

Simplifying Expressions and Collecting Like Terms

For AQA GCSE Mathematics (8300) • Foundation tier

Name _____

Total marks: **39**

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

1 (a) Simplify fully $n + n + n + n + n$

[1 mark]

Answer _____

(b) Simplify fully $y \times y \times y$

[1 mark]

Answer _____

(c) Simplify fully $4 \times 3p$

[1 mark]

Answer _____

(d) Simplify fully $8m \div m$

[1 mark]

Answer _____

- 2** Simplify $3 \times a \times 2 \times b$
Circle your answer.

[1 mark]

$5ab$

$6ab$

$32ab$

$6a + b$

- 3** Simplify fully $7x + 2x - 4x$

[1 mark]

Answer _____

- 4** Simplify fully $6a + 5b + 2a - 3b$

[2 marks]

Answer _____

- 5 (a) Simplify fully $9m + 4 - 3m + 7$

[2 marks]

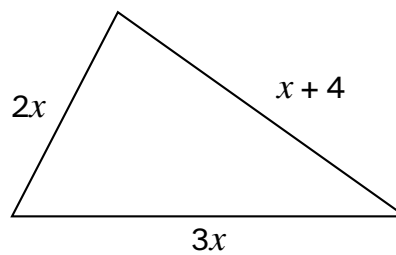
Answer _____

- (b) Simplify fully $5c \times 3d$

[1 mark]

Answer _____

- 6 Here is a triangle.
All lengths are in centimetres.



Not drawn accurately

Work out an expression for the perimeter of the triangle.
Give your answer in its simplest form.

[2 marks]

Answer _____ cm

7 Tom simplifies $5x + 3y - 2x + y$

He writes $3x + 2y$

Is he correct? Tick a box.

Give a reason for your answer.

[1 mark]

☐ Yes

☐ No

8 (a) Simplify fully $\frac{15h}{3}$

[1 mark]

Answer _____

(b) Simplify fully $\frac{10y}{15y}$

[2 marks]

Answer _____

9 (a) Simplify fully $5p^2 - p^2$

[1 mark]

Answer _____

(b) Simplify fully $4x^2 + 3x - 5 - x^2 - 7x + 2$

[2 marks]

Answer _____

10 Circle the expression which does **not** simplify to $6x$

[1 mark]

$2x + 4x$

$3 \times 2x$

$8x - 2x$

$2x \times 3x$

11 (a) Simplify fully $2xy + 5x - 3xy + x$

[2 marks]

Answer _____

(b) Simplify fully $3a \times 2a \times b$

[1 mark]

Answer _____

- 12** p is 6 more than m .
 q is 2 less than m .

(a) Write an expression for p in terms of m .

[1 mark]

Answer _____

(b) Write an expression for q in terms of m .

[1 mark]

Answer _____

(c) Work out $p + q$
Simplify your answer.

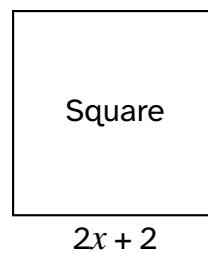
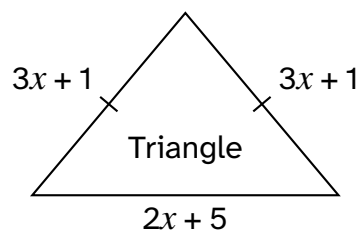
[2 marks]

Answer _____

(d) Show that $p - q$ is always equal to 8

[2 marks]

- 13** Here are an isosceles triangle and a square.
All lengths are in centimetres.

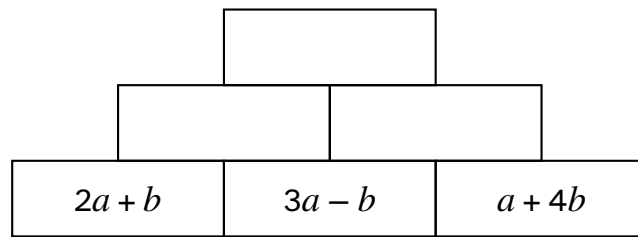


Not drawn accurately

Show that the perimeter of the triangle is always 1 cm less than the perimeter of the square.

[3 marks]

- 14** In this wall, the expression in each brick is the sum of the expressions in the two bricks directly below it.

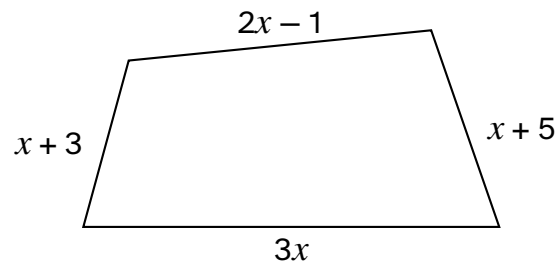


Work out the expression for the top brick.
Give your answer in its simplest form.

[3 marks]

Answer _____

- 15 Here is a quadrilateral.
All lengths are in centimetres.



Not drawn accurately

The perimeter of the quadrilateral is P cm.
Write a formula for P in terms of x .
Give your answer in its simplest form.

[3 marks]

Answer _____