Algebraic notation

Year 7 | Key Stage 3 | 12 questions, 32 marks

KS3 Maths topic practice

Scan for the solutions

Name: _____ **Date:** _____ **Score:** _____ **/ 32**

1 Simplify $a + a + a + a$

(1 mark)

Answer _____

2 Write each of these in its simplest algebraic form.

a. $b \times 5 \times a$

b. $y + y + y$

c. $m \times m \times n$

d. $p \div 4$

(4 marks)

Answer _____

3 Simplify $d \times d \times d$

(1 mark)

Answer _____

4 Look at 5^3

a. Write down the base.

b. Write down the index (also called the power or exponent).

c. Write $7 \times 7 \times 7 \times 7$ using index notation.

(3 marks)

Answer _____

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5 Write down whether each of these is an **expression**, an **equation** or a **formula**.

a. $3x + 2$

b. $2y - 5 = 11$

c. $A = lw$

d. $4a + b^2$

(2 marks)

Answer _____

6 Pencils cost c pence each.

Write down an expression, in terms of c, for the total cost, in pence, of 7 pencils.

(1 mark)

Answer _____

7 Amy is x years old.

Ben is 5 years older than Amy.

Chloe is twice as old as Amy.

a. Write down an expression, in terms of x, for Ben's age.

b. Write down an expression, in terms of x, for Chloe's age.

(2 marks)

Answer _____

8 Write an expression for each of these.

a. Square n, then add 4

b. Add 4 to n, then square the answer

c. Cube t, then halve the answer

d. Multiply p by q, then divide by 3

(4 marks)

Answer _____

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9 A plumber charges a fixed call-out fee of £40 plus £28 for each hour of work.

The plumber works for h hours on a job.

The total charge for the job is £C.

Write a formula for C in terms of h.

(3 marks)

Answer _____

10 Asha thinks of a number, n.

She multiplies her number by 4 and then subtracts 7. Her answer is 25.

a. Write an equation in n.

b. Solve your equation to find Asha's number.

(3 marks)

Answer _____

11 A square tile has sides of length s cm.

a. Write a formula for the area, A cm^2, of one tile.

b. Six tiles are put in a row, as shown in the diagram. Write a formula for the perimeter, P cm, of the row of tiles.

c. Rearrange your answer to part (a) to write a formula for s in terms of A.

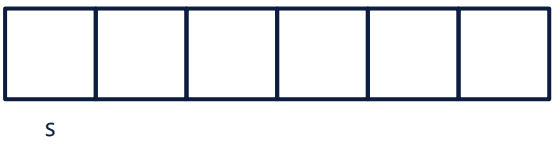

Diagram NOT accurately drawn

(4 marks)

Answer _____

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12 A rectangle has length $(x + 6)$ cm and width x cm.

The perimeter of the rectangle is 40 cm.

a. Write an equation in x. Simplify your equation.

b. Solve your equation to find the length of the rectangle.

(4 marks)

Answer _____

End of questions | Total 32 marks

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