SUBSTITUTION IN ALGEBRA

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

MAIN QUESTIONS

1.	$2x + 3 = 11$	$x = 4$	2.	$5y - 2 = 13$	$y = 3$
3.	$4a + 7 = 23$	$a = 4$	4.	$6b - 5 = 19$	$b = 4$
5.	$3c + 8 = 26$	$c = 6$	6.	$7d - 4 = 24$	$d = 4$
7.	$2e + 9 = 21$	$e = 6$	8.	$8f - 3 = 37$	$f = 5$
9.	$5g + 6 = 31$	$g = 5$	10.	$9h - 7 = 20$	$h = 3$
11.	$4x + 3x = 28$	$x = 4$	12.	$6y - 2y = 16$	$y = 4$
13.	$5a + 2a - 3 = 18$	$a = 3$	14.	$7b - 3b + 4 = 20$	$b = 4$
15.	$3c + 4c - 5 = 16$	$c = 3$	16.	$8d - 2d + 3 = 27$	$d = 4$
17.	$2x + 3x + 4 = 29$	$x = 5$	18.	$5y - y + 6 = 22$	$y = 4$
19.	$4a + 2a - 3a = 15$	$a = 5$	20.	$7b + b - 2b = 24$	$b = 4$
21.	$3x + 2y = 13$ where $x = 3$	$y = 2$	22.	$4a - b = 11$ where $a = 4$	$b = 5$
23.	$2x + 3y = 16$ where $y = 4$	$x = 2$	24.	$5p - 2q = 13$ where $p = 3$	$q = 1$
25.	$3m + 4n = 23$ where $m = 5$	$n = 2$	26.	$6x - 3y = 15$ where $y = 3$	$x = 4$

27. $2a + 5b = 27$ where $a = 6$ | $b = 3$

28. $7c - 2d = 19$ where $c = 3$ | $d = 1$

29. $4x + 3y = 26$ where $x = 5$ | $y = 2$

30. $8p - 3q = 29$ where $p = 4$ | $q = 1$

MASTER QUESTIONS

M1. A rectangle has a length that is 3cm more than its width. If the perimeter is 26cm, find the dimensions. | The rectangle is 8cm by 5cm

M2. The sum of two numbers is 15 and their difference is 3. Find the numbers. | The numbers are 9 and 6

M3. A book costs £5 more than a pen. If 2 books and 3 pens cost £31, find the cost of each. | A book costs £8 and a pen costs £3

M4. The sum of three consecutive numbers is 24. Find the numbers. | The numbers are 7, 8 and 9

M5. A father is three times as old as his son. In 5 years, he will be twice as old. Find their current ages. | The father is 45 and the son is 15

M6. If 5 apples and 3 oranges cost £4.10, and 2 apples and 4 oranges cost £2.80, find the cost of each fruit. | An apple costs 50p and an orange costs 45p

M7. The area of a rectangle is $48cm^2$ and its length is 8cm more than its width. Find the dimensions. | The rectangle is 12cm by 4cm

M8. A number is doubled and then increased by 5. The result is 21. Find the number. | The number is 8

M9. The sum of two numbers is 20. One number is 4 more than the other. Find the numbers.

The numbers are 12 and 8

M10. A train travels at a constant speed. If it covers 120 miles in 3 hours, how far will it travel in 5 hours?

The train will travel 200 miles