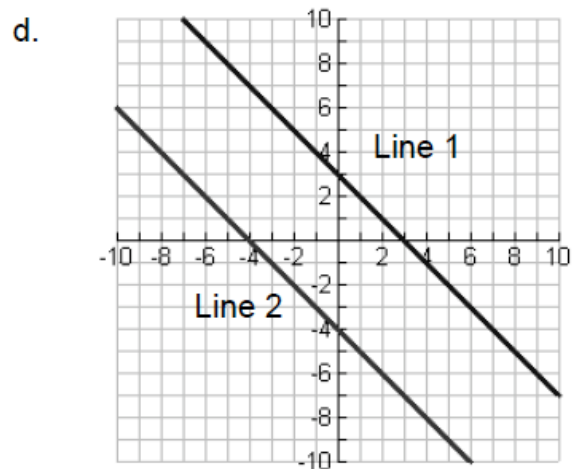
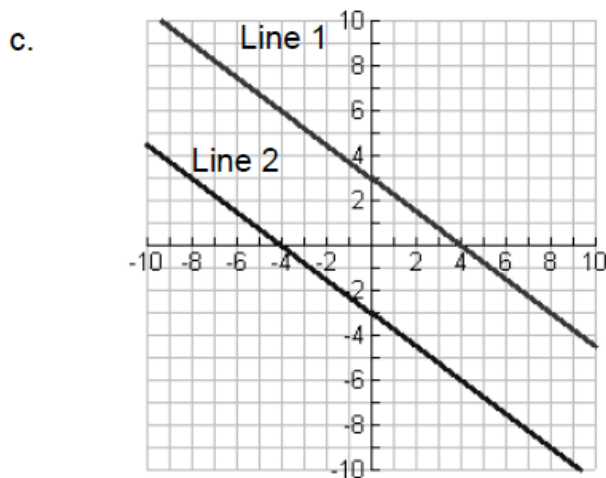
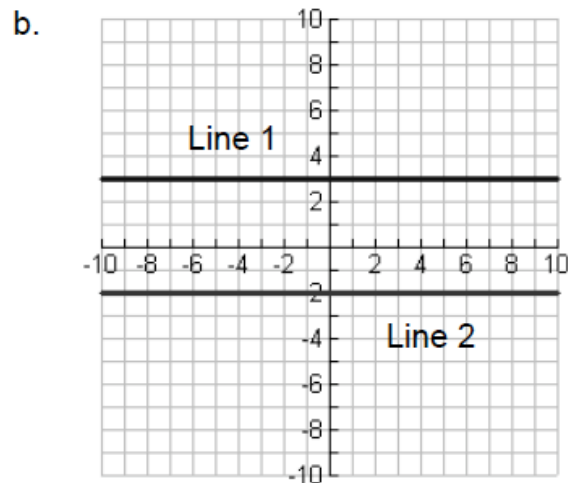
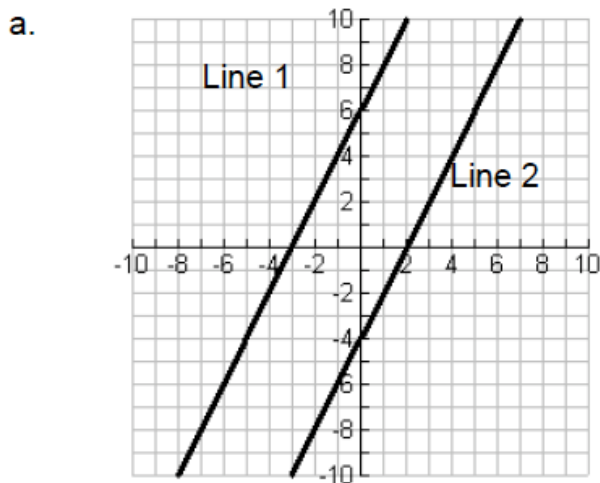


Exploring Slopes of Parallel and Perpendicular Lines

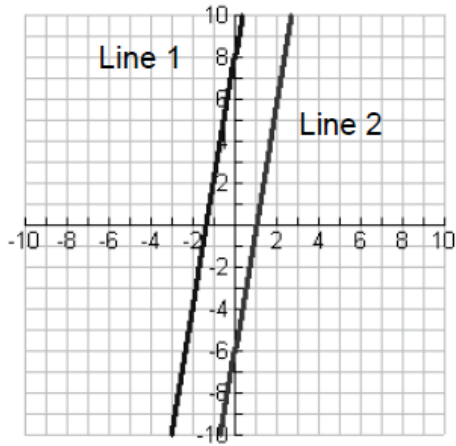
This exercise will investigate the slopes of parallel and perpendicular lines. The investigation will be done first on paper and then verified on Geometers Sketch Pad as a whole group.

Investigation I: Parallel Lines

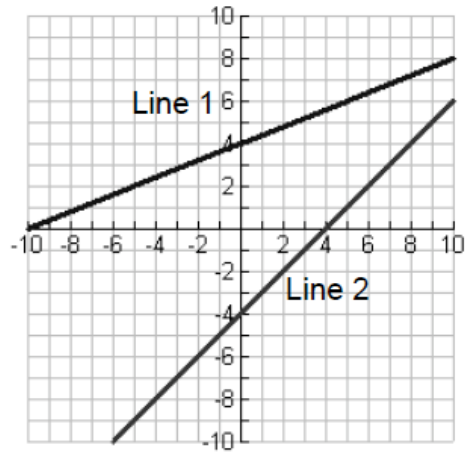
- Each graph below contains pairs of lines. Calculate the slope of each line, and record the results in the table on the next page.



e.



f.



	Slope 1	Slope 2
a		
b		
c		
d		
e		
f		

2. What pattern do you notice about the slopes?

3. Do all of the slopes fit the pattern?

Why not?

4. Write a conjecture about the relationship between the slopes of parallel lines.

Whole Group

5. Using Geometr's Sketchpad to verify your conjecture. Create four different pairs of parallel lines. Then measure the slopes. Record the results below.

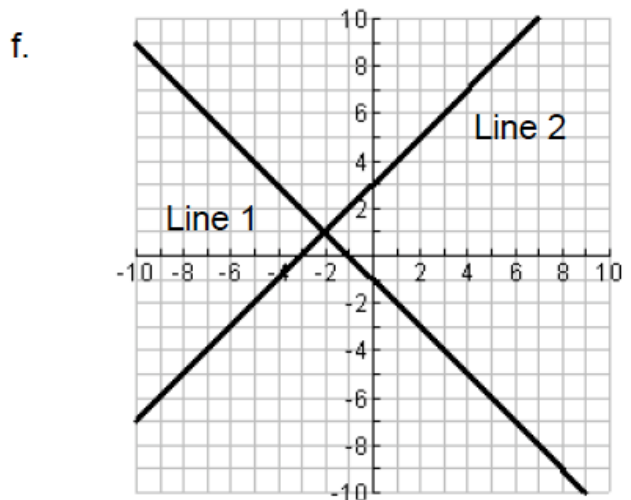
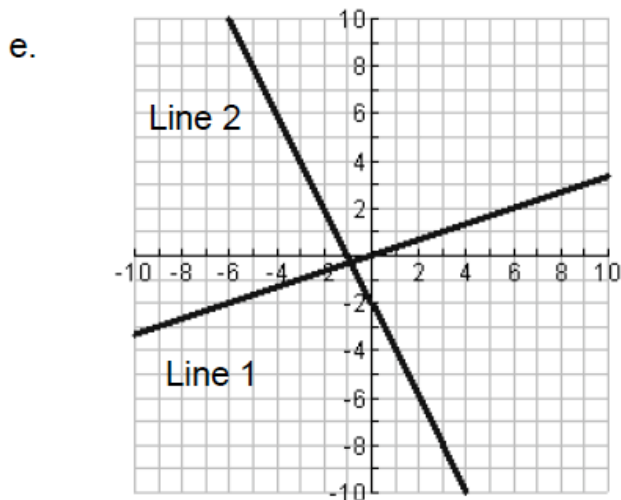
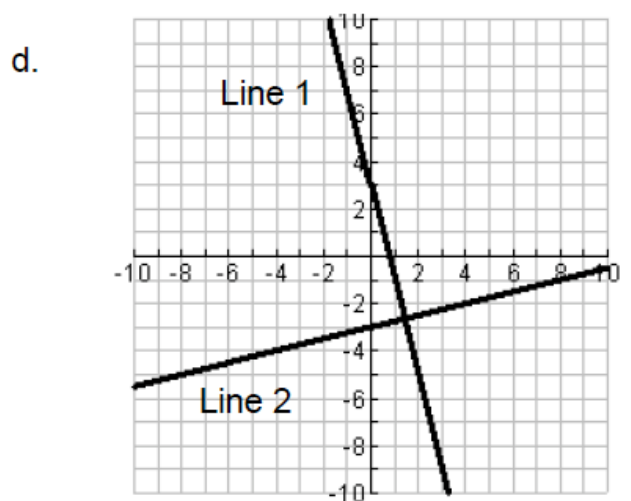
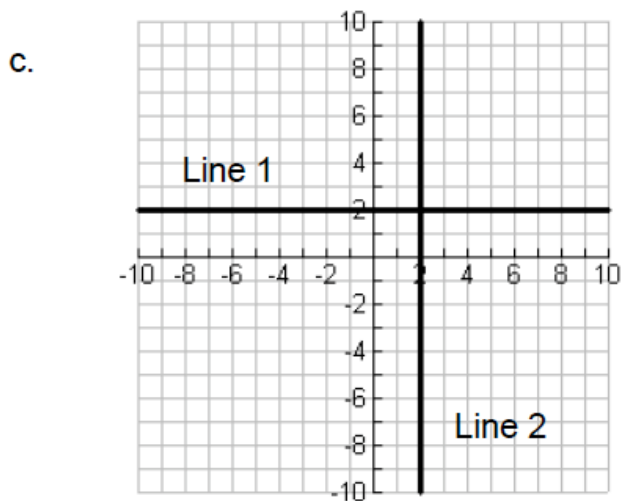
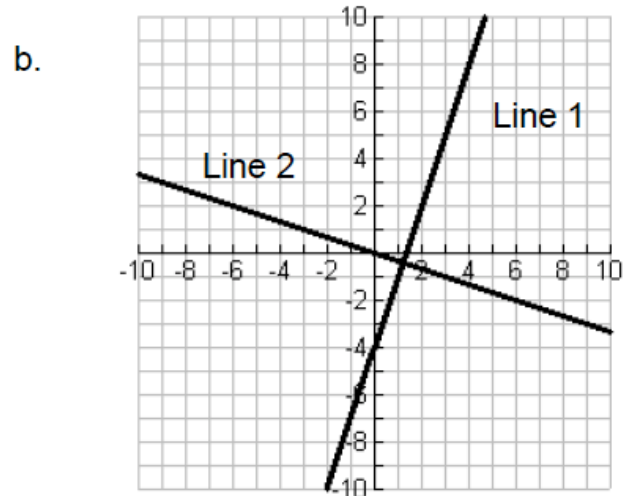
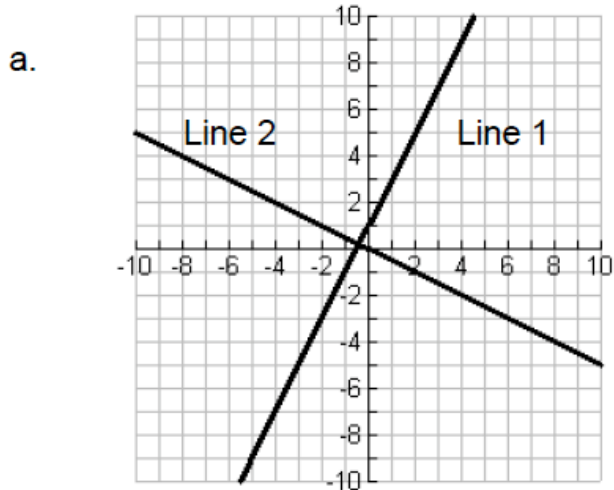
	Slope 1	Slope 2
1		
2		
3		
4		

6. Does this confirm your conjecture? _____

Explain. _____

Investigation II: Perpendicular Lines

1. Each graph below contains pairs of lines. Calculate the slope of each line, and record the results in the table on the next page.



	Slope 1	Slope 2
a		
b		
c		
d		
e		
f		

2. What pattern do you notice about the slopes?

3. Do all of the slopes fit the pattern? _____

Why not? _____

4. Write a conjecture about the relationship between the slopes of perpendicular lines.

5. How do the slopes of the lines in the third pair of lines fit your conjecture? _____

6. How do the slopes of the lines in the fourth pair of lines fit your conjecture?

7. As a whole group use Geometr's Sketchpad to verify your conjecture. Create four different pairs of perpendicular lines. Use the slope tool to find the slope of each line.

	Slope 1	Slope 2
a		
b		
c		
d		

8. Does this confirm your conjecture? _____

Explain. _____
