Exercise 8A

Q1

Answer :

$$\begin{aligned} & 8x + 3 = 27 + 2x \\ \Rightarrow\ & 8x - 2x = 27 - 3 \\ \Rightarrow\ & 6x = 24 \\ \Rightarrow\ & x = \frac{24}{6} = 4 \\ \therefore\ & x = 4 \end{aligned}$$

Q2

Answer :

$$\begin{aligned} & 5x + 7 = 2x - 8 \\ \Rightarrow\ & 5x - 2x = -8 - 7 \\ \Rightarrow\ & 3x = -15 \\ \Rightarrow\ & x = \frac{-15}{3} = -5 \\ \therefore\ & x = -5 \end{aligned}$$

Q3.

Answer :

$$2z - 1 = 14 - z$$

$$\Rightarrow \ 2z + z = 14 + 1$$
$$\Rightarrow \ 3z = 15$$
$$\Rightarrow \ z = \frac{15}{3} = 5$$
$$\therefore \ z = 5$$

Q4.

Answer :

$$9x + 5 = 4\left(x - 2\right) + 8$$
$$\Rightarrow \ 9x + 5 = 4x - 8 + 8$$
$$\Rightarrow \ 9x + 5 = 4x$$
$$\Rightarrow \ 9x - 4x = -5$$
$$\Rightarrow \ 5x = -5$$
$$\Rightarrow \ x = \frac{-5}{5} = -1$$
$$\therefore \ x = -1$$

Q5.

Answer :

$$\frac{7y}{5} = y - 4$$

By cross multiplication :

$$\Rightarrow \ 7y = 5\left(y - 4\right)$$
$$\Rightarrow \ 7y = 5y - 20$$
$$\Rightarrow \ 7y - 5y = -20$$
$$\Rightarrow \ 2y = -20$$
$$\Rightarrow \ y = \frac{-20}{2} = -10$$

$$\therefore y = -10$$

Q6.

Answer :

$3x + \frac{2}{3} = 2x + 1$

$\Rightarrow 3x - 2x = 1 - \frac{2}{3}$

$\Rightarrow x = \frac{1}{1} - \frac{2}{3}$ $\left(\text{L.C.M. of } 1 \text{ and } 3 \text{ is } 3\right)$ $\Rightarrow x = \frac{3-2}{3}$

$\Rightarrow x = \frac{1}{3}$

$\Rightarrow x = \frac{1}{3}$

$\therefore x = \frac{1}{3}$

Q7.

Answer :

$$15\left(y - 4\right) - 2\left(y - 9\right) + 5\left(y + 6\right) = 0$$

$\Rightarrow 15y - 60 - 2y + 18 + 5y + 30 = 0$

$\Rightarrow 15y - 2y + 5y - 60 + 18 + 30 = 0$

$\Rightarrow 18y - 12 = 0$

$\Rightarrow 18y = 12$

$\Rightarrow y = \frac{12}{18} = \frac{2}{3}$

$\therefore y = \frac{2}{3}$

Q8.

Answer :

$$3\left(5x - 7\right) - 2\left(9x - 11\right) = 4\left(8x - 13\right) - 17$$

$\Rightarrow 15x - 21 - 18x + 22 = 32x - 52 - 17$

$\Rightarrow 15x - 18x - 21 + 22 = 32x - 69$

$\Rightarrow -3x + 1 = 32x - 69$

$\Rightarrow 1 + 69 = 32x + 3x$

$\Rightarrow 70 = 35x$

$\Rightarrow 35x = 70$ $\left(by \text{ transposition}\right)$

$\Rightarrow x = \frac{70}{35} = 2$

$\therefore x = 2$

********** END **********