SOLVING LINEAR INEQUALITIES

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

MAIN QUESTIONS

1.	$x + 3 > 7$	$x > 4$	2.	$2x - 1 < 5$	$x < 3$
3.	$4x \geq 12$	$x \geq 3$	4.	$x/2 \leq 4$	$x \leq 8$
5.	$5 - x > 2$	$x < 3$	6.	$3x + 2 \leq 11$	$x \leq 3$
7.	$2(x - 1) > 6$	$x > 4$	8.	$7 - 2x \geq 1$	$x \leq 3$
9.	$4x + 3 < 2x + 9$	$x < 3$	10.	$5(x + 2) \leq 3x + 16$	$x \leq 3$
11.	$2x/3 > 4$	$x > 6$	12.	$(x + 5)/2 < 6$	$x < 7$
13.	$3 - 4x \leq -5$	$x \geq 2$	14.	$2x - 7 > x + 1$	$x > 8$
15.	$4(2x - 1) \geq 3x + 10$	$x \geq 2.8$	16.	$5 - 3x < 2x - 10$	$x > 3$
17.	$(3x - 1)/4 > 2$	$x > 3$	18.	$2x + 9 \leq 5x - 3$	$x \geq 4$
19.	$7 - 2(x + 1) > x - 4$	$x < 3$	20.	$3(x - 2) + 4 \geq 2(2x - 1)$	$x \leq 0$
21.	$5x/2 - 1 < 2x + 3$	$x < 8$	22.	$4 - 3x/2 \geq x - 8$	$x \leq 4.8$
23.	$2(3x + 1) - 5 < 3(2 - x)$	$x < 1$	24.	$(x + 4)/3 - (x - 2)/2 > 1$	$x < 4$
25.	$5 - 2(3x - 1) \leq 4x - 7$	$x \geq 1.4$	26.	$3(2x - 5) > 4(x + 1) - 3$	$x > 8$

27. $(5x - 2)/4 + (3x + 1)/2 < 7$ | $x < 4$

28. $2x - 3(4 - x) \geq 5x - 12$ | $0 \geq 0$

29. $4(2 - x) + 3(x + 1) < 2(5 - x)$ | $x < 3$

30. $(2x - 1)/3 - (x + 2)/4 \geq 1$ | $x \geq 5.2$

MASTER QUESTIONS

M1. A number is greater than 5 and less than or equal to 12. What could the number be? | Any integer from 6 to 12 inclusive

M2. Twice a number decreased by 3 is at least 11. Find the smallest possible integer value for the number. | 7

M3. The perimeter of a square is less than 40cm. What is the maximum possible integer length for one side? | 9cm

M4. A train ticket costs £15 plus £2 per stop. If I have £25, what is the maximum number of stops I can travel? | 5 stops

M5. The sum of two consecutive integers is less than 25. What is the largest possible value for the smaller integer? | 11

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? | 39 minutes

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? | 6cm

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? | 93 or higher

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? | 25 hours

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?

80 items