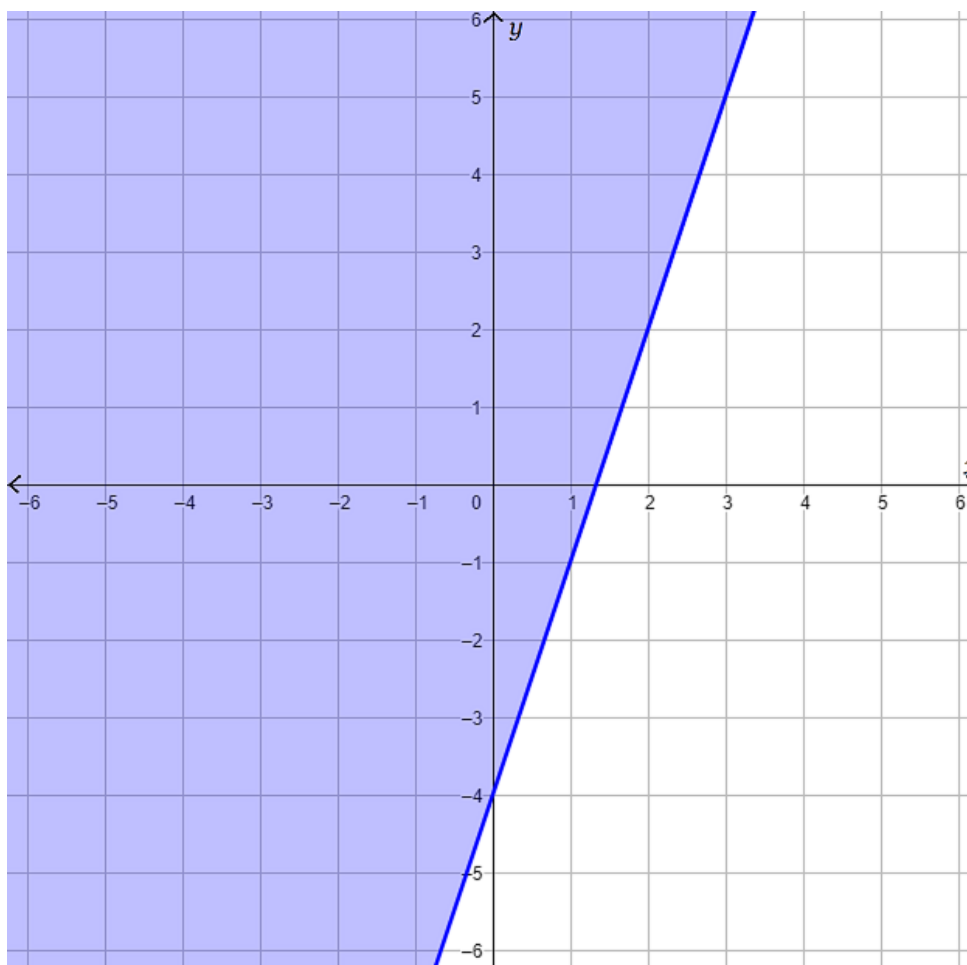


5. Graph the inequality on the quadrant plane below.

$$y \geq 3x - 4$$

The corresponding equation is  $y = 3x - 4$ , with a slope of 3 and a  $y$ -intercept of  $(0, -4)$ . This line is a solid line because the inequality symbol has an equal sign. This means the points on the corresponding line are included in the solution area of the inequality. The shading is above the line because the inequality statement says  $y$  is greater than  $3x - 4$ , which is above the line  $y = 3x - 4$ .

**Answer:** The graph is:

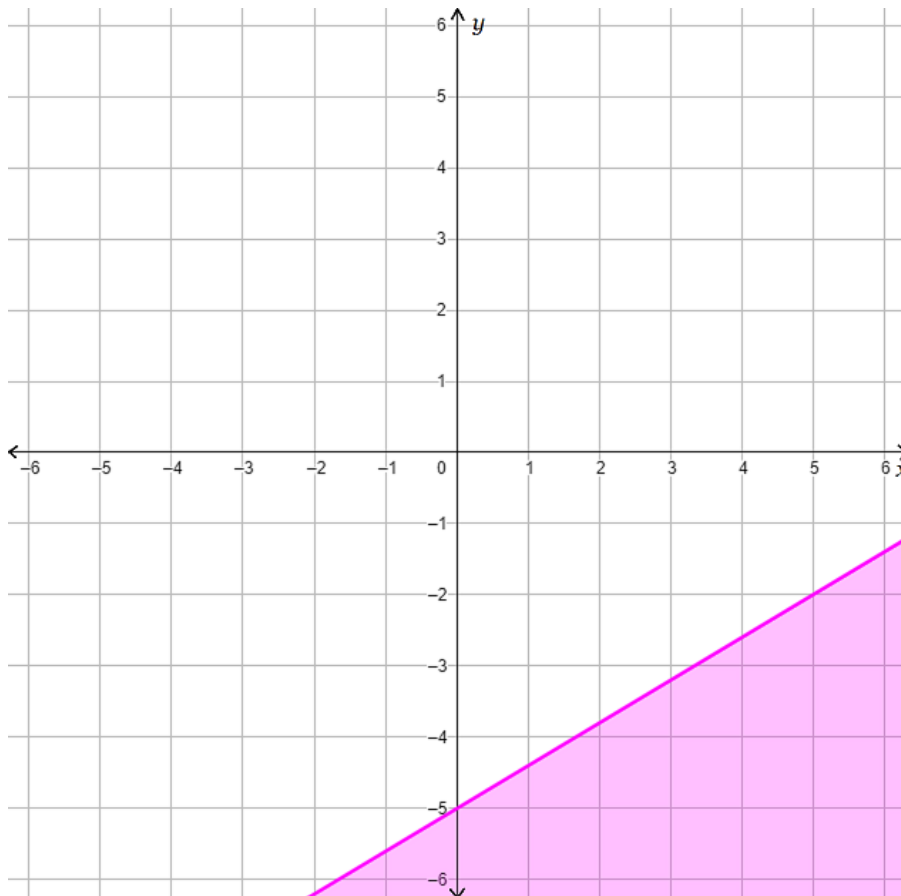


6. Graph the inequality on the quadrant plane below.

$$y \leq \frac{3}{5}x - 5$$

The corresponding equation is  $y = \frac{3}{5}x - 5$ , with a slope of  $\frac{3}{5}$  and a  $y$ -intercept of  $(0, -5)$ . This line is a solid line because the inequality symbol has an equal sign. This means the points on the corresponding line are included in the solution area of the inequality. The shading is below the line because the inequality statement says  $y$  is less than  $\frac{3}{5}x - 5$ , which is below the line  $y = \frac{3}{5}x - 5$ .

**Answer:** The graph is:

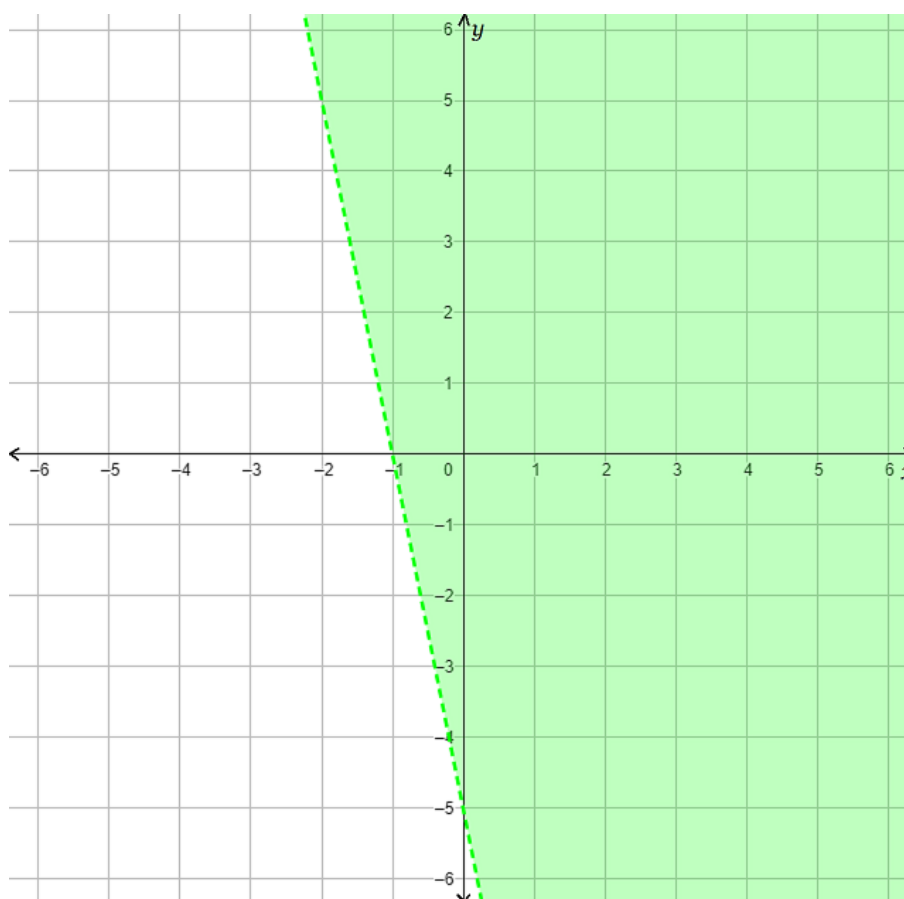


7. Graph the inequality on the quadrant plane below.

$$y > -5x - 5$$

The corresponding equation is  $y = -5x - 5$ , with a slope of  $-5$  and a  $y$ -intercept of  $(0, -5)$ . This line is a dotted line because the inequality symbol does not have an equal sign. This means the points on the corresponding line are not included in the solution area of the inequality. The shading is above the line because the inequality statement says  $y$  is greater than  $-5x - 5$ , which is above the line  $y = -5x - 5$ .

**Answer:** The graph is:

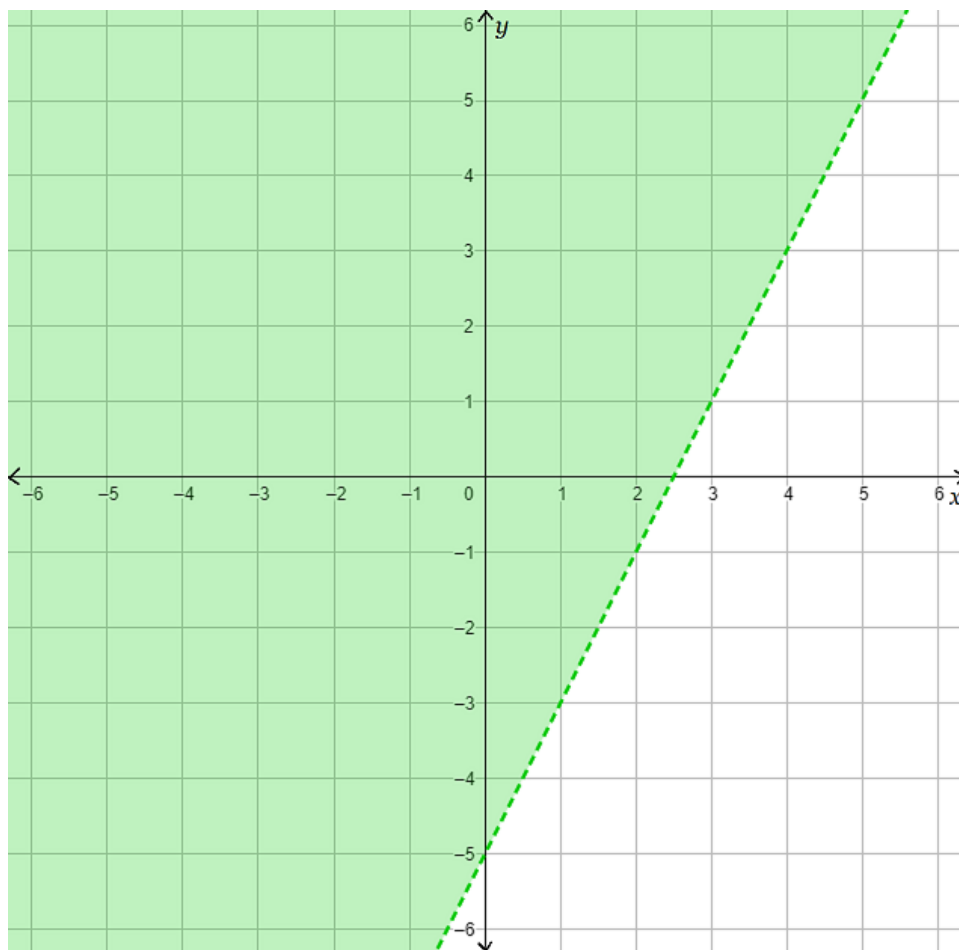


8. Graph the inequality on the quadrant plane below.

$$y > 2x - 5$$

The corresponding equation is  $y = 2x - 5$ , with a slope of 2 and a  $y$ -intercept of  $(0, -5)$ . This line is a dotted line because the inequality symbol does not have an equal sign. This means the points on the corresponding line are not included in the solution area of the inequality. The shading is above the line because the inequality statement says  $y$  is greater than  $2x - 5$ , which is above the line  $y = 2x - 5$ .

**Answer:** The graph is:

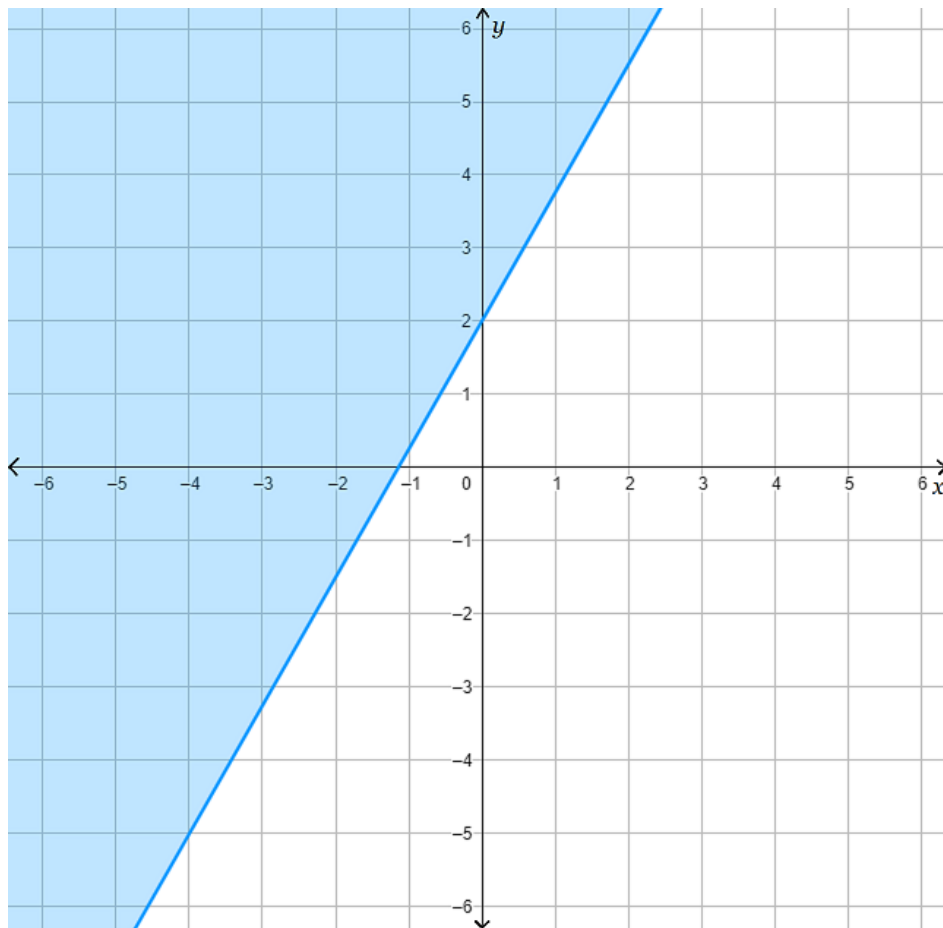


9. Graph the inequality on the quadrant plane below.

$$y \geq \frac{7}{4}x + 2$$

The corresponding equation is  $y = \frac{7}{4}x + 2$ , with a slope of  $\frac{7}{4}$  and a  $y$ -intercept of  $(0, 2)$ . This line is a solid line because the inequality symbol has an equal sign. This means the points on the corresponding line are included in the solution area of the inequality. The shading is above the line because the inequality statement says  $y$  is greater than  $\frac{7}{4}x + 2$ , which is above the line  $y = \frac{7}{4}x + 2$ .

**Answer:** The graph is:



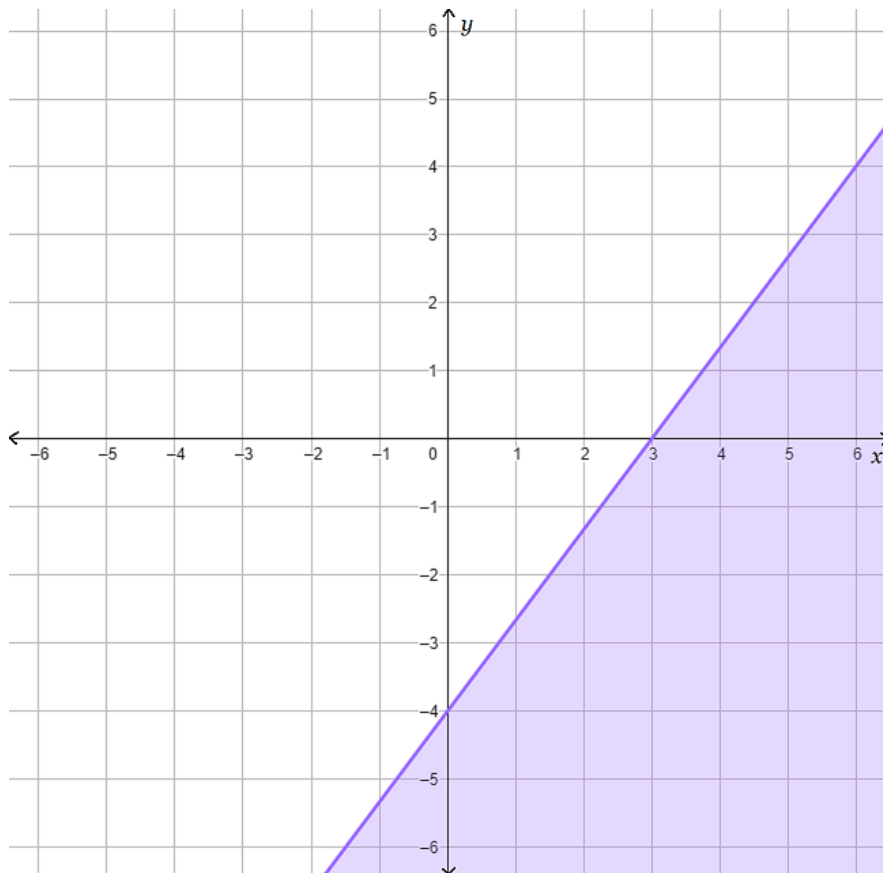


10. Graph the inequality on the quadrant plane below.

$$y \leq \frac{4}{3}x - 4$$

The corresponding equation is  $y = \frac{4}{3}x - 4$ , with a slope of  $\frac{4}{3}$  and a  $y$ -intercept of  $(0, -4)$ . This line is a solid line because the inequality symbol has an equal sign. This means the points on the corresponding line are included in the solution area of the inequality. The shading is below the line because the inequality statement says  $y$  is less than  $\frac{4}{3}x - 4$ , which is below the line  $y = \frac{4}{3}x - 4$ .

**Answer:** The graph is:

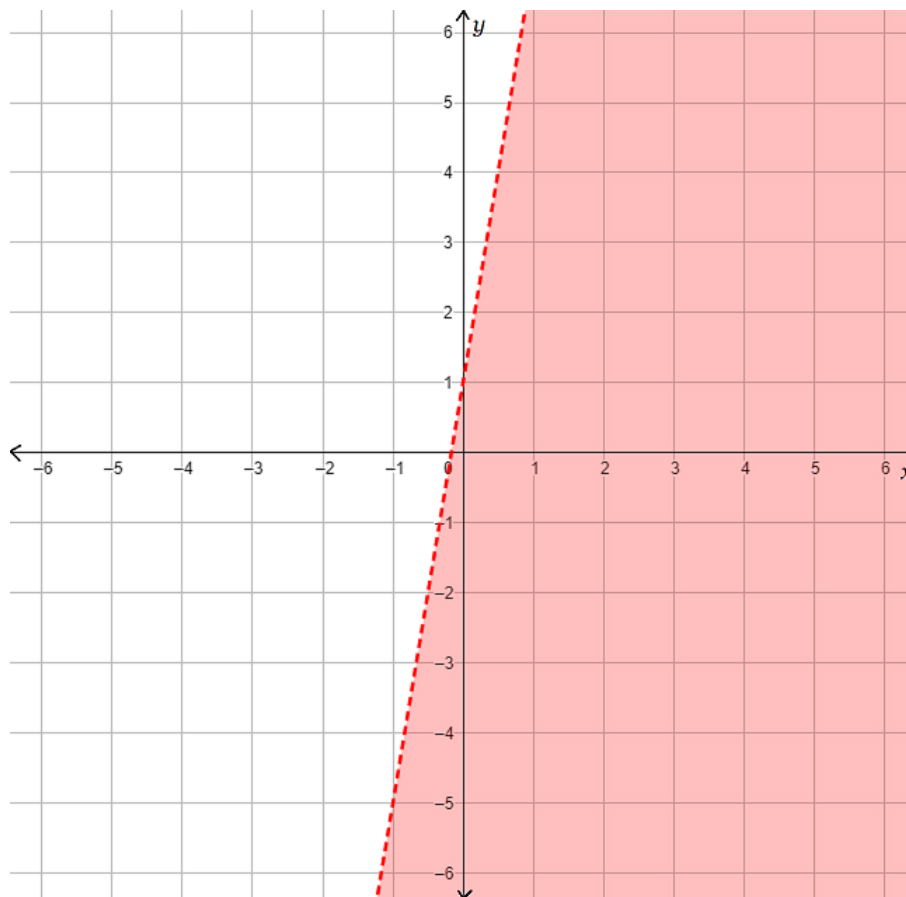


11. Graph the inequality on the quadrant plane below.

$$y < 6x + 1$$

The corresponding equation is  $y = 6x + 1$ , with a slope of 6 and a  $y$ -intercept of  $(0, 1)$ . This line is a dotted line because the inequality symbol does not have an equal sign. This means the points on the corresponding line are not included in the solution area of the inequality. The shading is below the line because the inequality statement says  $y$  is less than  $6x + 1$ , which is below the line  $y = 6x + 1$ .

**Answer:** The graph is:



12. Graph the inequality on the quadrant plane below.

$$y > \frac{1}{5}x + 3$$

The corresponding equation is  $y = \frac{1}{5}x + 3$ , with a slope of  $\frac{1}{5}$  and a  $y$ -intercept of  $(0, 3)$ . This line is a dotted line because the inequality symbol does not have an equal sign. This means the points on the corresponding line are not included in the solution area of the inequality. The shading is above the line because the inequality statement says  $y$  is greater than  $\frac{1}{5}x + 3$ , which is above the line  $y = \frac{1}{5}x + 3$ .

**Answer:** The graph is:

