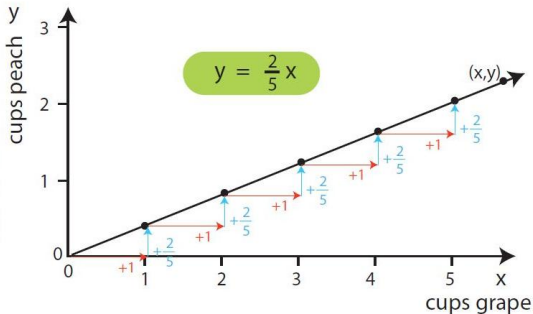


# MP8: Look for and express regularity in repeated reasoning

for every 5 cups grape juice, mix in 2 cups peach juice.

x cups grape	y cups peach
(0)	(0)
5	2
1	$\frac{2}{5}$
2	$2 \cdot \frac{2}{5}$
3	$3 \cdot \frac{2}{5}$
4	$4 \cdot \frac{2}{5}$
x	$x \cdot \frac{2}{5}$

Red arrows on the left indicate a constant increase of +1 in x. Blue arrows on the right indicate a constant increase of  $+\frac{2}{5}$  in y.



for each 1 unit you move to the right, move up  $\frac{2}{5}$  of a unit.

when you go 2 units to the right, you go up  $2 \cdot \frac{2}{5}$  units.

when you go 3 units to the right, you go up  $3 \cdot \frac{2}{5}$  units.

when you go 4 units to the right, you go up  $4 \cdot \frac{2}{5}$  units.

when you go  $x$  units to the right, you go up  $x \cdot \frac{2}{5}$  units.

starting from  $(0, 0)$ , to get to a point  $(x, y)$  on the graph, go  $x$  units to the right, so go up  $x \cdot \frac{2}{5}$  units.

therefore  $y = x \cdot \frac{2}{5}$