Graph this on a number line:

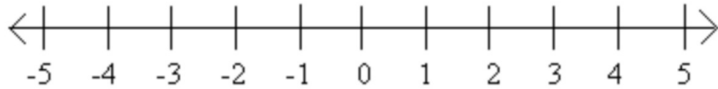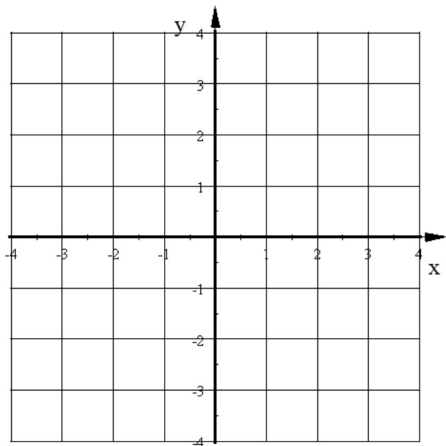x = 2

Number line graph of the solution to an equation:

Just a point on the number line.

Algebra 1 Sec 7-5:

Graph this line below: y = -x + 3
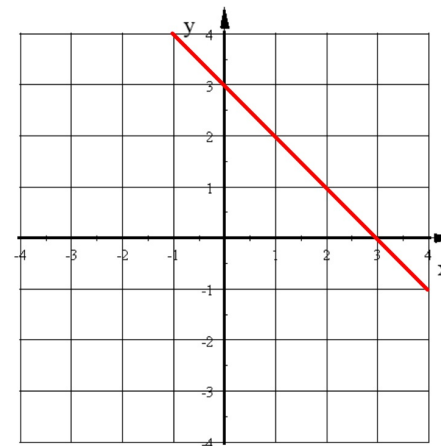

Pick 3 points above the line and substitute these x and y values into the equation. Do they make the equation true?

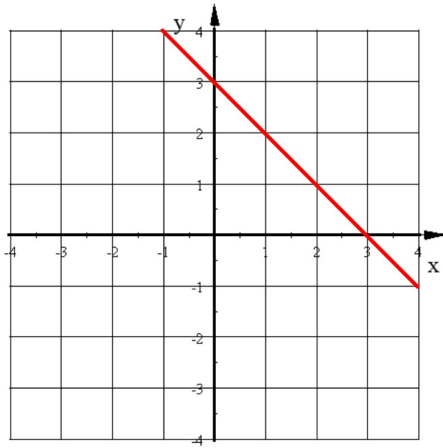| Point	y	-x + 3

y = -x + 3

What would happen if we picked points below the line and substituted the x and y values into the equation?

Point	y	-x + 3

y = -x + 3

What would happen if we picked points ON the line and substituted the x and y values into the equation?

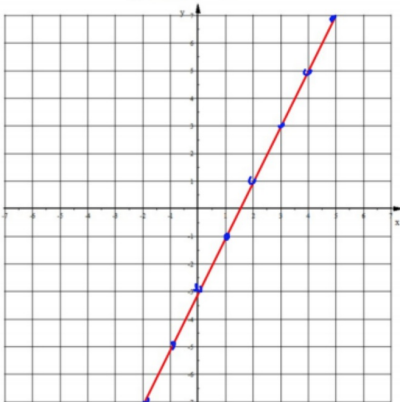| Point	y	-x + 3

y ≥ 2x - 3

Graphing the Boundary Line

- Put points on the graph to represent the location of the line.

- Connect the points with either a

  Solide Line   or   Dashed Line
  (≤ or ≥)   (< or >)

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y ☐ -x + 3   Points ON the line make
             ☐ true

y ☐ -x + 3   Points above the line make
             ☐ true

y ☐ -x + 3   Points above the line make
             ☐ true

The graph of a linear inequality:

○ A boundary line that is either dashed or solid.
○ The solutions are all the points on one side of the boundary line that make the inequality true.

Which side of the line to shade for an inequality?

If inequality is in Slope-Intercept Form:

○ y > mx + b   or y ≥ mx + b means to shade

○ y < mx + b   or y ≤ mx + b means to shade
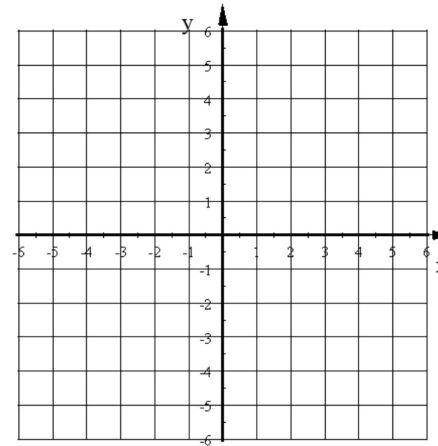

Graphing linear inequalities that are in

STANDARD FORM

Method 1: Rewrite the equation in slope-intercept form

Method 2: Find the x & y intercepts and plot them on the axes

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Graph the inequality   y < 2x - 3

Steps:

● Place dots on the graph to represent the location of the line.

● Connect the dots with either a
   solid line: ≤ or ≥   or a
   dashed line: < or >

● Shade the side of the line that shows all the points that make the inequality true.

Which side to shade?

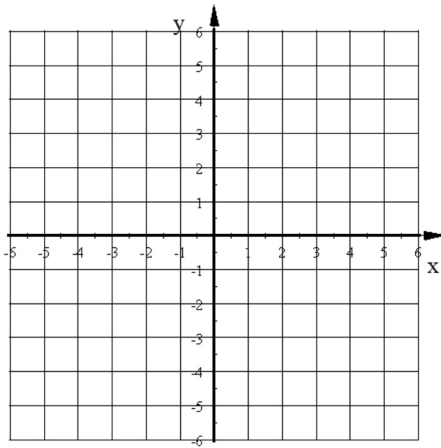If inequality is in Standard Form: Ax + By = C

Pick any point NOT on the line and test it in the inequality.
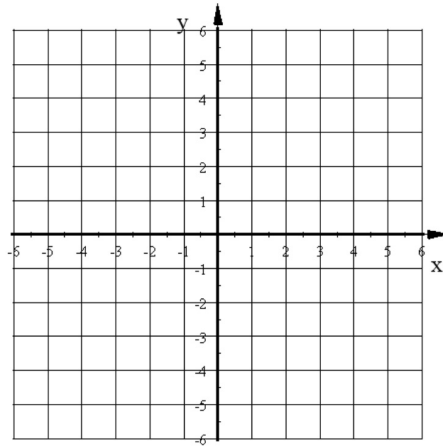
○ If it makes the inequality true

○ If it makes the inequality false
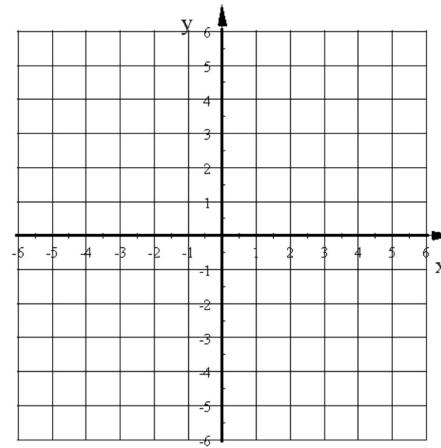
Graph each inequality.

1. $y \geq 3x - 2$

2. $4x - 6y < 12$
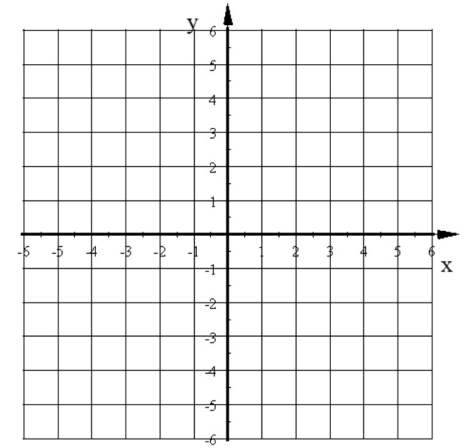
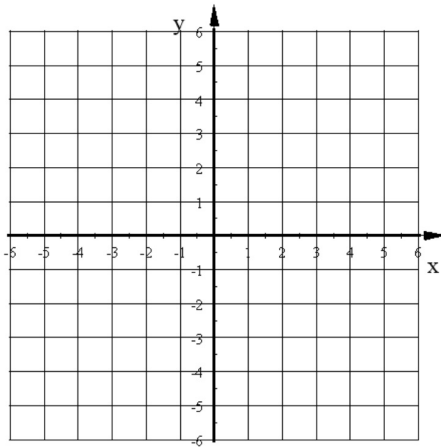Graph each inequality.

2. $y \leq -\frac{2}{3}x$
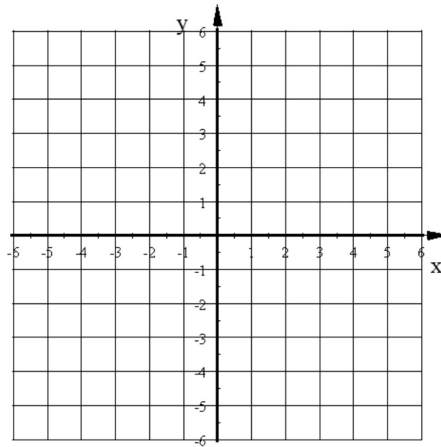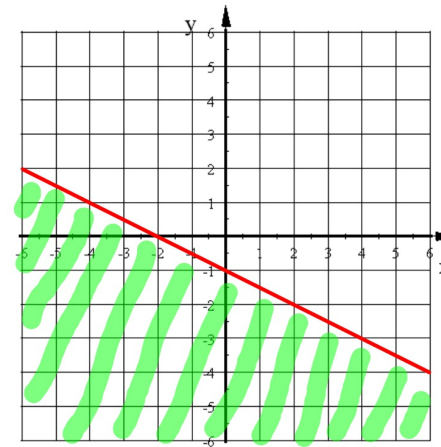
4. $x > -3$

Graph each inequality.

5. $y \geq 2$

6. $-8x + 12 > 36$

Write the equation of this inequality.

Write the equation of this inequality.