

Ques

$$a, b \propto 2$$

$$= \frac{6}{2} = 3$$

$$SD = \frac{2}{\sqrt{3}}, \bar{x} = 3$$

$$\text{then } ab = ?$$

given
③

$$\bar{x} = \frac{a + b + 2}{3 - \text{freq}/n}$$

$$3 = \frac{a + b + 2}{3}$$

$$9 = a + b + 2 \quad \text{--- ①}$$

Given - $SD = \sqrt{\frac{\sum x^2}{n} - (\bar{x})^2}$

$$\frac{2}{\sqrt{3}} = \sqrt{\frac{a^2 + b^2 + 4}{3} - 9}$$

----- taking square

$$\frac{4}{3} = \frac{a^2 + b^2 + 4}{3} - 9$$

$$a^2 + b^2 + 4 = \frac{4}{3} \times 3 + 9$$

$$= 13 - 4$$

$$a^2 + b^2 = 9$$

— LCM

$$\frac{4}{3} = \frac{a^2 + b^2 + 4 - 27}{3}$$

$$a^2 + b^2 = 27$$

$$\boxed{a^2 + b^2 = 27} \text{ --- (2)}$$

squaring both side in eqn ①

$$(a+b)^2 = 7$$

$$\textcircled{2} \quad \underline{\underline{a^2 + b^2 + 2ab = 49}}$$

$$27 + 2ab = 49$$

$$\boxed{ab = 11} \quad \checkmark$$