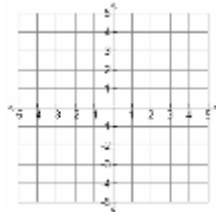
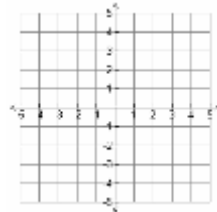


Let's refresh our memory about graphing linear equations !

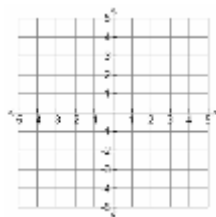
Graph $y = \frac{2}{3}x + 2$



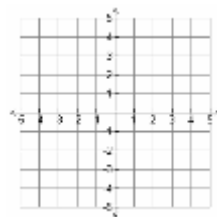
Graph $3x - 4y = 8$



Graph $x = 5$



Graph $y = -3$



Oct 30-4:18 PM

Your Turn !

You Try:

Tell whether the ordered pair is a solution of $-x + 2y < 8$.

- a) (0, 0)
- b) (0, 4)
- c) (3, 5)

Oct 6-4:33 PM

6.7 Graph Linear Inequalities in Two Variables

Deciding whether an ordered pair is a solution of a linear inequality.

EXAMPLE 1 Standardized Test Practice

Which ordered pair is *not* a solution of $x - 3y \leq 6$?

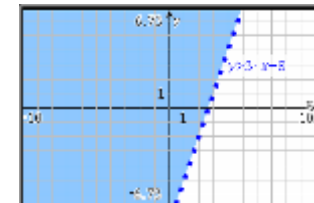
- (A) (0, 0)
- (B) (5, -1)
- (C) (10, 3)
- (D) (-1, 2)

Oct 20-2:43 PM

Let's go over some important definitions:

DEFINITION:

In a coordinate plane, the graph of an inequality in two variables is the set of all points that represent all solutions of the inequality.



DEFINITION:

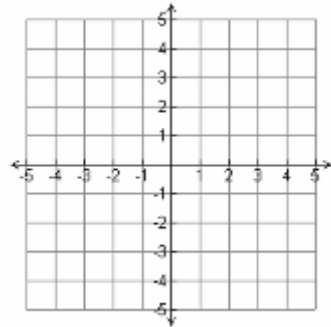
The boundary line of a linear inequality divides the coordinate plane into two half-planes. Only **one** half-plane contains points that represent the solutions of the inequality.

Oct 30-4:27 PM

Graph a linear inequality in two variables. [Boundary is in slope-intercept form]

EXAMPLE 2 Graph a linear inequality in two variables

Graph the inequality $y > 4x - 3$.

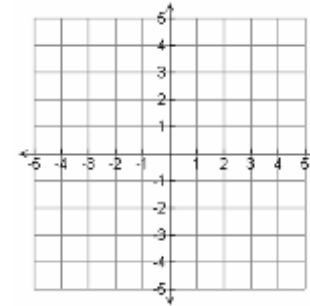


Oct 6-4:31 PM

Your Turn !

You Try:

Graph the inequality $y \leq \frac{3}{4}x + 3$

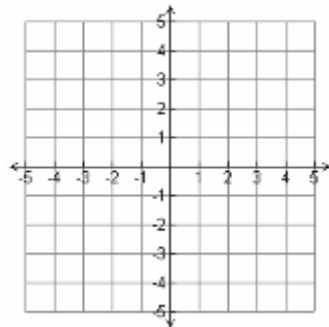


Oct 6-4:33 PM

Graph a linear inequality in two variables. [Boundary is in standard form]

EXAMPLE 3 Graph a linear inequality in two variables

Graph the inequality $x + 2y < 0$.

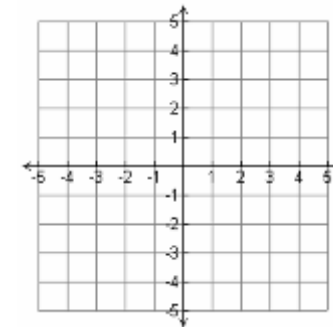


Oct 6-4:33 PM

Your Turn !

You Try:

Graph the inequality $x + 3y \geq -1$

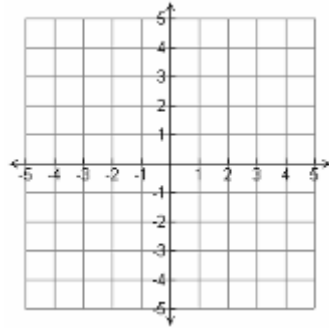


Oct 6-4:33 PM

Graph a linear inequality in one variable.

EXAMPLE 4 Graph a linear inequality in one variable

Graph the inequality $y \geq -3$.

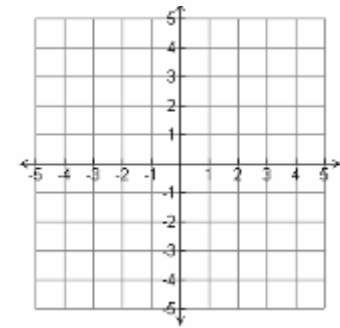


Oct 6-4:33 PM

Graph a linear inequality in one variable.

EXAMPLE 5 Graph a linear inequality in one variable

Graph the inequality $x < -1$.



Oct 30-4:38 PM

Your Turn !

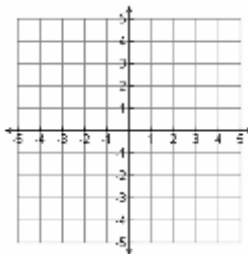
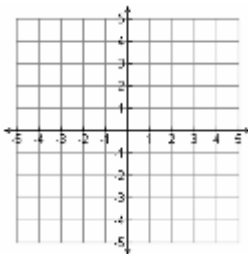
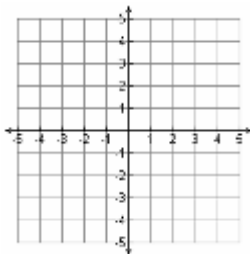
You Try:

Graph the inequality.

a) $y \leq 3$

b) $x < -2$

(c) $y > 1$



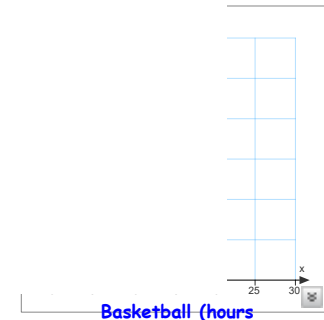
Oct 6-4:33 PM

Solve a multi-step problem.

EXAMPLE 6 Solve a multi-step problem

JOB EARNINGS You have two summer jobs at a youth center. You earn \$8 per hour teaching basketball and \$10 per hour teaching swimming. Let x represent the amount of time (in hours) you teach basketball each week, and let y represent the amount of time (in hours) you teach swimming each week. Your goal is to earn at least \$200 per week.

- Write an inequality that describes your goal in terms of x and y .
- Graph the inequality.
- Give three possible combinations of hours that will allow you to meet your goal.



Oct 30-4:48 PM