

③

Parts of red pigment x_i	1	x_2
vol. of base (in ml) y_i	75	1800

x and y are directly proportional

$$\therefore \frac{x_1}{y_1} = \frac{x_2}{y_2}$$

$$\frac{1}{75} = \frac{x_2}{1800}$$

$$\Rightarrow x_2 = \frac{1800}{75} \quad \begin{matrix} 24 \\ \cancel{24} \end{matrix}$$

$$\Rightarrow x_2 = 24$$

④

Time (in h) x_i	6	5
no. of bottles y_i	840	y_2

x and y are directly proportional

$$\therefore \frac{x_1}{y_1} = \frac{x_2}{y_2}$$

$$\frac{6}{840} = \frac{5}{y_2}$$

$$\Rightarrow y_2 = \frac{5 \times 840}{6} \quad \begin{matrix} 140 \\ \cancel{6} \end{matrix}$$

$$\Rightarrow y_2 = 700$$