SOLVING INEQUALITIES WITH UNKNOWN ON BOTH SIDES

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

MAIN QUESTIONS

1. $2x + 3 < x + 5$ — $x < 2$

2. $4x - 1 > 2x + 7$ — $x > 4$

3. $5x + 2 \leq 3x + 10$ — $x \leq 4$

4. $7x - 4 \geq 3x + 8$ — $x \geq 3$

5. $x + 6 < 2x - 1$ — $x > 7$

6. $3x - 5 > x + 9$ — $x > 7$

7. $6x + 4 \leq 4x + 12$ — $x \leq 4$

8. $8x - 3 \geq 5x + 9$ — $x \geq 4$

9. $2x + 7 < 5x - 2$ — $x > 3$

10. $9x - 6 > 6x + 3$ — $x > 3$

11. $4x + 5 \leq 7x - 4$ — $x \geq 3$

12. $10x + 1 \geq 7x + 10$ — $x \geq 3$

13. $3x - 2 < 7x + 6$ — $x > -2$

14. $5x + 3 > 9x - 5$ — $x < 2$

15. $6x - 4 \leq 10x + 8$ — $x \geq -3$

16. $12x + 7 \geq 8x + 15$ — $x \geq 2$

MASTER QUESTIONS

M1. A number is such that when it is multiplied by 3 and 5 is added, the result is less than when it is multiplied by 4 and 2 is subtracted. Find the possible values of the number. — $x < 7$

M2. The sum of two consecutive integers is greater than 21 but less than 25. Find the possible pairs of integers.

The pairs are (11, 12) and (12, 13)

M3. A rectangle has a length that is 3cm more than its width. The perimeter of the rectangle is at least 26cm. Find the minimum possible width of the rectangle.

The minimum width is 5cm

M4. A school trip costs £200 for the bus and £15 per student. If the total cost must be less than £500, find the maximum number of students that can go on the trip.

The maximum number of students is 19