

# RATE OF CHANGE: GRAPHS

The graph of a linear function is a straight line with a constant rate of change. You can find the rate of change of a linear function, or the slope, using this formula:

$$\text{Rate of change} = \frac{\text{change in } y}{\text{change in } x} = \frac{\text{rise}}{\text{run}}$$

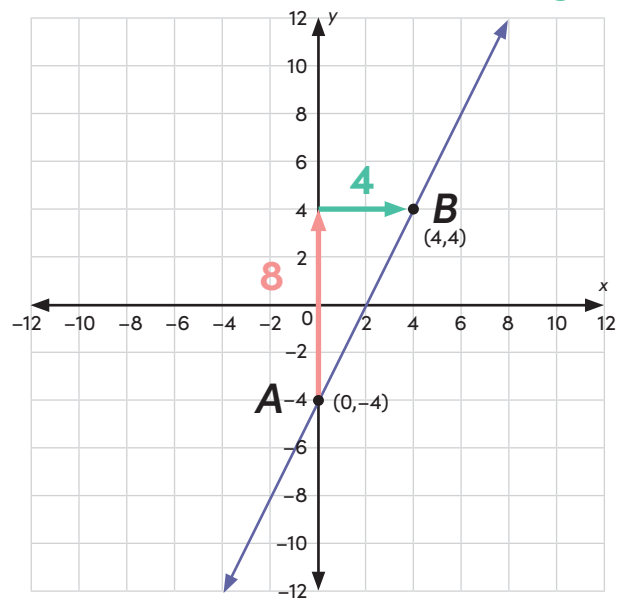
To find the rate of change on this graph, pick two points on the line that are easy to identify.

A is at (0, -4). B is at (4, 4).

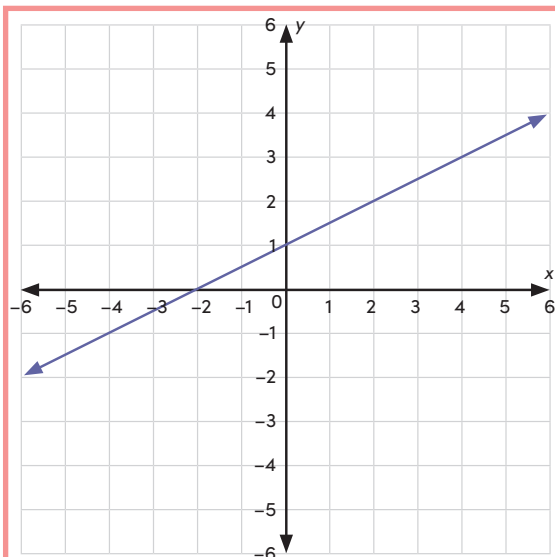
To move from point A to point B, first find the rise. Since the y-axis has a scale of 2, move up four increments of 2 to get a rise of **8**. Since the x-axis has a scale of 2, move right two increments of 2 to get a run of **4**.

Write the rate of change. Make sure to simplify your answer.

$$\text{Rate of change} = \frac{\text{rise}}{\text{run}} = \frac{8}{4} = 2$$



**Try it yourself!** Find the rate of change of each linear function below. Then circle the greater rate of change in each row. **All fractions are written in simplest form.**



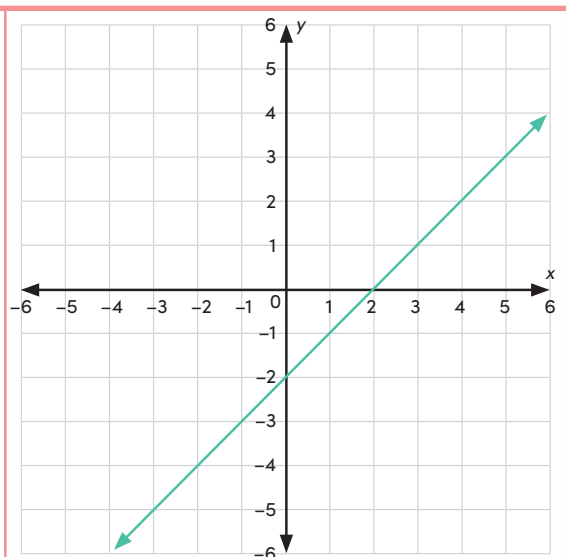
Rate of change =

$$\frac{1}{2}$$



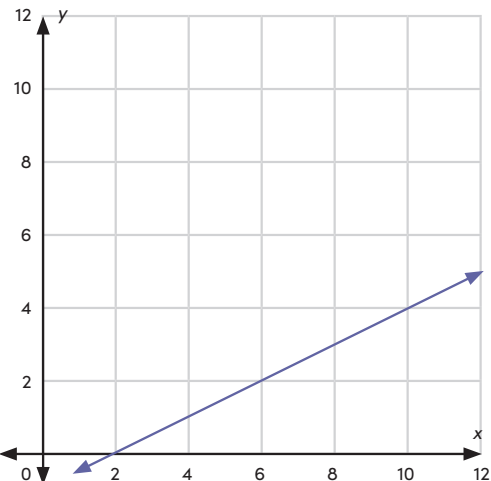
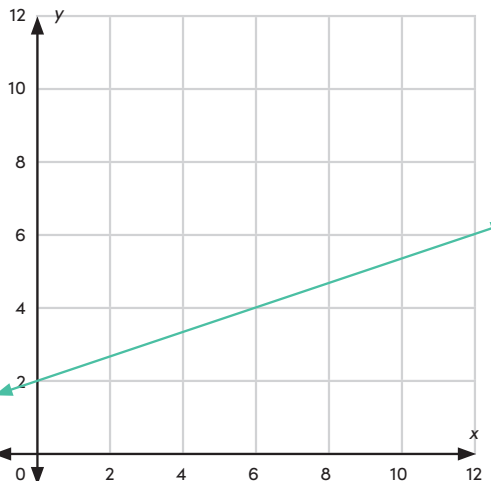
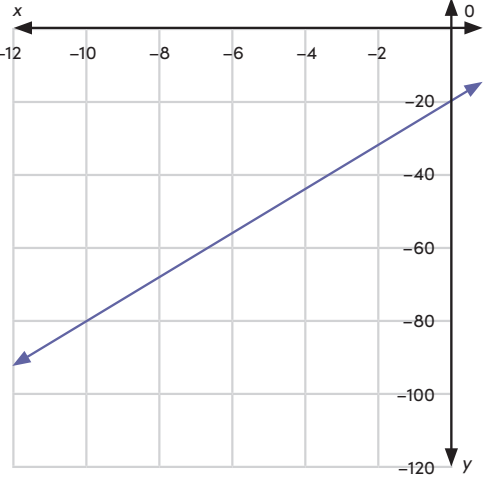
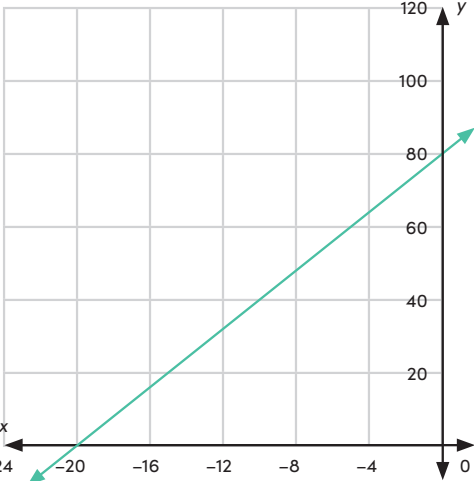
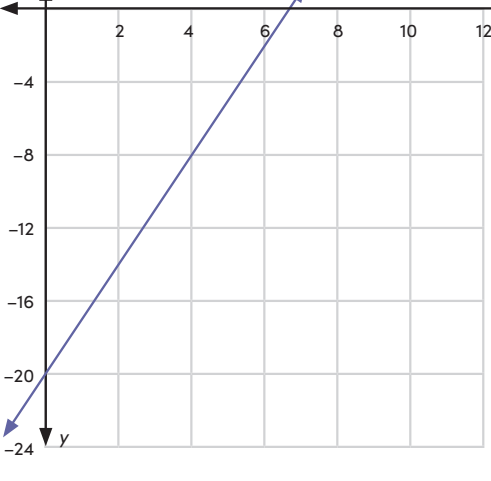
Rate of change =

$$1$$



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**Keep going!** Find the rate of change of each linear function below. Then circle the greater rate of change in each row. **All fractions are written in simplest form.**

	<p>←</p> <p>Rate of change = <u><math>\frac{1}{2}</math></u></p> <p>→</p> <p>Rate of change = <u><math>\frac{1}{3}</math></u></p>	
	<p>←</p> <p>Rate of change = <u>6</u></p> <p>→</p> <p>Rate of change = <u>4</u></p>	
	<p>←</p> <p>Rate of change = <u>3</u></p> <p>→</p> <p>Rate of change = <u>5</u></p>	