

Question 5

$$\begin{aligned} 5x + 3y &= 39 \\ 8x - 2y &= 42 \end{aligned}$$

$$\begin{aligned} x &= 6 \\ y &= 3 \end{aligned}$$

$$8x = 42 + 2y$$

$$x = \frac{21}{4} + \frac{1}{4}y$$

$$\therefore 5 \left(\frac{21}{4} + \frac{1}{4}y \right) + 3y = 39$$

$$\frac{105}{4} + \frac{5}{4}y + 3y = 39$$

$$105 + 17y = 156$$

$$17y = 156 - 105$$

$$17y = 51$$

$$\therefore y = 3$$

$$x = \frac{21}{4} + \frac{1}{4} \times 3$$

$$x = \frac{21}{4} + \frac{3}{4}$$

$$\therefore x = 6$$