

## Topic 5 – Equations and Inequalities

1. Find the value of  $x$  in the following equations (Show each step of working carefully).

(a)  $2x + 1 = 9$

(b)  $3x + 4 = 19$

(c)  $5x + 3 = 33$

(d)  $4x + 8 = 16$

(e)  $8x - 1 = 31$

(f)  $6x - 4 = 14$

(g)  $8x - 9 = 47$

(h)  $7x - 7 = 0$

(i)  $10x - 8 = 72$

2. Solve these equations

(a)  $3x + 1 = x + 7$

(b)  $4x + 5 = 2x + 15$

(c)  $6x + 1 = 3x + 13$

(d)  $7x - 6 = 3x + 22$

(e)  $8x - 1 = 2x + 29$

(f)  $10x - 2 = 6x + 24$

3. Solve these equations :-

(a)  $2(2x + 1) = 18$

(b)  $3(4x - 8) = 36$

(c)  $6(5x - 1) = 24$

(d)  $2(3x + 4) = 20$

(e)  $4(2x - 3) = 4x + 12$

(f)  $2(1 + 5x) = 3x + 51$

4. Solve these inequalities:

(a)  $2x + 1 > 5$

(b)  $3a - 4 < 8$

(c)  $5b - 2 < 23$

(d)  $7c + 7 > 0$

(e)  $4d + 5 < 21$

(f)  $8e + 2 > 10$

(g)  $6g + 3 \leq 0$

(h)  $9h + 9 \geq 9$

5. Solve:

(a)  $2(x + 3) + 3 > 17$

(b)  $2(p + 5) - 1 > 3$

(c)  $5(2y - 1) + 7 \leq 3$

(d)  $8 - 2(r - 2) \geq 20$

(e)  $9 - (1 - k) < 4$

(f)  $1 - 3(m - 5) \geq -2$