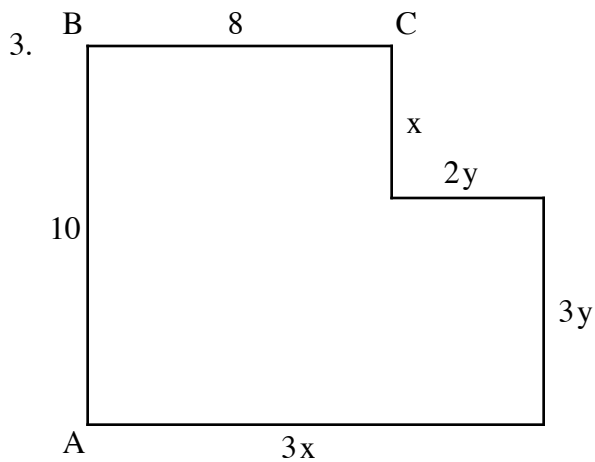# HOME EXERCISE 15

Set out carefully all appropriate working.

Do **not** use a calculator in questions 1, 2 or 3.
Use a calculator in questions 4 and 5.

1. Evaluate: $\qquad\qquad\qquad\qquad\qquad\qquad\qquad 3\frac{2}{5} - 1\frac{5}{9} \times \frac{6}{7}$ (3)

2. Remove the brackets and simplify fully: $(3t - 5)(t - 2) - 3t(t - 4)$ (3)

3.

In the diagram shown the shape is formed from two rectangles. The lengths of the sides are in centimetres.
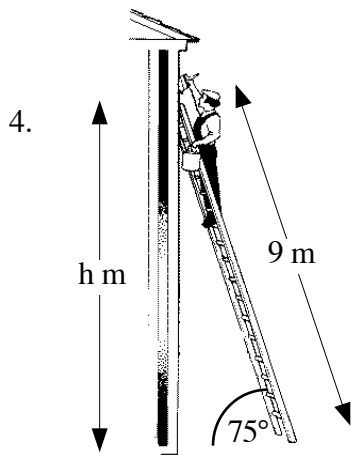
(a) Write an expression in terms of x and y for the length of edge:

   (i) AB (1)

   (ii) BC. (1)

(b) Write two equations in terms of x and y for edges AB and BC. (1)

(c) Find the value of x and y. (3)
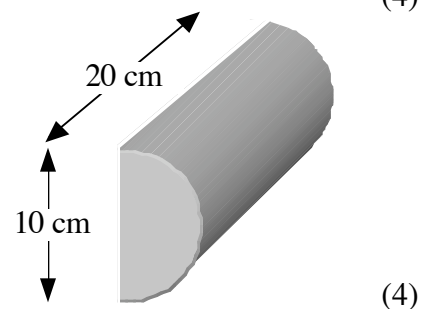
4.

Peter is painting the side of his house.

To be safe the ladder should make an angle of 75° with the ground.

Peter is using a ladder 9 metres long, arranged so that the ladder is touching the wall at a height of h metres above the ground, as shown in the diagram.

Find the value of h. (4)

5. The diagram shows a prism, depth is 20 centimetres.
   The front face is a semicircle, diameter 10 centimetres.

   Calculate the volume of the prism. (4)

Total 20 marks