

Which is Greater? — Using Linear Functions

The graphs for all these functions are straight lines:

$$y = -2x - 5$$

$$y = -x - 5$$

$$y = x - 5$$

$$y = 2x - 5$$

$$y = -2x - 2$$

$$y = -x - 2$$

$$y = x - 2$$

$$y = 2x - 2$$

$$y = -2x + 1$$

$$y = -x + 1$$

$$y = x + 1$$

$$y = 2x + 1$$

$$y = -2x + 4$$

$$y = -x + 4$$

$$y = x + 4$$

$$y = 2x + 4$$

1. Find pairs of functions from this list whose graphs do not intersect.
2. Find pairs of functions from this list whose graphs intersect to the left of the y-axis.
3. Find pairs of functions from this list whose graphs intersect to the right of the y-axis.
4. Find pairs of functions from this list whose graphs intersect on the y-axis.
5. How are these questions related to “Which is Greater?”
6. Is there a way to predict *without actually graphing*
 - a. whether the graphs will meet?
 - b. whether they will meet on the y-axis?
 - c. whether they will meet on the left or right of the y-axis?