

- 1 At an awards ceremony, both the first prize and the second prize are statues. The statues are mathematically similar and made from the same material. The first prize statue is 20 cm tall and the second prize statue is 15 cm tall.

(a) The diameter of the base of the **smaller** statue is 6 cm.

Calculate the diameter of the base of the larger statue.

(a) ..... cm [3]

(b) The **larger** statue has a mass of 700 g.

Calculate the mass of the smaller statue.

(b) ..... g [3]

2 Solve algebraically these simultaneous equations.

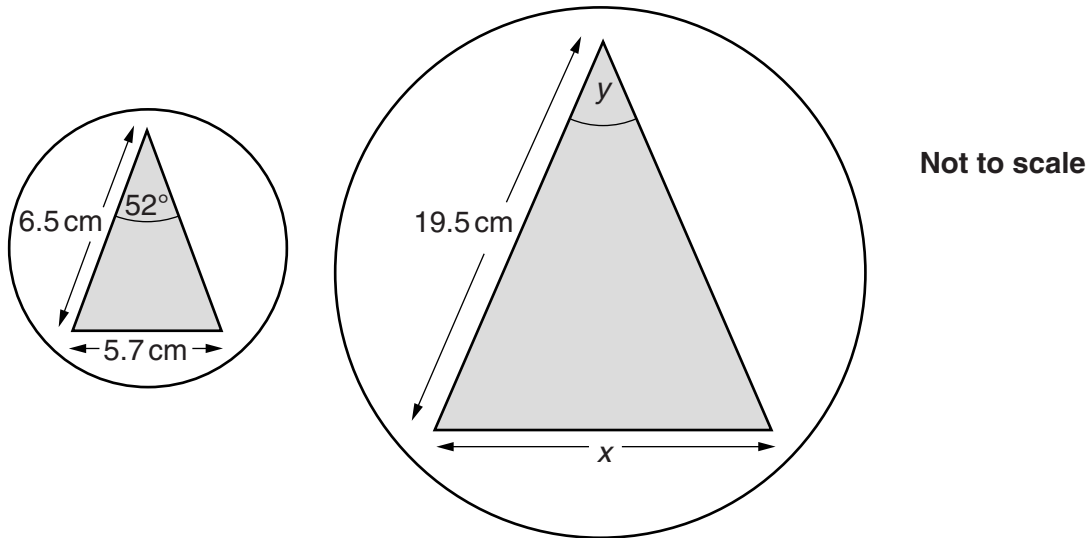
$$3x + 4y = 17$$

$$5x - 6y = 22$$

$$x = \underline{\hspace{10cm}}$$

$$y = \underline{\hspace{10cm}} \quad \mathbf{[4]}$$

3 These diagrams are mathematically similar.



(a) Calculate the length  $x$ .

(a) \_\_\_\_\_ cm [3]

(b) What is the size of angle  $y$ ?

(b) \_\_\_\_\_ ° [1]

(c) The area of the smaller circle is  $51 \text{ cm}^2$ .

Calculate the area of the larger circle.

(c) \_\_\_\_\_  $\text{cm}^2$  [2]