

## Starter

1. Calculate

a.  $\frac{1}{5} + \frac{2}{3}$

b.  $\frac{3}{4} - \frac{3}{5} + \frac{1}{2}$

c.  $4\frac{1}{5} \times 2\frac{1}{7}$

2. a. Present the data below in an ordered stem and leaf diagram.

35, 21, 25, 47, 34, 37, 42, 45, 51, 23, 23, 27

b. Find the 5-figure summary.

3. Calculate the compound interest gained on an investment of £3410, invested for 6 years at 3.8% per annum.

## Starter

1. Solve the following

a.  $3(2x + 1) + x = 5x + 11$

b.  $8(2x - 2) = 3(4x + 4)$

2. If  $f = 3$ ,  $g = (-2)$ , and  $h = 9$ , evaluate

a.  $fh - 2g$

b.  $(g - f)^2$

c.  $h - (f - g)^2$

3. A straight line has the equation  $7x - 4y + 3 = 0$ .

a. Find the gradient of this line

b. A different straight line, which is parallel to the original line, passes through the point  $(0, 7)$ .

Find the equation of this line.

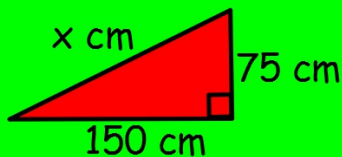
## Starter

- Write each of the following numbers in standard form.
  - 4,350,000
  - 0.00004875
  - 260
- When Sandra died her wealth was divided between her husband and her son in the ratio 2 : 3.  
If her son received £48,000, how much did her husband inherit?
- Find the gradient and coordinates of the y-intercept of:
  - $6y + 4x = 3$
  - $9x - 4y + 3 = 0$
- Find the
  - area of a semi-circle with diameter = 9 cm
  - perimeter of a quarter circle with radius = 15 cm

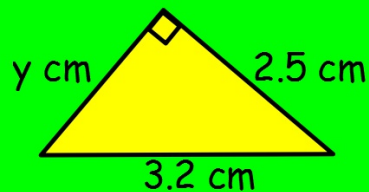
## Starter

1. Find the missing side in each of these triangles

a.



b.



2. A man weighed 218kg on the 1st of January. After beginning a diet by the 1st of February he weighed 203kg.

a. Express his weight loss as a percentage.

b. If he continues losing weight at this rate each month, when will he weigh less than 174kg?

3. Find the equation of the line between the following points:

a. (-4, 6) and (0, 9)

b. (0, -1) and (8, 3)

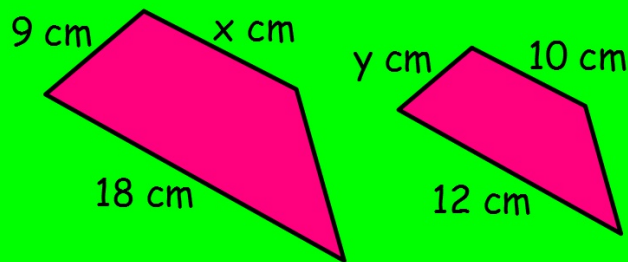
## Starter

1. Fully factorise

a.  $18k^2 - 54k$

b.  $63xy^3 + 28x^4y^2$

2. These shapes are mathematically similar. Find  $x$  and  $y$ .



3. If  $a = (-2)$ ,  $b = (-5)$ , and  $c = 6$ , evaluate

a.  $ac - 3b$

b.  $(a - c)^2 - b^2$

c.  $c - (a - b)^3$

4. An athlete is currently sponsored by Adidas, earning £1.2million a year. After winning the world Championships in their event, they are given a pay rise of 3.7% per annum for 3 years. Calculate their earnings after 3 years, giving your answer to 3 sig figs.