Name:_____ Date:_____

Notes
Algebra Section 4.3
Pages 225-232

Goal: "Identify *x* and *y* intercepts"
"You will graph linear equations using intercepts"

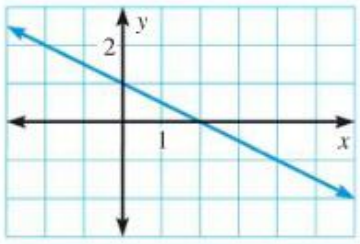
Vocabulary

x intercept: The ____ _____ of a point where the _____ crosses the ____ _____.

y intercept: The ____ _____ of a point where the _____ crosses the ____ _____.

Finding the *x* and *y* intercepts on a graph.

Example:

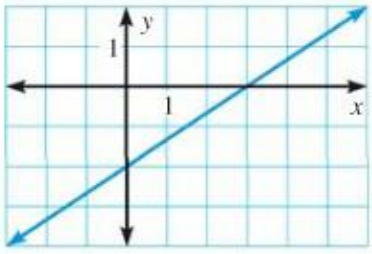


x intercept:

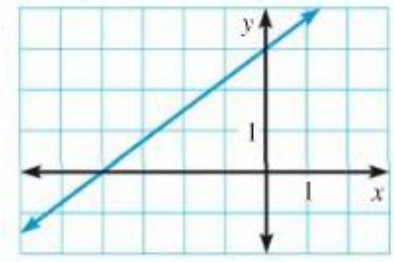
y intercept:

Try These:

1)



2)



Finding the *x* intercept:

$2x + 7y = 28$

Plug 0 in for *y*.

Coordinate:

Finding the *y* intercept:

$2x + 7y = 28$

Plug 0 in for *x*

Coordinate:

Using intercepts to graph an equation:

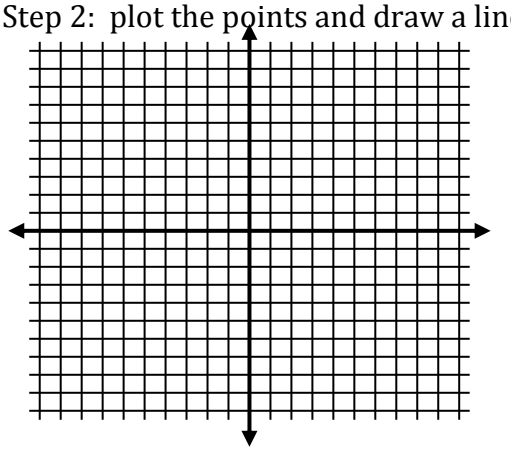
Example: Graph the equation $x + 2y = 4$

Step 1: Find the intercepts

x intercept: *y* intercept:

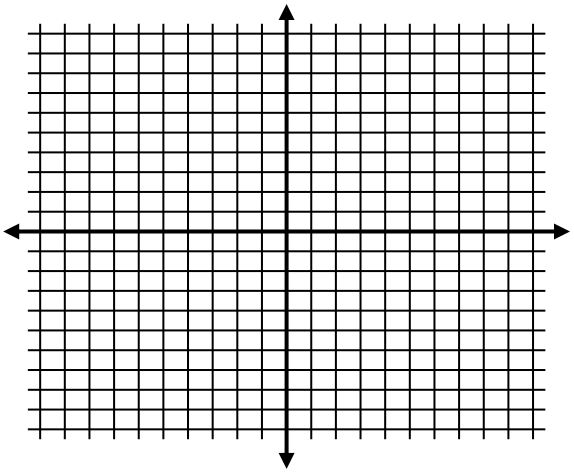
Coordinate: Coordinate:

Step 2: plot the points and draw a line through the points

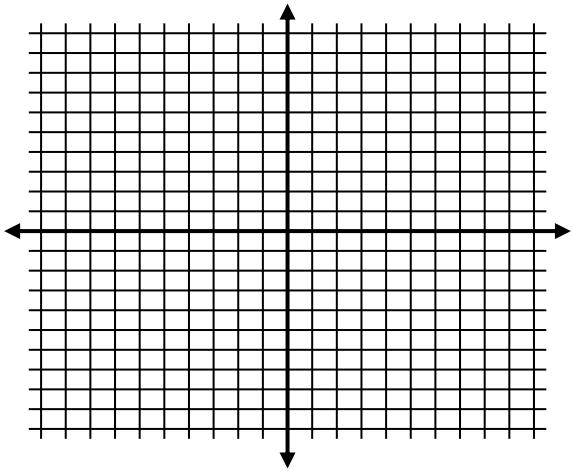


Try These:

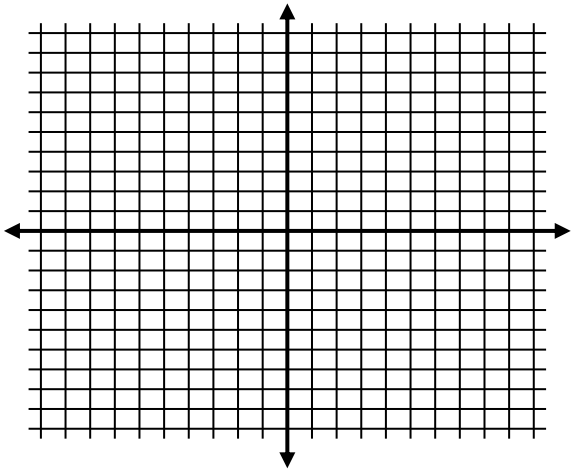
1) $4x - 7y = 28$



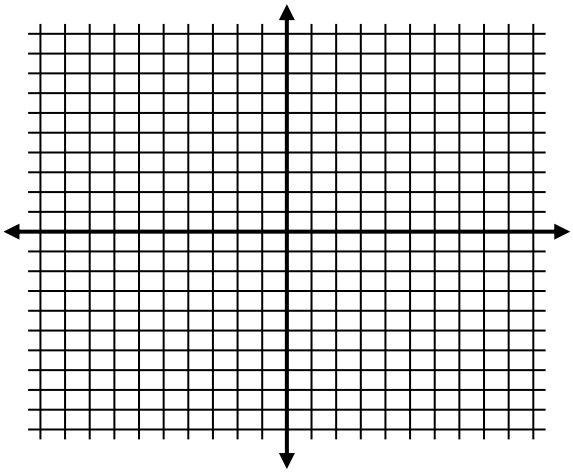
2) $3x + 2y = 6$



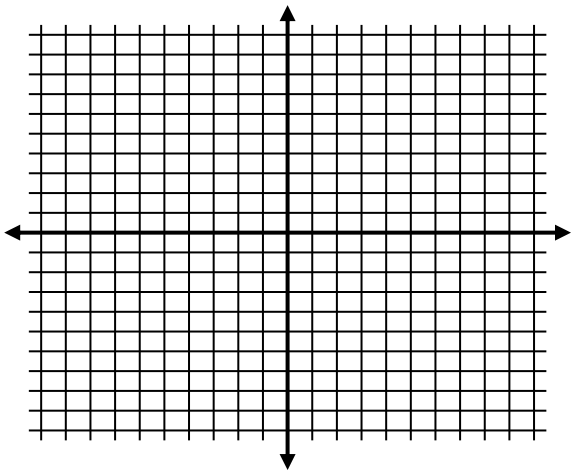
3) $4x - 2y = 10$



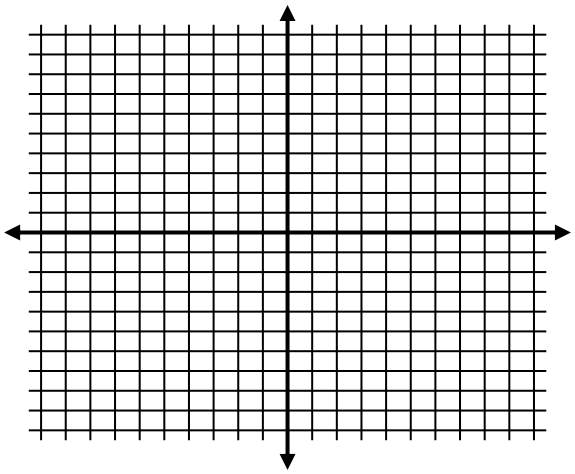
4) $-3x + 5y = -15$



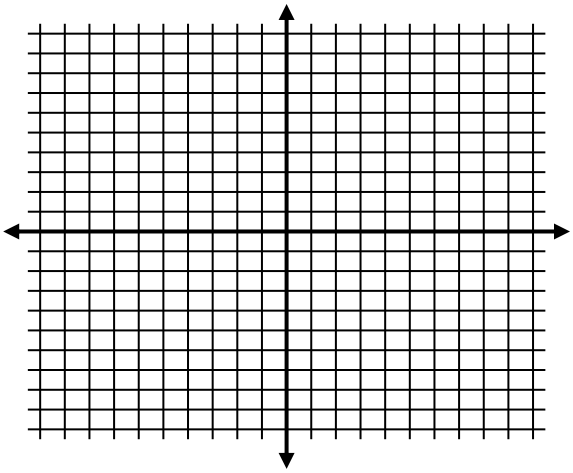
5) $x + 2y = 4$



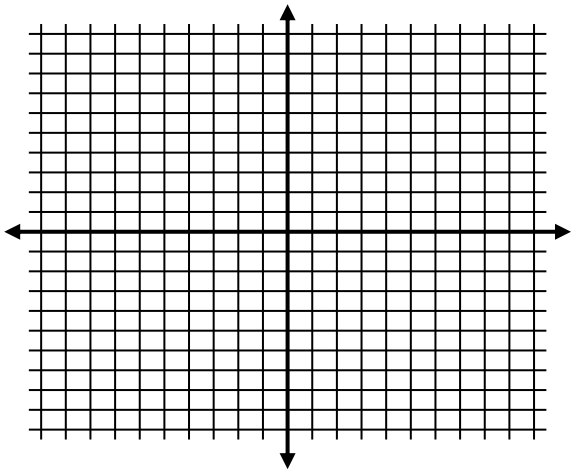
6) $3x - 4y = 12$



7) $y = x - 4$



8) $y = 2x + 6$



Word Problems:

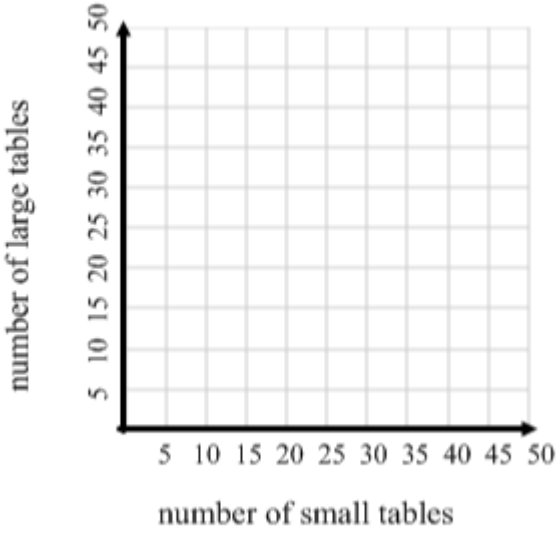
1) You are helping plan an awards banquet for your school and you need to rent tables to seat 180 people. Tables come in two sizes. Small tables seat 4 people and large tables seat 6 people.

a) Let x equal the number of small tables and y equal the number of large tables. Write an equation to represent the situation.

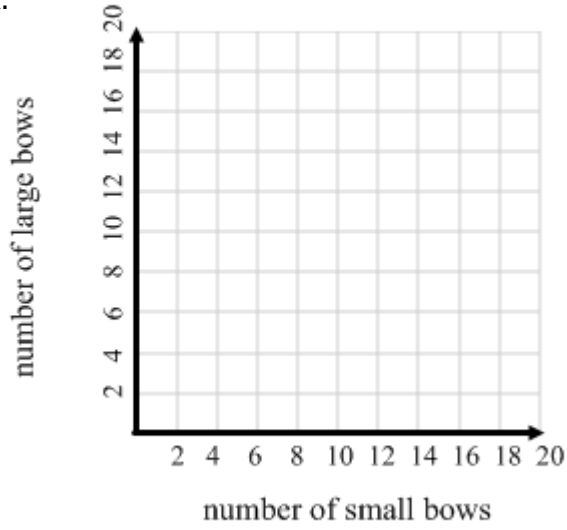
b) Graph the equation.

c) What do the intercepts mean?

d) Give 4 possible combinations of small and large tables you could use.



2) You make and sell decorative bows. You sell small bows for $3 and large bows for $5. You want to earn $60. Write an equation to represent the situation. Graph your equation. Give two possible combinations of small and large bows you could sell.



3) A submersible is designed to explore the ocean floor at –13,000 feet. The submersible ascends to the surface at a rate of 60 feet/minute. The equation:

$$e = 650t - 13000$$

models this situation, where e is elevation and t is time (in minutes) since it began to ascend.

a) Graph the equation.

b) Explain the meaning of the x and y intercepts.

c) Identify the domain and range.