UNKNOWNS ON BOTH SIDES

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

MAIN QUESTIONS

1. $2x + 3 = 7$
2. $5x - 4 = 11$
3. $3x + 1 = 2x + 5$
4. $4x - 2 = 2x + 6$
5. $6x + 3 = 4x + 11$
6. $5x - 7 = 3x + 1$
7. $7x + 2 = 3x + 18$
8. $8x - 5 = 4x + 7$
9. $9x + 6 = 5x + 22$
10. $10x - 8 = 6x + 4$
11. $11x + 9 = 7x + 25$
12. $12x - 10 = 8x + 6$
13. $13x + 11 = 9x + 27$
14. $14x - 12 = 10x + 8$
15. $15x + 13 = 11x + 29$
16. $16x - 14 = 12x + 10$
17. $17x + 15 = 13x + 31$
18. $18x - 16 = 14x + 12$
19. $19x + 17 = 15x + 33$
20. $20x - 18 = 16x + 14$
21. $21x + 19 = 17x + 35$
22. $22x - 20 = 18x + 16$
23. $23x + 21 = 19x + 37$
24. $24x - 22 = 20x + 18$
25. $25x + 23 = 21x + 39$
26. $26x - 24 = 22x + 20$
27. $27x + 25 = 23x + 41$
28. $28x - 26 = 24x + 22$
29. $29x + 27 = 25x + 43$
30. $30x - 28 = 26x + 24$

MASTER QUESTIONS

M1. A rectangle's length is 3cm more than twice its width. If the perimeter is 36cm, find the dimensions.

M2. Two numbers differ by 7. Three times the smaller is 5 more than twice the larger. Find the numbers.

M3. A father is three times as old as his son. In 12 years, he will be twice as old. Find their current ages.

M4. The sum of three consecutive even numbers is 78. Find the numbers.

M5. A train travels 240km at a constant speed. If it had travelled 10km/h faster, it would have taken 1 hour less. Find the original speed.

M6. The area of a rectangle is $60cm^2$. If the length is 4cm more than the width, find the dimensions.

M7. A number plus 5 is equal to twice the number minus 3. Find the number.

M8. The sum of two numbers is 45. One number is 9 more than the other. Find the numbers.

M9. A shop sells pens for 50p each and pencils for 20p each. Sarah buys 15 items and spends £5.10. How many pens did she buy?

M10. The perimeter of a triangle is 42cm. The longest side is twice the shortest side, and the middle side is 3cm more than the shortest side. Find the lengths of all sides.