



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 $y \div 4 \equiv y \div 4$.

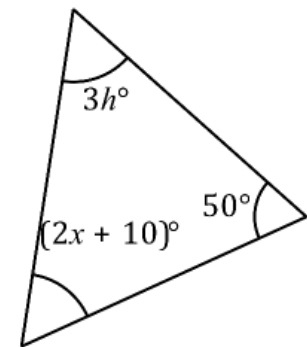
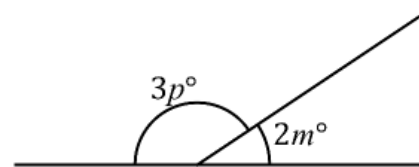
For example, when $a=2$ and $b=5$,

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

$$a + 3b = 2 + 3 \times \underline{\quad} = 17$$

$$3a - b = 3 \times 2 - 5 = \underline{\quad}$$

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) $x = 2$

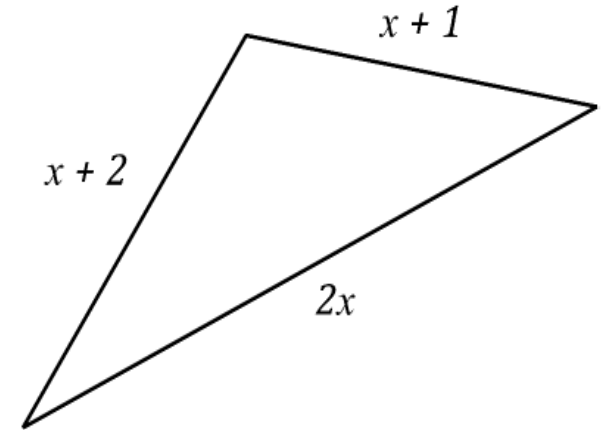
Perimeter = _____

b) $x = 5$

Perimeter = _____

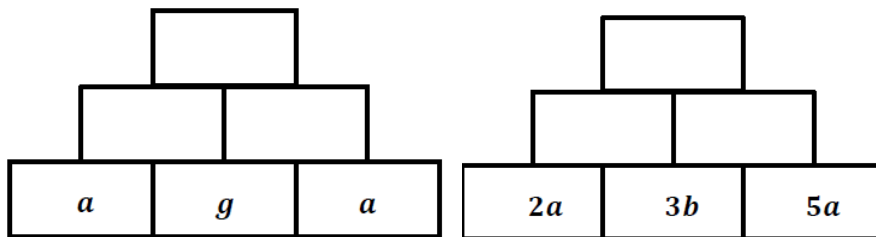
c) $x = 0.6$

Perimeter = _____

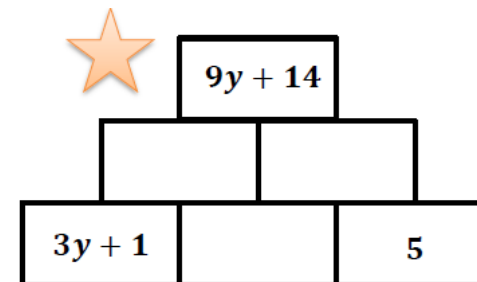


Complete these pyramids.

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.