

5.6 Direct Variation

EQ: How can you use a graph to show the relationship between two quantities that vary directly?

Direct Variation: $y = kx$ (x, y)

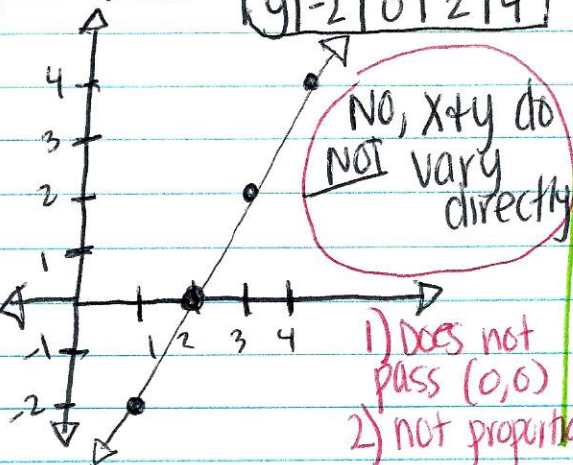
Your equation must be in this form $y = kx$
 y-value \uparrow any number $k \neq 0$ \uparrow x-value

* On a graph, $y = kx$ will create a line.

Identify if x and y vary directly

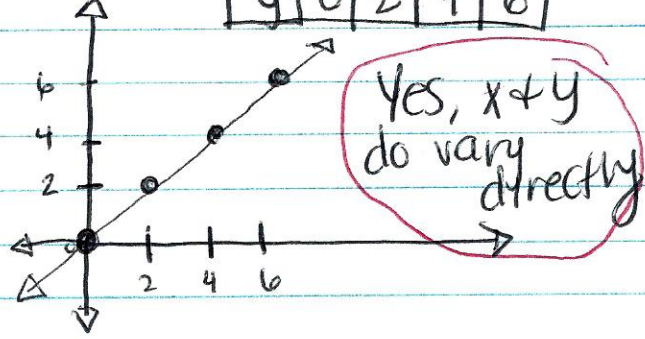
Example 1:

x	1	2	3	4
y	-2	0	2	4



Example 2:

x	0	2	4	6
y	0	2	4	6



Rules:

1. Line must pass through (0,0)
2. x & y must be proportional
3. Your equation must be in the form $y = kx$

* We might have to reorganize the equation by solving for y.

Example 3: Tell if x & y vary directly

$$y + 1 = 2x$$

$$\begin{array}{r} -1 \quad -1 \\ \hline y = 2x - 1 \end{array}$$

formula $y = kx$ compare

No, x & y do not vary directly

* Always solve for y, first if necessary

$$\frac{2}{1} \cdot \frac{1}{2} y = x \cdot 2$$

compare $y = 2x$
 $y = kx$

Yes, x & y varies directly