



**What you will learn**

- simplify and manipulate algebraic expressions to maintain equivalence by
  - o collecting like terms
  - o multiplying a single term over a bracket
  - o taking out common factors
- understand and use standard mathematical formulae
- model situations or procedures by translating them into algebraic expressions
- generate terms of a sequence from either a term-to-term or a position-to term rule
- substitute numerical values into formulae and expressions, including scientific formulae
- understand and use the concepts and vocabulary of expressions, equations, inequalities, terms and factors

**Concept Corner**

When we use algebra, we write  $3g$  instead of  $3 \times g$ . This is because  $\times$  and  $x$  look similar.

We also use a vinculum to show division, for example  $y \div 4 \equiv y \div 4$ .

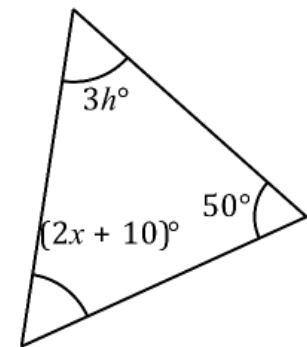
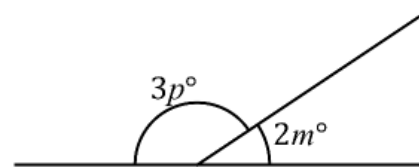
For example, when  $a=2$  and  $b=5$ ,

$$7a = 7 \times 2 = 14$$

$$a + 3b = 2 + 3 \times \underline{\hspace{1cm}} = 17$$

$$3a - b = 3 \times 2 - 5 = \underline{\hspace{1cm}}$$

Use your knowledge of angle facts to write equations to represent the information in the diagrams below.



**a) Task One:**

Simplify these expressions by collecting like terms:

a)  $3x + 7y + 8x + 5y = \underline{\hspace{2cm}}$

b)  $4m + 3e + 7m + 2e + 4e + m = \underline{\hspace{2cm}}$

c)  $8q + 7x - 3q + 2x - 5x = \underline{\hspace{2cm}}$

d)  $g + 3g + 8 + 4g + 11 = \underline{\hspace{2cm}}$

**Task Two:**

A rectangle has length  $y$  and width  $3x$ . Write down an expression for:

- i) the perimeter of the rectangle.
- ii) the area of the rectangle.



Given that  $c = 4a - 5$ , find:

$c$  when  $a = 3$

$c$  when  $a = 1.2$

Calculate the perimeter of this triangle when:

a)  $x = 2$

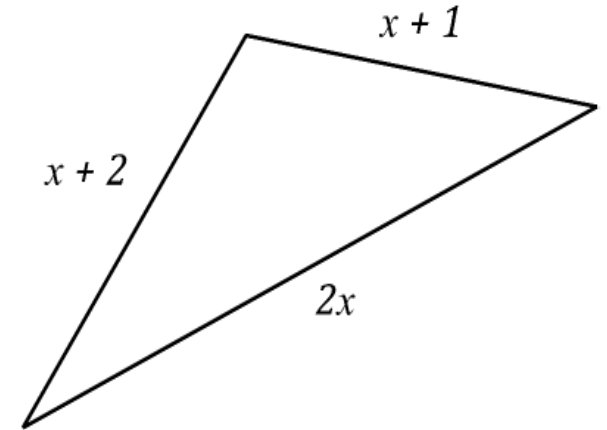
Perimeter = \_\_\_\_\_

b)  $x = 5$

Perimeter = \_\_\_\_\_

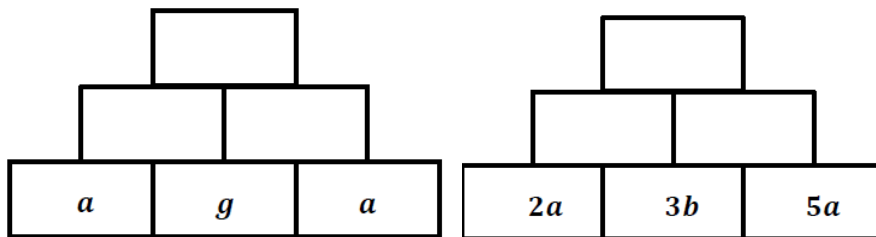
c)  $x = 0.6$

Perimeter = \_\_\_\_\_

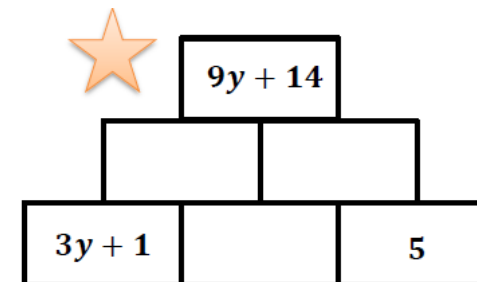


Complete these pyramids.

Each brick is the sum of the two bricks below it.



**Stretch and Challenge**



Answers to questions - see Mr CJ or your teacher for answers.