

Substitution and simultaneous equations

Year 9 | Key Stage 3 | 14 questions, 47 marks

KS3 Maths topic practice



Scan for the solutions

Name: _____ **Date:** _____ **Score:** _____ / 47

1 $F = 5v + 20$

- Work out the value of F when $v = 6$.
- Work out the value of v when $F = 95$.

(4 marks)

Answer _____

2 The area of a trapezium is given by the formula

$$A = \frac{1}{2}(a + b)h$$

- Work out A when $a = 5$, $b = 9$ and $h = 4$
- Work out h when $A = 42$, $a = 5$ and $b = 9$

(3 marks)

Answer _____

3 $v = u + at$

- Work out the value of v when $u = 7$, $a = 9.8$ and $t = 5$.
- Work out the value of t when $v = 87$, $u = 12$ and $a = 5$.

(4 marks)

Answer _____

4 Make x the subject of the formula

$$y = 2x + 9$$

(2 marks)

Answer _____

5 Make k the subject of the formula

$$m = \frac{k}{5} - 2$$

(2 marks)

Answer _____

6 a. Make r the subject of $C = 2\pi r$

b. Make b the subject of $P = 2(a + b)$

c. Make x the subject of $y = \frac{x + 4}{3}$

(3 marks)

Answer _____

7 Solve the simultaneous equations

$$x + y = 11$$

$$x - y = 3$$

(3 marks)

Answer _____

8 Solve the simultaneous equations

$$2x + 3y = 12$$

$$2x + y = 8$$

(3 marks)

Answer _____

9

At the school tuck shop:

2 cookies and 1 drink cost £2.30

1 cookie and 1 drink cost £1.60

Work out the cost of one cookie and the cost of one drink.

(3 marks)

Answer _____

10

Solve the simultaneous equations

$$3x + 2y = 16$$

$$x + y = 6$$

(3 marks)

Answer _____

11

Assume $a \neq b$.

Make x the subject of

$$ax = bx + c$$

(3 marks)

Answer _____

EXTENSION QUESTIONS

12

a. Make t the subject of $3t + a = bt - 5$

b. Make x the subject of $y = \frac{2x + 1}{x - 3}$

(5 marks)

Answer _____

13 Solve the simultaneous equations

$$3x + 2y = 24$$

$$2x + 5y = 27$$

(4 marks)

Answer _____

EXTENSION QUESTIONS

14 A theme park sells adult tickets and child tickets.

3 adult tickets and 2 child tickets cost £40

2 adult tickets and 5 child tickets cost £45

Mr Okafor buys 2 adult tickets and 3 child tickets. He pays with a £50 note.

Work out how much change he should get.

(5 marks)

Answer _____

End of questions | Total 47 marks