

Contrasting Equations

Contrasting Equations

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Summary	Students write equations for three graphs and examine their slopes by comparing and contrasting the graphs. Students also look at the same functions graphed on differently scaled coordinate planes.
Goals	<ol style="list-style-type: none">1. Students will compare and contrast graphs of the same functions on differently scaled coordinate planes.2. Students will generate equations for graphs, and discuss differences in slope.
Materials	Handouts
Duration	30 minutes
Keywords	Compare/Contrast Functions Full Class Discussion Linear Functions Production of Equations Slope Small Group Work

Activity Plan:

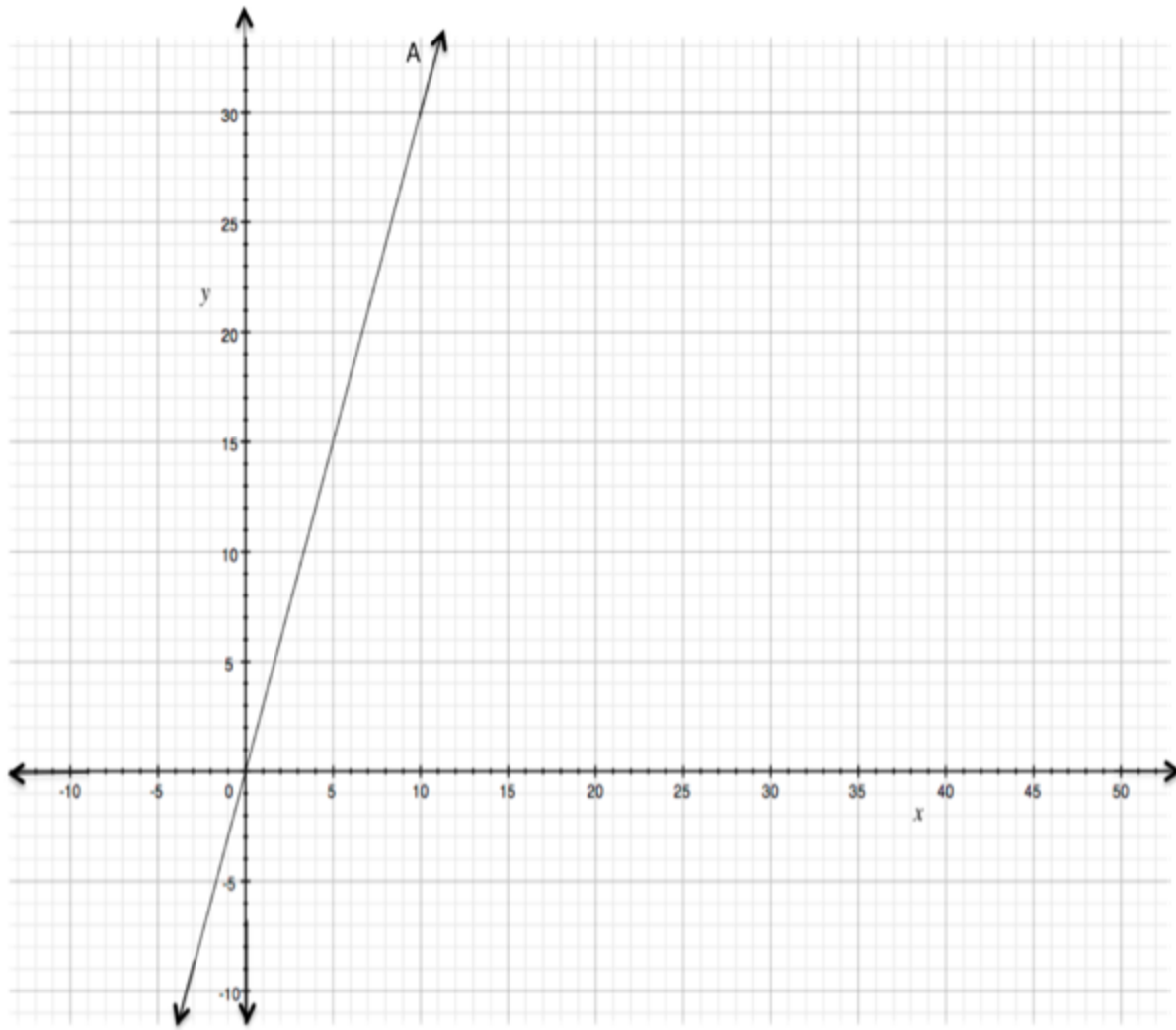
1. The students will be given a handout (Handout Page 1) with one line (line A) on a coordinate plane.
2. The class will discuss the graph and work together to find the equation for line A.
3. Divide the class into small groups. Distribute one of three handouts (Handout Pages 2 to 4) to each group. Each of these handouts contains the same three functions, but each handout has the axes drawn using different scales. As a result, on some the lines intersect; on others they do not. Each group works to find the equation for each of the lines. They then determine the slope for each line and decide which line has the greatest slope.

4. Have the students present and explain how they got their equations to the class.
5. Have the students discuss the equations and slopes of the graphs across different handouts.
6. Discussion should focus on:
 - a. Similarities and differences across equations within each handout and across handouts.
 - b. Student explanations of how they determined the slopes for the equations. Can they interpret (or 'see') greater or lesser slopes by looking at the graphs? Can they determine whether or not any of these lines will ever intersect?
 - c. How can students compare graphs drawn on different axis scales?

Handout: Contrasting Equations

(Page 1)

Name: _____ Date: _____

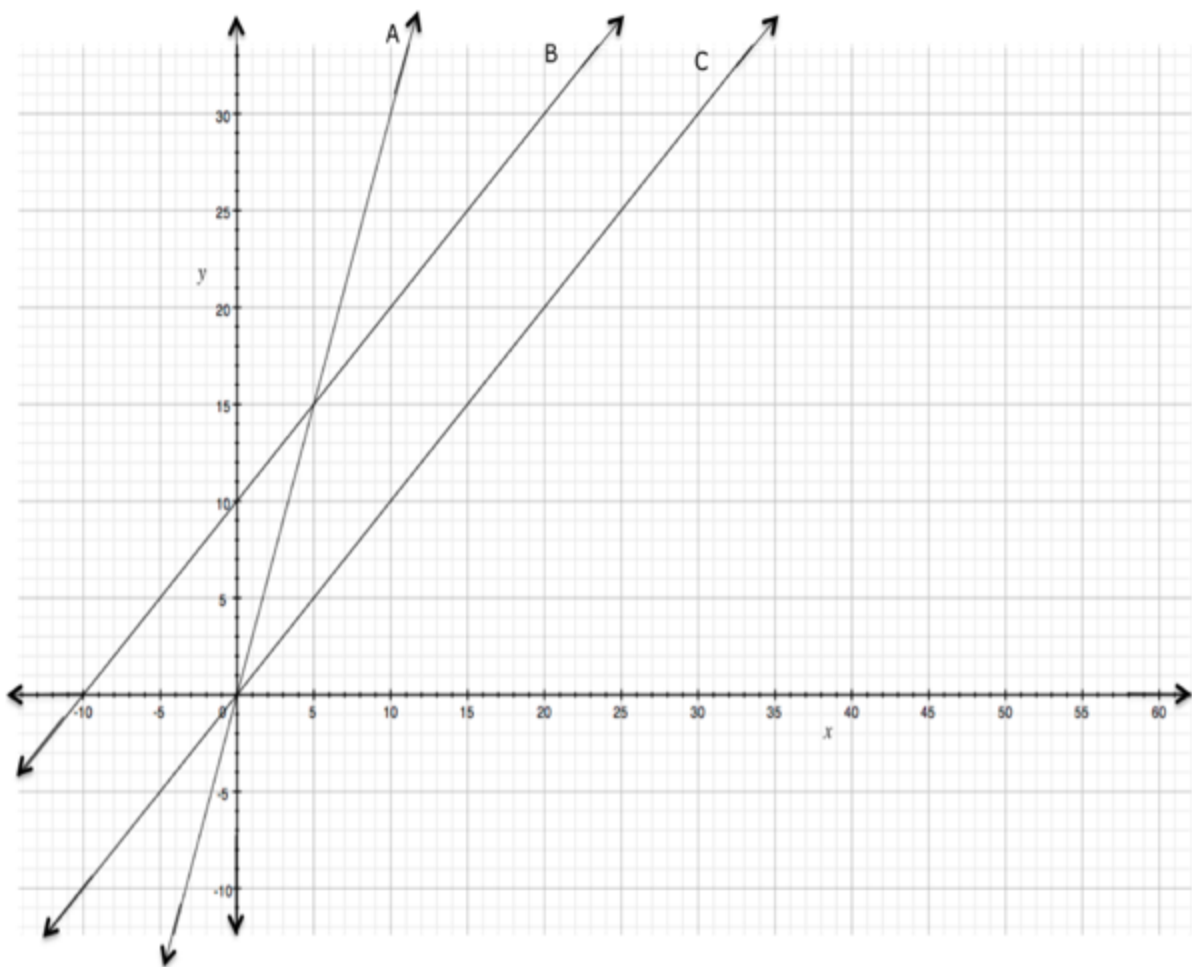


Equation for A: _____

Handout: Contrasting Equations

(Page 2)

Name: _____ Date: _____

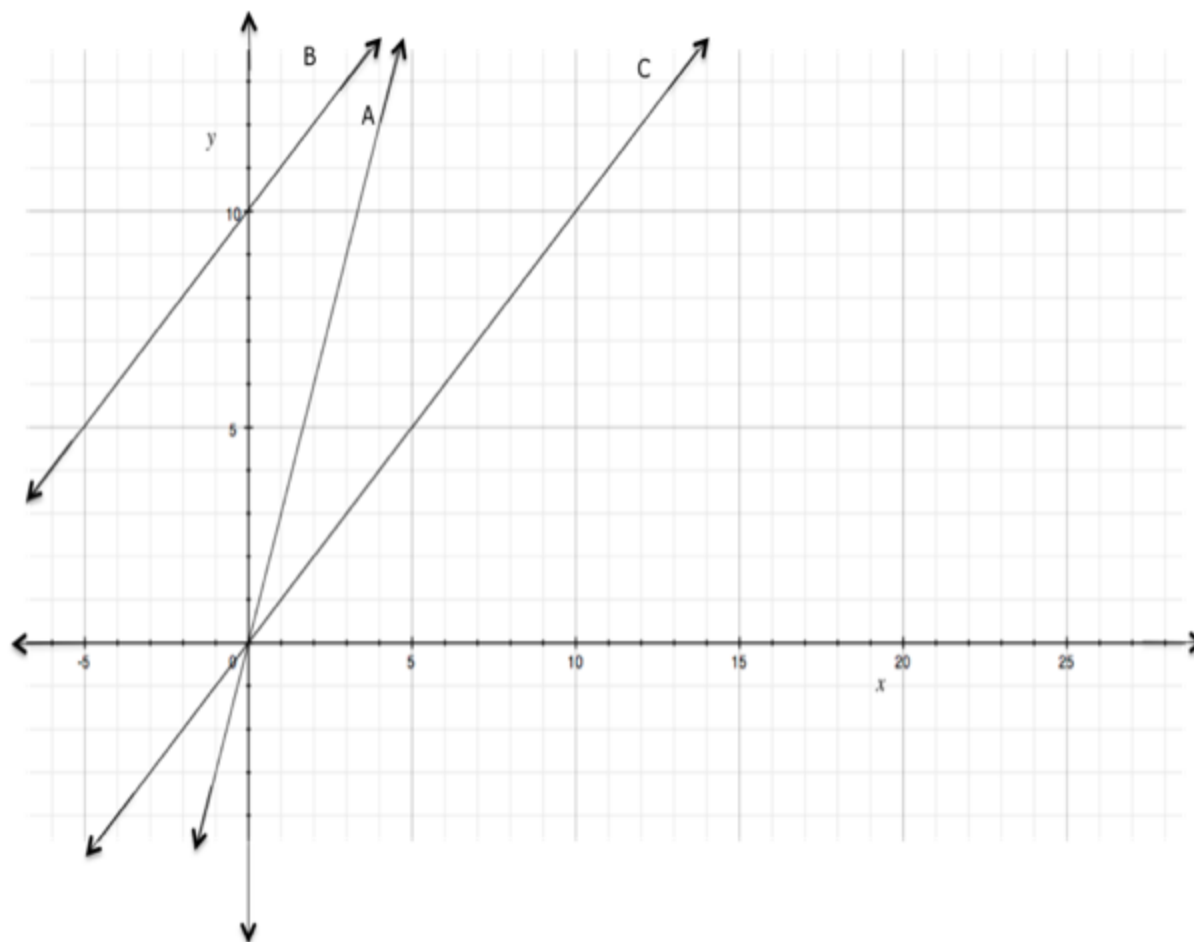


Equation for A: _____ Slope: _____

Equation for B: _____ Slope: _____

Equation for C: _____ Slope: _____

Name: _____ Date: _____



Equation for A: _____ Slope: _____

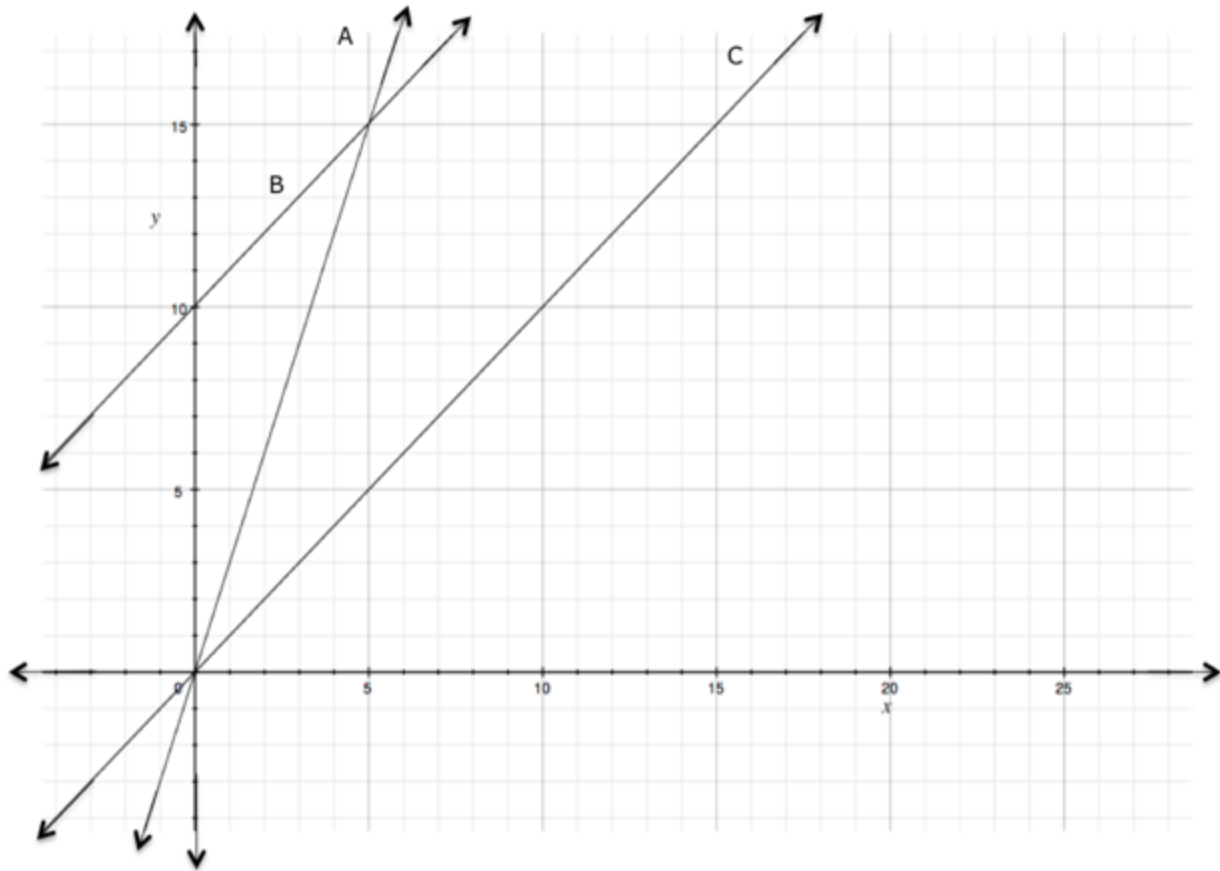
Equation for B: _____ Slope: _____

Equation for C: _____ Slope: _____

Handout: Contrasting Equations

(Page 4)

Name: _____ Date: _____



Equation for A: _____ Slope: _____

Equation for B: _____ Slope: _____

Equation for C: _____ Slope: _____