Equations & Inequalities Past Paper Questions - ANSWERS

1) $5 + 3a = a - 15$
$5 + 2a = -15$
$2a = -20$
$a = -10$

2) $5 - 2(1 + 3x) = 27$
$5 - 2 - 6x = 27$
$3 - 6x = 27$
$-6x = 24$
$x = -4$

3) $x - 2(x + 1) = 8$
$x - 2x - 2 = 8$
$-x - 2 = 8$
$-x = 10$
$x = -10$

4) $\frac{2}{x} + 1 = 6$
$\frac{2}{x} = 5$
$2 = 5x$
$x = \frac{2}{5}$

5) $3x + 1 = \frac{x-5}{2}$
$6x + 2 = x - 5$
$5x + 2 = -5$
$5x = -7$
$x = -\frac{7}{5}$

6) $2x - \frac{(3x-1)}{4} = 4$
$8x - (3x - 1) = 16$
$8x - 3x + 1 = 16$
$5x + 1 = 16$
$5x = 15$
$x = 3$

7) $\frac{x}{2} - \frac{(x+1)}{3} = 4$
$x - \frac{2(x+1)}{3} = 8$
$3x - 2(x + 1) = 24$
$3x - 2x - 2 = 24$
$x - 2 = 24$
$x = 26$

8) $\frac{m}{3} = \frac{(1-m)}{5}$
$m = \frac{3(1-m)}{5}$
$5m = 3(1 - m)$
$5m = 3 - 3m$
$8m = 3$
$m = \frac{3}{8}$

9) $2 + 5x \geq 8x - 16$
$2 \geq 3x - 16$
$18 \geq 3x$
$3x \leq 18$
$x \leq 6$

10) $4x - 5 \leq 7x - 20$
$-5 \leq 3x - 20$
$15 \leq 3x$
$3x \geq 15$
$x \geq 5$

11) $5 - x > 2(x + 1)$
$5 - x > 2x + 2$
$5 > 3x + 2$
$3 > 3x$
$3x < 3$
$x < 1$

12) $2y < 3 - (y + 6)$
$2y < 3 - y - 6$
$3y < 3 - 6$
$3y < -3$
$y < -1$

13) $11 - 2(1 + 3x) < 39$
$11 - 2 - 6x < 39$
$9 - 6x < 39$
$-6x < 30$
$x > -5$

14) $\frac{x}{4} - \frac{1}{2} < 5$
$x - 2 < 20$
$x < 22$