SOLVING LINEAR INEQUALITIES

Answer all of these questions. Remember to show your working out in all questions.

MAIN QUESTIONS

1. $x + 3 > 7$
2. $2x - 1 < 5$
3. $4x \geq 12$
4. $x/2 \leq 4$
5. $5 - x > 2$
6. $3x + 2 \leq 11$
7. $2(x - 1) > 6$
8. $7 - 2x \geq 1$
9. $4x + 3 < 2x + 9$
10. $5(x + 2) \leq 3x + 16$
11. $2x/3 > 4$
12. $(x + 5)/2 < 6$
13. $3 - 4x \leq -5$
14. $2x - 7 > x + 1$
15. $4(2x - 1) \geq 3x + 10$
16. $5 - 3x < 2x - 10$
17. $(3x - 1)/4 > 2$
18. $2x + 9 \leq 5x - 3$
19. $7 - 2(x + 1) > x - 4$
20. $3(x - 2) + 4 \geq 2(2x - 1)$
21. $5x/2 - 1 < 2x + 3$
22. $4 - 3x/2 \geq x - 8$
23. $2(3x + 1) - 5 < 3(2 - x)$
24. $(x + 4)/3 - (x - 2)/2 > 1$
25. $5 - 2(3x - 1) \leq 4x - 7$
26. $3(2x - 5) > 4(x + 1) - 3$
27. $(5x - 2)/4 + (3x + 1)/2 < 7$
28. $2x - 3(4 - x) \geq 5x - 12$
29. $4(2 - x) + 3(x + 1) < 2(5 - x)$
30. $(2x - 1)/3 - (x + 2)/4 \geq 1$

MASTER QUESTIONS

M1. A number is greater than 5 and less than or equal to 12. What could the number be?

M2. Twice a number decreased by 3 is at least 11. Find the smallest possible integer value for the number.

M3. The perimeter of a square is less than 40cm. What is the maximum possible integer length for one side?

M4. A train ticket costs £15 plus £2 per stop. If I have £25, what is the maximum number of stops I can travel?

M5. The sum of two consecutive integers is less than 25. What is the largest possible value for the smaller integer?

M6. A mobile phone plan charges £10 per month plus 50p per minute of calls. If my bill must be under £30, what is the maximum number of minutes I can use?

M7. The length of a rectangle is 3cm more than its width. If the perimeter is at most 30cm, what is the maximum possible integer width?

M8. A student scores 72, 85, and 90 on three tests. What must she score on the fourth test to have an average of at least 85?

M9. A swimming pool is being filled at 200 litres per hour. If the pool holds 5000 litres, how many full hours will it take to fill the pool?

M10. A company makes a profit of £15 on each item sold. If fixed costs are £200, how many items must be sold to make a profit of at least £1000?