

## Solving Equations

1. <sup>Expand</sup> Get rid of Brackets
2. Eliminate fractions
3. Solve for  $x$
4. ( $x$ 's to side with most  $x$ 's)

Ex 1.8

$$\begin{aligned}\text{Q2 (iii)} \quad 2 - 5x &= 8 - 3x \\ -5x + 3x &= 8 - 2 \\ -2x &= 6 \\ -x &= 3 \\ x &= -3\end{aligned}$$

$$\begin{aligned}\text{Q3 (iii)} \quad 3(x-1) - 4(x-2) &= 6(2x+3) \\ 3x-3-4x+8 &= 12x+18 \\ 3x-4x-12x &= 18-8+3 \\ -13x &= 13 \\ x &= -1\end{aligned}$$

$$\begin{aligned}\text{(iv)} \quad 3(x+5) + 2(x+1) - 3x &= 22 \\ 3x+15+2x+2-3x &= 22 \\ 3x+2x-3x &= 22-15-2 \\ 2x &= 5 \\ x &= 5/2\end{aligned}$$

$$\begin{aligned}\text{Q4 (iii)} \quad \frac{x-3}{4} &= \frac{x-2}{5} \\ 5(x-3) &= 4(x-2) \\ 5x-15 &= 4x-8 \\ x &= 7\end{aligned}$$

$$\textcircled{Q5} \quad \frac{b+2}{4} - \frac{b-3}{3} = \frac{1}{2} \quad (\times 12)$$

$$\begin{aligned} 3(b+2) - 4(b-3) &= 6(1) \\ 3b+6 - 4b+12 &= 6 \\ -b &= -12 \\ b &= 12 \end{aligned}$$

$$\text{(iii)} \quad \frac{3c-1}{6} - \frac{c-3}{4} = \frac{4}{3} \quad (\times 12)$$

$$\begin{aligned} 2(3c-1) - 3(c-3) &= 4(4) \\ 6c-2 - 3c+9 &= 16 \\ 3c &= 9 \\ c &= 3 \end{aligned}$$

$$\textcircled{Q6} \text{(ii)} \quad \frac{3y-12}{5} + 3 = \frac{3(y-5)}{2} \quad (\times 10)$$

$$\begin{aligned} 2(3y-12) + 3(10) &= (5)(3)(y-5) \\ 6y-24+30 &= 15y-75 \\ -9y &= -81 \\ y &= 9 \end{aligned}$$

$$\text{(iv)} \quad \frac{3r-2}{5} - \frac{2r-3}{4} = \frac{1}{2} \quad (\times 20)$$

$$\begin{aligned} 4(3r-2) - 5(2r-3) &= 10(1) \\ 12r-8 - 10r+15 &= 10 \\ 2r &= 3 \\ r &= \frac{3}{2} \end{aligned}$$

$$\textcircled{Q7(ii)} \quad \frac{2}{3}(x-1) - \frac{1}{5}(x-3) = x+1 \quad (\times 15)$$

$$10(x-1) - 3(x-3) = 15(x+1)$$

$$10x - 10 - 3x + 9 = 15x + 15$$

$$7x - 15x = 15 + 1$$

$$-8x = 16$$

$$x = -2$$