

# Geometry

## Notes Section 3.5

### Write and Graph Equations of Lines

#### VOCABULARY

Slope-Intercept Form:  $y = mx + b$ ;  $m$  = slope and  $b$  = y-intercept

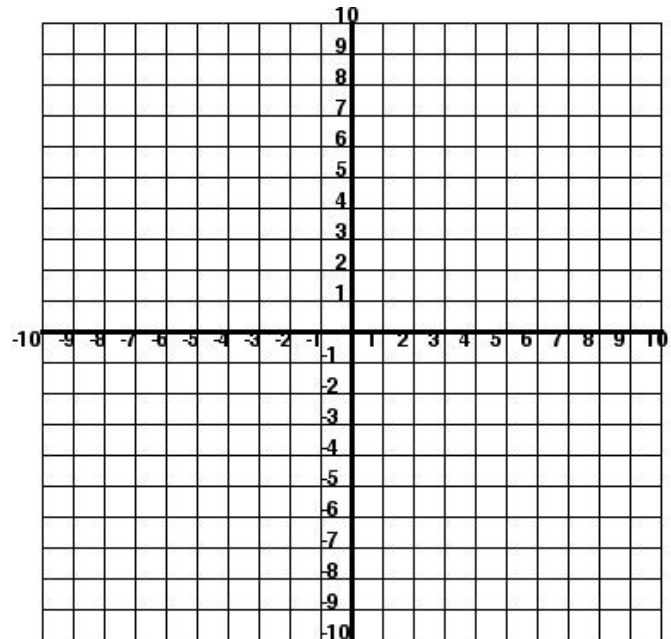
Standard Form:  $Ax + By = C$

EXAMPLE 1 Write an equation of the line in slope-intercept form.

Step 1 Find  $m$

Step 2 Find  $b$

Step 3 Write the equation



**EXAMPLE 2** Write an equation of a line passing through the given point and parallel to the given equation.

a) through  $(-1,1)$   
parallel to  $y = 2x - 3$

b) through  $(2,-3)$   
parallel to  $y = 6x + 4$

**EXAMPLE 3** Write an equation of a line passing through the given point and perpendicular to the given equation.

a) through  $(2,3)$   
perpendicular to  $y = -2x + 2$

b) through  $(3,-4)$   
perpendicular to  $y = -1/2x - 1$

**EXAMPLE 4** Write an equation of a line.

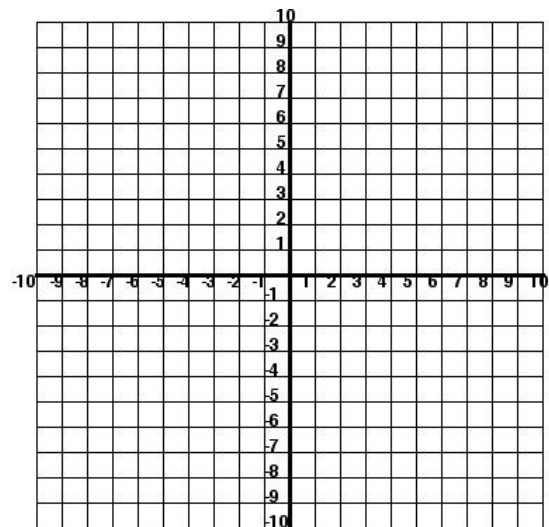
$(2,231)$  and  $(5,363)$

**EXAMPLE 5** Graph by finding the intercepts.

a)  $3x + 4y = 12$

x-intercept

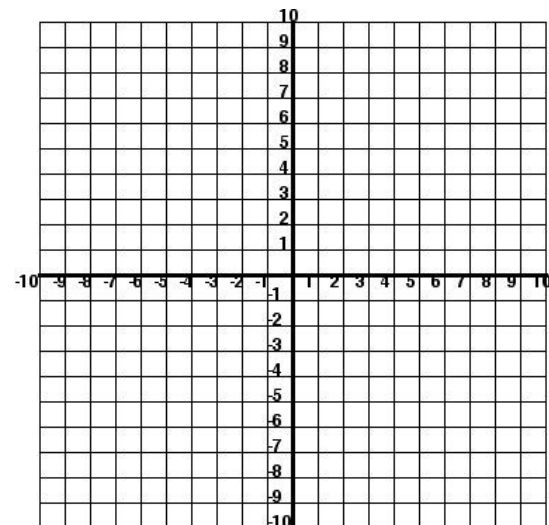
y-intercept



b)  $2x - 3y = 6$

x-intercept

y-intercept



**EXAMPLE 6** You can rent DVDs at a local store for \$4 each. AN Internet company offers a flat fee of \$15/month for as many rentals as you want. How many DVDs do you need to rent to make the online rental a better buy?

Online  $y = 15$

Locally  $y = 4x$

