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Mass of sugar (in kg) x_i	2	5	1.2
no. of crystals y_i	9×10^6	y_2	y_3

x and y vary directly

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

$$\frac{2}{9 \times 10^6} = \frac{5}{y_2}$$

$$\begin{aligned} \Rightarrow y_2 &= \frac{5 \times 9 \times 10^6}{2} \\ &= 22.5 \times 10^6 \\ &= 2.25 \times 10^7 \end{aligned}$$

$$\frac{x_1}{y_1} = \frac{x_3}{y_3}$$

$$\frac{2}{9 \times 10^6} = \frac{1.2}{y_3}$$

$$\begin{aligned} \Rightarrow y_3 &= \frac{1.2 \times 9 \times 10^6}{2} \\ &= 5.4 \times 10^6 \end{aligned}$$

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actual distance covered (in cm) x_i	18×10^5	72×10^5
distance covered on Map (in cm) y_i	1	y_2

x and y vary directly

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

$$\frac{18 \times 10^5}{1} = \frac{72 \times 10^5}{y_2}$$

$$\Rightarrow y_2 = 4$$