

Starter

1. Round the following to 3 s.f.

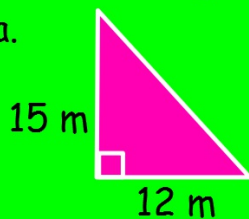
a. 327850

b. 1.5987

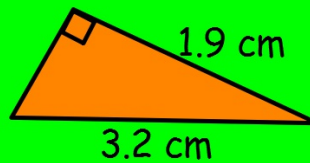
c. 0.008075

2. Find the length of each missing side

a.



b.



3. Find the mode, median and range of the following data set:

45, 71, 49, 51, 63, 72, 46, 59, 61, 63, 52, 68, 70, 57

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

a. $ac - 3b$

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

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

Starter

1. Solve

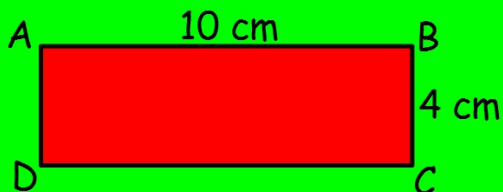
a. $4(4x - 3) = 20$

b. $12(x + 2) - 3(3x - 4) = 1$

2. A Smarties Easter egg contained 9 orange, 6 red, 5 purple and 4 yellow Smarties. What's the probability of choosing a red Smartie?

3. A new antibiotic is being tested in a laboratory. It is found to decrease the number of bacteria present by 19% every hour. If there were 50,000 bacteria present at the start of testing, how long will it take to half the number of bacteria?

4. Calculate the length of the diagonal AC in the rectangle ABCD. Give your answer to 1 d.p.



Starter

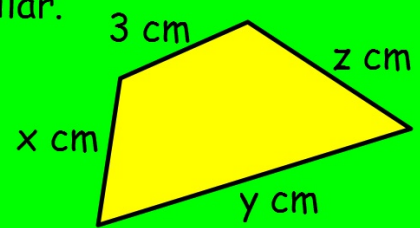
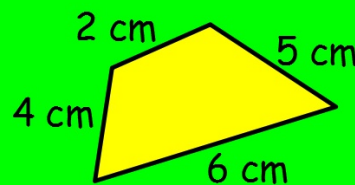
1. Fully factorise

a. $36d^3 - 6cd$

b. $12x^3yz^2 + 30x^2y^2$

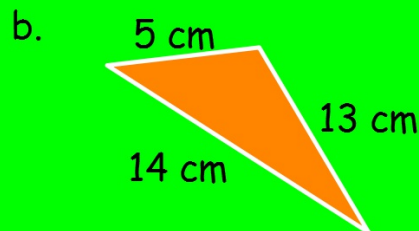
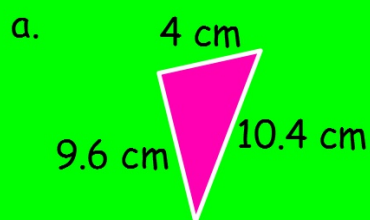
2. The following shapes are mathematically similar.

Find x , y and z .



3. Declan invests £200 in a current account which pays 2.5% interest p.a. How much money will there be in the account after 3 years?

4. Work out if these triangles are right-angled:



Starter

1. Find (**non-calculator**)

a. 12.5% of £480

b. $\frac{5}{8}$ of £1032

2. Solve

a. $8(3x - 2) = 3(7x + 5)$

b. $4(2x - 3) + 7 = 2(1 - x) + 8$

3. A dice is rolled 20 times to give the following results:

1, 5, 3, 2, 4, 6, 1, 2, 6, 3,

3, 5, 2, 1, 4, 6, 1, 3, 6, 4

a. Create a frequency table to show the results.

b. Calculate the mean score from the frequency table.

4. Calculate the length of the line between the coordinate points

A (1, 5) and B (4, 3).

Starter

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

a. $fh - 2g$

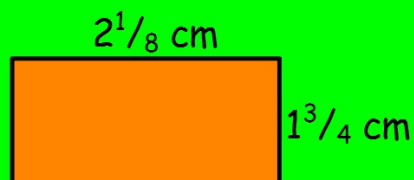
b. $(g - f)^2$

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

2. Calculate

a. the perimeter

b. the area of this rectangle



3. A cereal box measures 20 cm by 27.5 cm by 5 cm.

a. Calculate the volume of the box

b. A container for these boxes measures 75 cm by 200 cm by 40 cm.

Could 150 cereal boxes fit into the container?

4. An aircraft flies 75 km due North and then 70 km due West.

Calculate how far the aircraft would have travelled if it had taken the direct route.