SOLVING INEQUALITIES WITH UNKNOWN ON BOTH SIDES

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

MAIN QUESTIONS

1. $2x + 3 < 5x - 1$ | $x > 4/3$
2. $4x - 7 \geq 3x + 2$ | $x \geq 9$

3. $5x + 1 \leq 2x + 10$ | $x \leq 3$
4. $3x - 4 > 2x + 5$ | $x > 9$

5. $7x + 2 < 9x - 4$ | $x > 3$
6. $6x - 5 \geq 4x + 3$ | $x \geq 4$

7. $2x + 7 \leq 5x - 2$ | $x \geq 3$
8. $8x - 3 > 5x + 6$ | $x > 3$

9. $3x + 4 < 7x - 8$ | $x > 3$
10. $5x - 2 \geq 2x + 10$ | $x \geq 4$

11. $4x + 6 \leq 6x - 2$ | $x \geq 4$
12. $9x - 5 > 6x + 7$ | $x > 4$

13. $3x + 5 < 2x + 10$ | $x < 5$
14. $7x - 4 \geq 5x + 8$ | $x \geq 6$

15. $2x + 9 \leq 4x - 3$ | $x \geq 6$
16. $10x - 7 > 8x + 5$ | $x > 6$

MASTER QUESTIONS

M1. A rectangle has a length that is 3cm more than its width. The perimeter is at least 26cm. Find the possible widths.

The width must be at least 5cm

M2. A taxi charges £3 plus £2 per mile. Another taxi charges £5 plus £1.50 per mile. For how many miles is the first taxi cheaper?

The first taxi is cheaper for more than 4 miles

M3. A school trip costs £200 plus £50 per student. Another trip costs £300 plus £40 per student. For how many students is the first trip cheaper?

The first trip is cheaper for fewer than 10 students

M4. A mobile phone plan costs £15 per month plus £0.10 per text. Another plan costs £20 per month plus £0.05 per text. For how many texts is the first plan cheaper?

The first plan is cheaper for fewer than 100 texts