SOLVING INEQUALITIES (INEQUATIONS)

1. $x + 6 > 11$

2. $x - 4 < 9$

3. $5x > 30$

4*. $-2x < 8$

5*. $-3x > -12$

6*. $-x < 8$

7*. $-x < -6$

8. $6x \leq 18$

9. $\frac{x}{6} \leq 2$

10. $2x + 3 \geq 11$

11. $4x - 2 \leq 26$

12*. $7x + 1 \leq 5$

13*. $5x - 3 \geq 8$

14. $7x + 3 > 5x + 9$

15. $8x + 6 < 3x + 36$

16*. $7x + 5 > 4x + 7$

18. $5x - 4 < 3x + 8$

19. $9y - 2 \leq 5y + 10$

20*. $7x - 6 \geq 2x + 5$

21. $3x + 5 > {}^{-}2x + 15$

22. $2x - 4 < 16 - 2x$

23*. $8 - 3x > 14 - 5x$

24. $5(x + 2) > 3(x + 6)$

25. $6(x - 4) < 3(x + 10)$

<u>EXPERT SECTION.</u>

26. Solve the following.

$7(x + 2) - 4(x - 3) > x + 9$

27. $4(2x - 3) > -3(6 - x)$

28. $\frac{3x}{4} + \frac{1}{6} < \frac{2x}{3} + 5$

MODEL SOLUTIONS:

1. $x + 6 > 11$
   $x > 5$

2. $x - 4 < 9$
   $x < 13$

3. $5x > 30$
   $x > 6$

4*. $-2x < 8$
   $x > -4$

5*. $-3x > -12$
   $x < 4$

6*. $-x < 8$
   $x > -8$

7*. $-x < -6$
   $x > 6$

8. $6x \leq 18$
   $x \leq 3$

9. $\frac{x}{6} \leq 2$
   $x \leq 12$

10. $2x + 3 \geq 11$
    $2x \geq 14$
    $x \geq 7$

11. $4x - 2 \leq 26$
    $4x \leq 28$
    $x \leq 7$

12*. $7x + 1 \leq 5$
    $7x \leq 4$
    $x \leq \frac{4}{7}$

13*. $5x - 3 \geq 8$
    $5x \geq 11$
    $x \geq \frac{11}{5}$

14. $7x + 3 > 5x + 9$
    $2x + 3 > 9$
    $2x > 6$
    $x > 3$

15. $8x + 6 < 3x + 36$
    $5x + 6 < 36$
    $5x < 30$
    $x < 6$

16*. $7x + 5 > 4x + 7$
    $3x + 5 > 7$
    $3x > 2$
    $x > \frac{2}{3}$

18. $5x - 4 < 3x + 8$
    $2x - 4 < 8$
    $2x < 12$
    $x < 6$

19. $9y - 2 \leq 5y + 10$
    $4y - 2 \leq 10$
    $4y \leq 12$
    $y \leq 3$

20*. $7x - 6 \geq 2x + 5$

$5x - 6 \geq 5$

$5x \geq 11$

$x \geq \frac{11}{5}$

21. $3x + 5 > {}^{-}2x + 15$

$5x + 5 > 15$

$5x > 10$

$x > 2$

22. $2x - 4 < 16 - 2x$

$4x - 4 < 16$

$4x < 20$

$x < 5$

23*. $8 - 3x > 14 - 5x$

$8 + 2x > 14$

$2x > 6$

$x > 3$

24. $5(x + 2) > 3(x + 6)$

$5x + 10 > 3x + 18$

$2x + 10 > 18$

$2x > 8$

$x > 4$

25. $6(x - 4) < 3(x + 10)$

$6x - 24 < 3x + 30$

$3x - 24 < 30$

$3x < 54$

$x < 18$

EXPERT SECTION.

26. Solve the following.

$7(x + 2) - 4(x - 3) > x + 9$

$7x + 14 - 4x + 12 > x + 9$

$3x + 26 > x + 9$

$2x + 26 > 9$

$2x > -17$

$x > -\frac{17}{2}$

27. $4(2x - 3) > -3(6 - x)$

$8x - 12 > -18 + 3x$

$5x - 12 > -18$

$5x > -6$

$x > \frac{-6}{5}$

28. $\frac{3x}{4} + \frac{1}{6} < \frac{2x}{3} + 5$

$12 \times \left(\frac{3x}{4} + \frac{1}{6}\right) < 12 \times \left(\frac{2x}{3} + 5\right)$

$9x + 2 < 8x + 60$

$x + 2 < 60$

$x < 58$