Similar Shapes
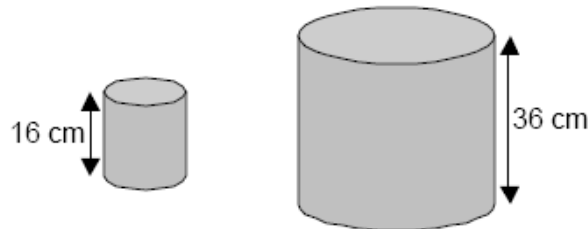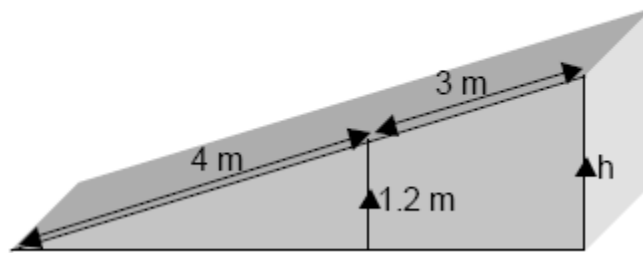
1. Two hollow cylinders are mathematically similar. The smaller cylinder is made from 800cm² sheet of aluminium.
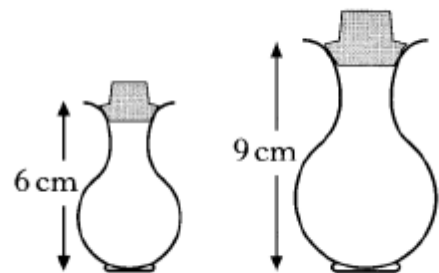
   What area of aluminium is needed to make the larger cylinder?
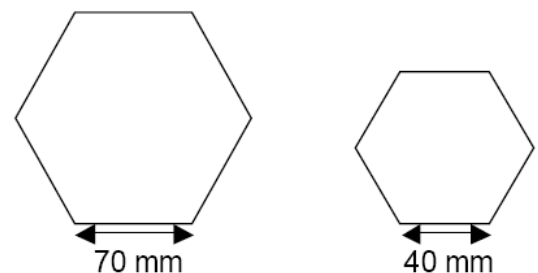
   16 cm

   36 cm

2. After walking 4 metres up a ramp a boy is 1.2 metres above the ground. How far above the ground will the boy be after walking a further 3 metres?
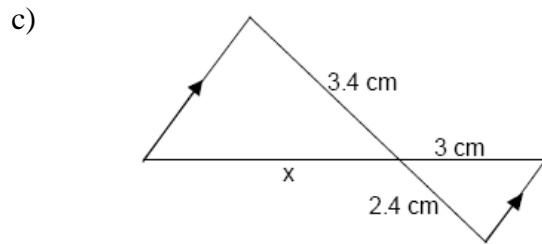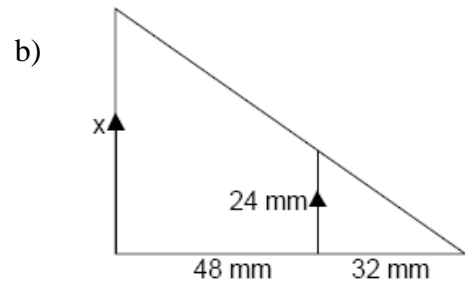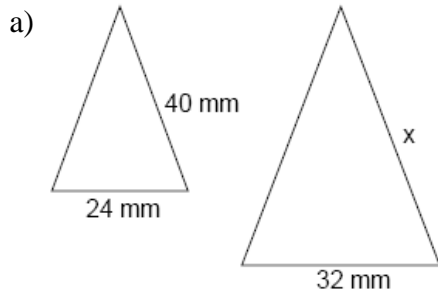
   3 m

   4 m

   1.2 m

   h

3. Two perfume bottles are mathematically similar in shape.
   The smaller one is 6cm high and holds 30ml of perfume.
   The larger one is 9cm high.
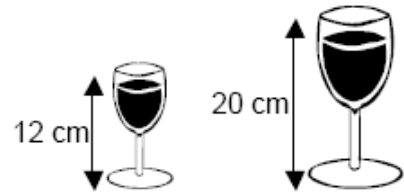   What volume of perfume will the larger one hold?

   6 cm

   9 cm

4. Two regular hexagons are mathematically similar in shape.
   The larger hexagon has an area of 7350mm
   Find the area of the smaller hexagon.

   70 mm

   40 mm

5. In each question below the triangles given are similar. Calculate x in each case.

a)

40 mm

24 mm

x

32 mm

b)

x

24 mm

48 mm   32 mm

c)

3.4 cm

3 cm

x

2.4 cm

6. The wine glasses shown are similar in shape.
The smaller glass can hold 135ml of wine.
How much wine can the larger glass hold?

12 cm

20 cm

7. The foot of a window cleaner's ladder is 2 metres from the base of a wall and rests against a block of flats a further 5 metres away.
    Calculate h, how far up the block of flats the ladder reaches.

h

1.9 m

5 m   2 m