



Exercise 3C

Question 4:

$$6x - 5y - 16 = 0$$

$$7x - 13y + 10 = 0$$

By cross multiplication we have

$$\begin{aligned} \therefore \frac{x}{[(-5) \times 10 - (-16) \times (-13)]} &= \frac{y}{[(-16 \times 7) - 10 \times 6]} = \frac{1}{[6 \times (-13) - (-5) \times 7]} \\ \Rightarrow \frac{x}{-50 - 208} &= \frac{y}{-112 - 60} = \frac{1}{-78 + 35} \\ \Rightarrow \frac{x}{-258} &= \frac{y}{-172} = \frac{1}{-43} \\ \Rightarrow \frac{x}{-258} &= \frac{1}{-43}, \frac{y}{-172} = \frac{1}{-43} \\ x &= \frac{-258}{-43} = 6, y = \frac{-172}{-43} = 4 \end{aligned}$$

Hence the solution is $x = 6, y = 4$

Question 5:

$$3x + 2y + 25 = 0$$

$$2x + y + 10 = 0$$

By cross multiplication, we have

$$\begin{aligned} \therefore \frac{x}{[2 \times 10 - 25 \times 1]} &= \frac{y}{[25 \times 2 - 10 \times 3]} = \frac{1}{3 \times 1 - 2 \times 2} \\ \Rightarrow \frac{x}{20 - 25} &= \frac{y}{50 - 30} = \frac{1}{3 - 4} \\ \Rightarrow \frac{x}{-5} &= \frac{y}{20} = \frac{1}{-1} \\ \Rightarrow \frac{x}{-5} &= \frac{1}{-1}, \frac{y}{20} = \frac{1}{-1} \end{aligned}$$

Hence the solution is $x = 5, y = -20$

Question 6:

$$2x + y - 35 = 0$$

$$3x + 4y - 65 = 0$$

By cross multiplication, we have

$$\begin{aligned} \therefore \frac{x}{[(1 \times (-65)) - 4 \times (-35)]} &= \frac{y}{[(-35) \times 3 - (-65) \times 2]} = \frac{1}{(2 \times 4 - 3 \times 1)} \\ \Rightarrow \frac{x}{(-65 + 140)} &= \frac{y}{(-105 + 130)} = \frac{1}{8 - 3} \\ \Rightarrow \frac{x}{75} &= \frac{y}{25} = \frac{1}{5} \\ \therefore \frac{x}{75} &= \frac{1}{5}, \frac{y}{25} = \frac{1}{5} \\ \therefore x &= \frac{75}{5}, y = \frac{25}{5} \\ \therefore x &= 15, y = 5 \text{ is the solution} \end{aligned}$$

***** END *****

