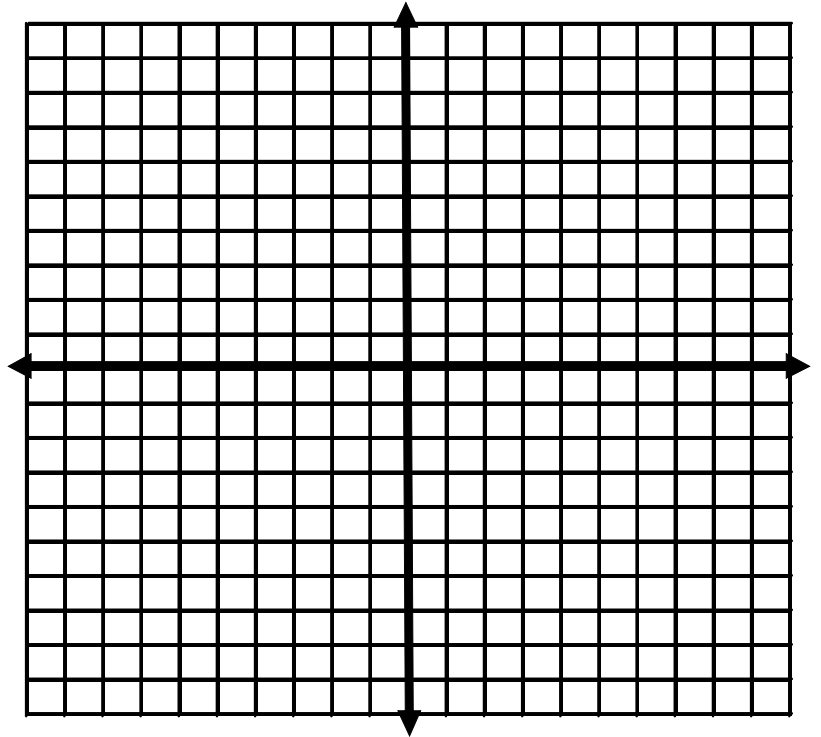**Essential Question:** What relationships can we discover between parallel and perpendicular lines?

Do Now: **Graph each linear function below using the slope-intercept method. Check your work with your graphing calculator.**
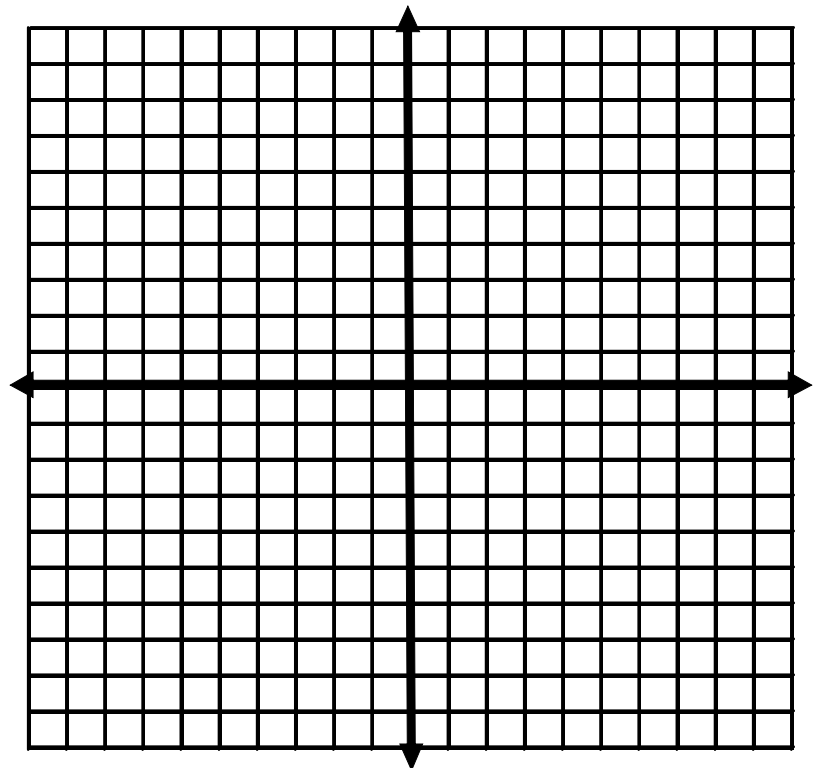
A) $3y = 6x + 15$

y-intercept: _____

slope: _____

B) $-3x - 2y = 8$

y-intercept: _____

slope: _____

Investigating the Slope and Y-intercept of Linear Relationships

Turn and Talk

On the same set of axes, graph the following 3 lines. Analyze the lines and complete a – c.
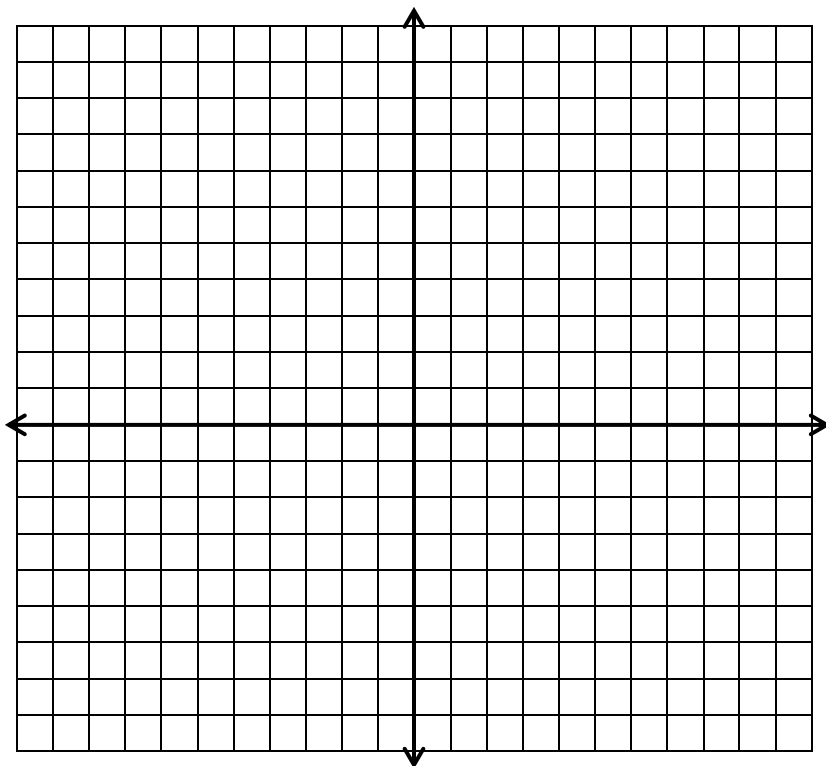
y = 2x
m=___ b=___

y = 2x – 3
m=___ b=___

y = 2x + 4
m=___ b=___

Think about this...

a) Compare and contrast the lines. What's the same? What's different?

b) Can a conclusion be made about the relationship of the lines and their slopes?

c) What does the y-intercept of each line determine?

STOP

Graph $y = -\frac{1}{2}x$ on the coordinate plane above.

- Does this line intersect the other lines above? In what way?

- What is the relationship between the slopes of the 3 lines above and the slope of $y = -\frac{1}{2}x$?

The **TAKE AWAY**

Parallel lines have _____

_____.

Perpendicular lines have _____

_____.