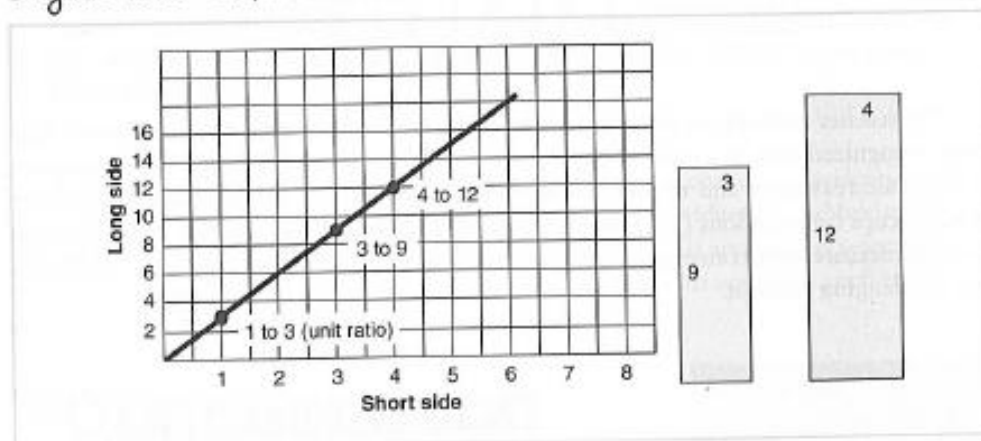


### Activity 11.8 RECTANGLE RATIOS—REVISITED GRAPHICALLY



Have students graph the data from a collection of equal ratios that they have scaled or discussed (see Blackline Master 1, 3, or 42). For example, the graph in Figure 11.10 is based on the ratios of two sides of similar rectangles. If only a few ratios have actually been plotted, the graph can be drawn carefully and then used to determine other equivalent ratios. In the rectangle example, students can draw rectangles with sides determined by the graphs. Then they can compare them with the original rectangles. A unit ratio can be found by locating the point on the line at  $x = 1$  or at  $y = 1$ . Ask students to find the rate each way. Also see if students can find a rectangle that has a non-integer side length (e.g.,  $4\frac{1}{2}$  units). Then ask students how, if they know the short side, they can find the long side (and vice versa).

Figure 11.10 Graphs show the ratios of sides in similar rectangles.



Graphs provide another way of thinking about proportions, and they connect proportional thought to algebraic interpretations. All graphs of equivalent ratios fall along straight lines that pass through the origin. If the equation of one of these lines is written in the form  $y = mx$ , the slope  $m$  is always one of the equivalent ratios.

From Van de Walle et. al. (2014). *Teaching Student-Centered Mathematics Grades: Developmentally Appropriate Instruction for Grades 6 – 8 (2<sup>nd</sup> Ed.)*. Toronto: Pearson Education, Inc. (p. 211).