

$$7. \quad 2x + 3y - 8 = 0$$

$$2y + x - 5 = 0$$

$$\text{Var}(x) = 4 \quad \text{find } \text{Var}(y)$$

$$2y + x - 5 = 0$$

$$2y = -x + 5$$

$$\text{Var}(2y) = \text{Var}(-x) + \text{Var}(5)$$

$$4 \text{Var}(y) = \text{Var}(x)$$

$$\text{Var}(y) = 1$$

$$\text{Var}(y) = 1$$

b) Co-efficient of determination of x & y .

$$= (\text{Corr Coefficient}(x, y))^2$$

$$= \left(\frac{\text{Cor}(x, y)}{\sqrt{\text{Var}(x)} \sqrt{\text{Var}(y)}} \right)^2 = \frac{(\text{Var}(xy) - \text{Var}(x) \text{Var}(y))^2}{\text{Var}(x) \text{Var}(y)}$$

c)