

Algebraic Notation and Vocabulary

For AQA GCSE Mathematics (8300) • Foundation tier

Name _____

Total marks: **32**

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

1 Write each of these using correct algebraic notation.

(a) $a \times b$

[1 mark]

Answer _____

(b) $y \div 4$

[1 mark]

Answer _____

(c) $p \times p$

[1 mark]

Answer _____

(d) $3 \times (x + 2)$

[1 mark]

Answer _____

2 Circle the expression that is equal to $y + y + y + y$

[1 mark]

y^4

$4y$

$y + 4$

$4 + y$

3 $3x + 5 = 11$

Circle the word that describes this.

[1 mark]

expression

equation

formula

identity

4 Tick **one** box for each row.

[3 marks]

	Expression	Equation	Formula	Identity
$5a + 2b$	☐	☐	☐	☐
$A = lw$	☐	☐	☐	☐
$4x - 1 = 11$	☐	☐	☐	☐
$2(x + 3) \equiv 2x + 6$	☐	☐	☐	☐

5 Here is an expression. $7x - 3y + 5$

(a) How many terms does the expression have?

[1 mark]

Answer _____

(b) Write down the coefficient of y .

[1 mark]

Answer _____

(c) Write down the constant term.

[1 mark]

Answer _____

6 T is 5 less than s .
Circle the correct formula.

[1 mark]

$T = 5 - s$

$T = s - 5$

$T = 5s$

$T = \frac{s}{5}$

- 7** c and d are positive whole numbers.
 c is even.
 d is odd.

Tick a box for each expression.

[3 marks]

	Even	Odd	Cannot tell
$c + d$	☐	☐	☐
$3c$	☐	☐	☐
cd	☐	☐	☐
$\frac{c}{2}$	☐	☐	☐

- 8** (a) Circle the expression that means 'multiply n by 4, then subtract 3'.

[1 mark]

$4n - 3$

$4(n - 3)$

$3 - 4n$

$n - 12$

- (b) Circle the expression that means 'subtract 3 from n , then multiply by 4'.

[1 mark]

$4n - 3$

$4(n - 3)$

$3 - 4n$

$n - 12$

- 9 Tom says,
' y^2 and $2y$ always have the same value.'

Show that Tom is wrong.

[2 marks]

- 10 Sam says,
' $3(x + 4) \equiv 3x + 4$ is an identity.'

Is he correct? Tick a box.

Give a reason for your answer.

[1 mark]

☐ Yes

☐ No

- 11 Here are some terms.

$3x$ $5y$ x^2 $-2x$ 4 $7y^2$

- (a) Write down the term that is a like term of $3x$

[1 mark]

Answer _____

- (b) Write down the term that is a like term of $3x^2$

[1 mark]

Answer _____

12 n is a positive whole number.

(a) Circle the expression that is **always** even.

[1 mark]

$$n + 1$$

$$2n + 1$$

$$2n$$

$$n^2$$

(b) Circle the expression that is **always** odd.

[1 mark]

$$3n$$

$$2n + 3$$

$$n + 2$$

$$4n$$

13 Write = or $\equiv$ in each box to make a correct statement.

(a) $2(x + 5)$ $2x + 10$

[1 mark]

(b) $2x + 5$ 11

[1 mark]

- 14** Is each statement true for all values of x , some values of x or no values of x ?
Tick **one** box in each row.

[2 marks]

	All values	Some values	No values
$x + 3 = x + 5$	☐	☐	☐
$4x + 8 = 20$	☐	☐	☐
$x + x + x = 3x$	☐	☐	☐

- 15** k is a positive whole number.

(a) Write down, in terms of k , the whole number that is 1 less than k

[1 mark]

Answer _____

(b) Show that the total of k and the whole number that is 1 less than k is always odd.

[2 marks]