

Pages 99-100

1) Solve $5x - (x + 3) = 7 + 2(x + 2)$ for x .

$$\begin{array}{r} 5x - x - 3 = 7 + 2x + 4 \\ 4x - 3 = 11 + 2x \\ +3 \quad +3 \\ \hline 4x = 14 + 2x \\ -2x \quad -2x \\ \hline 2x = 14 \end{array}$$

2) Solve $3x + 2(50 - x) = 110$ for x .

$$\begin{array}{r} 3x + 100 - 2x = 110 \\ x + 100 = 110 \\ -100 \quad -100 \\ \hline x = 10 \end{array}$$

4) $\frac{5}{10x} + \frac{1}{3} = \frac{3}{5x} + \frac{2}{5}$

LCD = $30x$

$$\begin{array}{r} \frac{5}{10x} \left(\frac{3}{\cancel{30x}} \right) + \frac{1}{3} \left(\frac{10x}{\cancel{30x}} \right) = \frac{3}{5x} \left(\frac{6}{\cancel{30x}} \right) + \frac{2}{5} \left(\frac{6x}{\cancel{30x}} \right) \\ 15 + 10\cancel{x} = 18 + 12\cancel{x} \\ -10\cancel{x} \quad -12\cancel{x} \\ \hline 15 = 18 + 2x \\ -18 \quad -18 \\ \hline -3 = 2x \\ \frac{-3}{2} = \frac{2x}{2} \end{array}$$

$$6) 18 - (a - 4) = 9 + (a + 3)$$

$$18 - a + 4 = 9 + a + 3$$

$$\begin{array}{r} 22 - a = 12 + a \\ +a \quad +a \\ \hline \end{array}$$

$$22 = 12 + 2a$$

$$\begin{array}{r} 10 = 2a \\ \frac{5}{2} = \frac{2a}{2} \\ 5 = a \end{array}$$

$$7) 2x(3x + 1) = 3x(2x + 1) - 2$$

$$\begin{array}{r} 6x^2 + 2x = 6x^2 + 3x - 2 \\ -6x^2 \quad -6x^2 \\ \hline \end{array}$$

$$2x = 3x - 2$$

$$\begin{array}{r} 2x = 3x - 2 \\ -3x \quad -3x \\ \hline -x = -2 \end{array}$$

$$x = 2$$

$$8) 1(a - 1) - 1(a + 2) - 1(a - 3) = a$$

$$a - 1 - a - 2 - a + 3 = a$$

$$\begin{array}{r} -a = a \\ +a \quad +a \\ \hline \end{array}$$

$$0 = 2a$$

$$0 = a$$

$$14) \frac{2x-3}{4} - \frac{x-2}{3} = 2$$

$$LCD = 12$$

$$\frac{2x-3}{4} \cdot \frac{3}{3} - \frac{x-2}{3} \cdot \frac{4}{4} = 2 \cdot \frac{12}{12}$$

$$3(2x-3) - 4(x-2) = 24$$

$$(6x-9) - (4x-8) = 24$$

$$x = 12.5$$

$$\begin{array}{r} 2x - 1 = 24 \\ +1 \quad +1 \\ \hline 2x = 25 \\ \cancel{2}x = \cancel{2}5 \end{array}$$