

Technology **ACTIVITY** Use after Lesson 3.4

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Keystrokes

3.4 Investigate Slopes

MATERIALS • graphing calculator or computer

QUESTION How can you verify the Slopes of Parallel Lines Postulate?

You can verify the postulates you learned in Lesson 3.4 using geometry drawing software.

EXAMPLE Verify the Slopes of Parallel Lines Postulate

STEP 1 *Show axes* Show the x -axis and the y -axis by choosing Hide/Show Axes from the F5 menu.

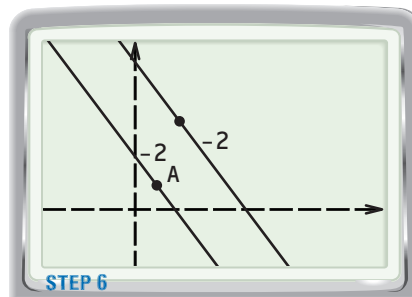
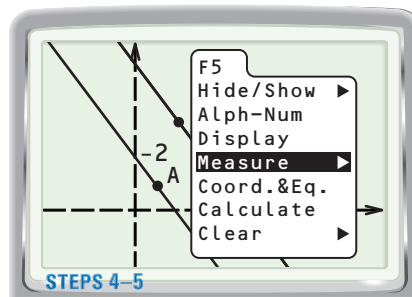
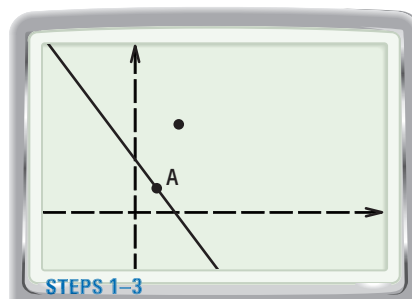
STEP 2 *Draw line* Draw a line by choosing Line from the F2 menu. Do not use one of the axes as your line. Choose a point on the line and label it A .

STEP 3 *Graph point* Graph a point not on the line by choosing Point from the F2 menu.

STEP 4 *Draw parallel line* Choose Parallel from the F3 menu and select the line. Then select the point not on the line.

STEP 5 *Measure slopes* Select one line and choose Measure Slope from the F5 menu. Repeat this step for the second line.

STEP 6 *Move line* Drag point A to move the line. What do you expect to happen?



PRACTICE

1. Use geometry drawing software to verify the Slopes of Perpendicular Lines Postulate.
 - a. Construct a line and a point not on that line. Use Steps 1-3 from the Example above.
 - b. Construct a line that is perpendicular to your original line and passes through the given point.
 - c. Measure the slopes of the two lines. Multiply the slopes. What do you expect the product of the slopes to be?
2. **WRITING** Use the arrow keys to move your line from Exercise 1. *Describe* what happens to the product of the slopes when one of the lines is vertical. *Explain* why this happens.