

## Equations with Brackets

Be able to solve equations with brackets

Examples :-

Multiply out the brackets.

Move the + 10 to the other side.

Divide by 2.

$$\begin{aligned} 1. \quad & 2(x+5) = 18 \\ \Rightarrow & 2x + 10 = 18 \\ \Rightarrow & 2x = 18 - 10 \\ \Rightarrow & 2x = 8 \\ \Rightarrow & x = 4 \end{aligned}$$

$$\begin{aligned} 2. \quad & 3(3x-5) = 48 \\ \Rightarrow & 9x - 15 = 48 \\ \Rightarrow & 9x = 48 + 15 \\ \Rightarrow & 9x = 63 \\ \Rightarrow & x = 7 \end{aligned}$$

Multiply out the brackets.

Move the - 15 to the other side.

Divide by 9.

### Exercise 5



1. Solve the following equations by multiplying out the brackets first :-

- |   |                        |   |                        |   |                    |
|---|------------------------|---|------------------------|---|--------------------|
| a | $2(x+1) = 8$           | b | $3(x+5) = 21$          | c | $5(x+3) = 20$      |
| d | $4(x+1) = 28$          | e | $6(x+6) = 54$          | f | $2(x+2) = 12$      |
| g | $10(x-2) = 20$         | h | $9(x+2) = 63$          | i | $2(x-1) = 9$       |
| j | $5(x-3) = 0$           | k | $4(x-4) = 4$           | l | $3(x+4) = 9$       |
| m | $2(3x+1) = 14$         | n | $3(2x-1) = 21$         | o | $4(5x-2) = 12$     |
| p | $2(4x+1) = 50$         | q | $3(2x-9) = 0$          | r | $2(5x-1) = 48$     |
| s | $2(x+4) - x - 6 = 4$   | t | $3(x+1) + 2x - 1 = 27$ | u | $4(x+4) - 3x = 17$ |
| v | $5(x-1) + 4x + 3 = 79$ | w | $7x + 5 + 3(x-1) = 22$ | x | $4x + 2(x-5) = 38$ |

2. *A Mixture.* Solve :-

- |   |                        |   |                            |   |                    |
|---|------------------------|---|----------------------------|---|--------------------|
| a | $x+9 = 21$             | b | $3x = 27$                  | c | $\frac{1}{2}x = 8$ |
| d | $4x+7 = 23$            | e | $2(x+4) = 18$              | f | $6(x-3) = 30$      |
| g | $x-7 = 5$              | h | $14+x = 19$                | i | $30x = 3000$       |
| j | $9x-8 = 28$            | k | $5x+22 = 2$                | l | $7+x = 4$          |
| m | $3x = 1$               | n | $\frac{1}{5}x = 2 \cdot 2$ | o | $3x-20 = 2$        |
| p | $2(3x+8) = 28$         | q | $10-x = 12$                | r | $20x = 10$         |
| s | $\frac{2}{3}x = 6$     | t | $2x+9 = 6$                 | u | $5(2x-7) = 0$      |
| v | $\frac{1}{4}x+1 = 6$   | w | $2(x+6) - x - 1 = 13$      | x | $5(x+2) - 2x = 22$ |
| y | $7(x+1) + 2x - 1 = 15$ | z | $3(x-3) + 2(x+5) = 21$     |   |                    |

