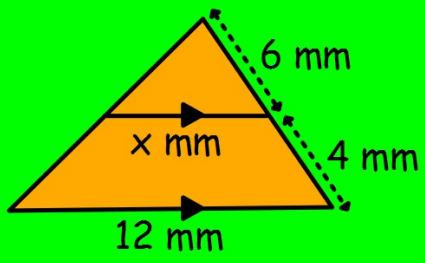
Starter

1. A hemisphere has radius 3.77cm.
   Find its volume correct to 3 significant figures.

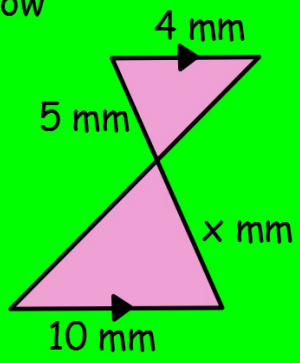
2. A house increases in value by 15%. Its new price is £460,000.
   What was its original price?
   Write your answer in scientific notation.

3. Find the value of x in each shape below

   a.



   b.



Starter

1. Calculate
   a. $^{2}/_{5} \times {}^{3}/_{7}$ b. $^{3}/_{4} - {}^{1}/_{5}$ c. $2^{1}/_{3} \div {}^{4}/_{9}$

2. A straight line has equation $4x - y = 9$.
   a. Find its gradient and y-intercept.

   A parallel line has y-intercept (0, -7).
   b. Write down the equation of this line.

3. It takes $96.82cm^3$ of slush puppy to fill a cone completely.
   If the cone's radius is 4.1cm, find its height.
   Round your answer to 1 significant figure.

4. A Sprinter train travels at an average speed of 144 kmph. The train takes 1 hour 15 minutes to travel between Dingwall and Aberdeen.
   Calculate the distance between Dingwall and Aberdeen.

Starter

1. Which shape has a larger volume - a cylinder with diameter 12m and height 14m or a sphere with diameter 14.46m?

2. Line AB passes through the point (0, -7).
   Line AB is parallel to the line with equation $y = 4x - 5$.
   What is the equation of line AB?

3. A rally driver is covering a stage in a rally which is 140 km long.
   How long will it take the driver if he travels at an average speed of 80 kmph?

4. Solve

   a. $\frac{2(x-2)}{3} - x = \frac{3x}{2}$

   b. $\frac{3}{4}(x - 2) > 2x$

Starter

1. Find the gradient and the y-intercept of each straight line below.
   a. $3y = 9x + 7$ b. $2x - 4y = 7$ c. $x - 3y - 3 = 0$

2. A large carton holds 4.6 litres of milk.
   Josh uses 21.4% of the milk remaining every morning on his cereal.
   If he buys a new carton on Sunday night, on which day will he have less than half the milk remaining?

3. Solve
   a. $\frac{2}{3}g - 2 > 5$ b. $6 - \frac{5}{8}(2x + 3) = 3x - 4$

Starter

1. Calculate the gradient of the line
   a. Joining (3, -2) to (7, -8)
   b. Parallel to the line $4y - 3x - 8 = 0$

2. After trick or treating, Sarah has 2.5kg of sweets.
   a. Convert this to grams.

   The amount of sweets she has left depreciates by 7.2% per minute.
   b. How many sweets does she have left after half an hour?
      Give your answer correct to the nearest whole sweet.

3. Calculate the diameter (correct to 3 s.f.) of
   a. A cylinder with volume $247cm^3$ and height 5.3cm.
   b. A sphere with volume $7693m^3$.