

Substitution

For AQA GCSE Mathematics (8300) • Foundation tier

Name _____

Total marks: **38**

Answer **all** questions in the spaces provided. Show your working: marks are given for correct method.

1 (a) Work out the value of $5a$ when $a = 7$

[1 mark]

Answer _____

(b) Work out the value of $b - 9$ when $b = 4$

[1 mark]

Answer _____

(c) Work out the value of $\frac{c}{3}$ when $c = 18$

[1 mark]

Answer _____

(d) Work out the value of d^2 when $d = 6$

[1 mark]

Answer _____

- 2 Work out the value of $4p + 3q$ when $p = 6$ and $q = -5$

[2 marks]

Answer _____

- 3 Circle the expression that has the largest value when $x = -3$

[1 mark]

$$x + 8$$

$$x^2$$

$$5x$$

$$10 - x$$

4 $R = \frac{m}{4} + 3n$

- (a) Work out the value of R when $m = 20$ and $n = 3$

[2 marks]

$$R = \underline{\hspace{2cm}}$$

- (b) Work out the value of n when $R = -3$ and $m = 12$

[3 marks]

$$n = \underline{\hspace{2cm}}$$

5 Work out the value of $x^2 + 7x$ when $x = -4$

[2 marks]

Answer _____

6 $m = 5$ and $n = -2$

Circle the expression that gives the lowest value.
You must show your working.

[2 marks]

$m + n$

n^2

mn

$\frac{m}{n}$

- 7** The cost, C pounds, of hiring a bike for h hours is given by

$$C = 12 + 5h$$

- (a) Work out the cost of hiring a bike for 6 hours.

[2 marks]

Answer £ _____

- (b) Kim pays £37 to hire a bike.
For how many hours does she hire the bike?

[2 marks]

Answer _____ hours

- 8** (a) Work out the value of $2a^2$ when $a = 3$

[1 mark]

Answer _____

- (b) Tom says,
‘When $a = -3$, the value of $2a^2$ is -18 ’
Explain why Tom is wrong.

[1 mark]

9 $v = u + at$

(a) Work out v when $u = 5$, $a = 3$ and $t = 4$

[2 marks]

$v =$ _____

(b) Work out v when $u = 20$, $a = -2$ and $t = 6$

[2 marks]

$v =$ _____

10 $x = -2$

Tick **one** box for each row.

[2 marks]

$x^2 = 4$

$3x = 6$

$x - 5 = -7$

$-x^2 = 4$

True

False

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- 11** The perimeter of a rectangle is given by the formula $P = 2(l + w)$

Work out the value of P when $l = 8.5$ and $w = 3.5$

[2 marks]

$P =$ _____

- 12** $s = ut + \frac{1}{2}at^2$

Work out the value of s when $u = 2$, $t = 5$ and $a = 4$

[2 marks]

$s =$ _____

- 13** The formula to change a temperature in degrees Celsius, C , to degrees Fahrenheit, F , is

$$F = \frac{9C}{5} + 32$$

- (a) Work out F when $C = 25$

[2 marks]

$F =$ _____

- (b) Work out F when $C = -10$

[2 marks]

$F =$ _____

- 14** $a = 3$ $b = -2$ $c = 5$

Work out the value of $a^2 - bc$

[2 marks]

Answer _____