SUBSTITUTION

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

MAIN QUESTIONS

1. Find a + b where a = 5, b = 3 | 8
2. Find a - b where a = 7, b = 4 | 3
3. Find a × b where a = 6, b = 2 | 12
4. Find a ÷ b where a = 15, b = 3 | 5
5. Find a + b - c where a = 8, b = 5, c = 2 | 11
6. Find a × b + c where a = 3, b = 4, c = 2 | 14
7. Find a ÷ b × c where a = 20, b = 4, c = 3 | 15
8. Find a + b × c where a = 2, b = 3, c = 4 | 14
9. Find (a + b) × c where a = 3, b = 2, c = 5 | 25
10. Find a × (b - c) where a = 4, b = 7, c = 3 | 16
11. Find a^2 + b where a = 3, b = 5 | 14
12. Find $\sqrt{a}$ + b where a = 16, b = 3 | 7
13. Find a^3 - b where a = 2, b = 5 | 3
14. Find 2a + 3b where a = 4, b = 2 | 14
15. Find 4a - 2b where a = 5, b = 3 | 14
16. Find a^2 + b^2 where a = 3, b = 4 | 25
17. Find $(a + b)^2$ where a = 2, b = 3 | 25
18. Find a^2 - b^2 where a = 5, b = 3 | 16
19. Find 3a × 2b where a = 2, b = 3 | 36
20. Find 4a ÷ 2b where a = 6, b = 2 | 6

21. Find $a + b \times c^2$ where a = 2, b = 3, c = 2 | 14

22. Find $(a + b) \times (c - d)$ where a = 4, b = 3, c = 8, d = 5 | 21

23. Find $a^2 + b^2 - c^2$ where a = 3, b = 4, c = 2 | 21

24. Find $\sqrt{(a + b)} \times c$ where a = 7, b = 2, c = 3 | 9

25. Find $2a^3 - 3b^2$ where a = 2, b = 3 | -11

26. Find $(a + b) \div (c - d)$ where a = 8, b = 4, c = 7, d = 3 | 3

27. Find $a \times b + c \times d$ where a = 2, b = 5, c = 3, d = 4 | 22

28. Find $(a^2 + b^2) \div c$ where a = 3, b = 4, c = 5 | 5

29. Find $\sqrt{a} + \sqrt{b} \times c$ where a = 9, b = 16, c = 2 | 11

30. Find $2a^3 - 3b^2 + 4c$ where a = 2, b = 3, c = 5 | 9

MASTER QUESTIONS

M1. A rectangle has length 2x + 3 and width x - 1. If x = 4, find the area. | 33 square units

M2. The cost of a meal is £3 per adult and £2 per child. If there are a adults and c children, find the total cost when a = 5 and c = 3. | £21

M3. A car travels at speed s mph for t hours. If s = 50 and t = 2.5, find the distance travelled. | 125 miles

M4. The area of a triangle is ½ × base × height. If base = 8cm and height = 5cm, find the area. | 20cm²

M5. A shop sells apples for 25p each and oranges for 30p each. If I buy a apples and o oranges, find the total cost when a = 6 and o = 4. | £2.70

M6. The volume of a cube is side³. If side = 2.5cm, find the volume. | 15.625cm³

M7. A train travels d miles in t hours. Its average speed is d ÷ t. If d = 120 and t = 1.5, find the average speed. | 80 mph

M8. The perimeter of a rectangle is 2(length + width). If length = 3x + 2 and width = x - 1, find the perimeter when x = 5. | 32 units

M9. A recipe requires 200g flour per person. If I'm cooking for p people, find the flour needed when p = 8. | 1600g

M10. The kinetic energy of an object is ½ × mass × velocity². If mass = 10kg and velocity = 4m/s, find the kinetic energy. | 80 joules