

## Exercise 14

Given below are descriptions of two lines. Find the slopes of Line 1 and Line 2. Is the pair of lines parallel, perpendicular, or neither?

Line 1: Passes through  $(-2, -6)$  and  $(3, 14)$

Line 2: Passes through  $(2, 6)$  and  $(4, 14)$

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### Solution

Calculate the slope of Line 1.

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{14 - (-6)}{3 - (-2)} = \frac{20}{5} = 4$$

Calculate the slope of Line 2.

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{14 - 6}{4 - 2} = \frac{8}{2} = 4$$

Because the slopes are identical, the lines are parallel.

