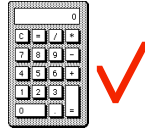


Chapter 23



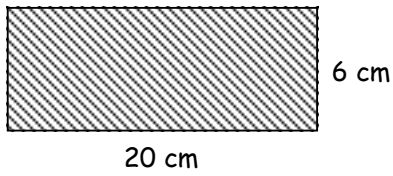
Calculators may be used in this Chapter where appropriate.

Areas

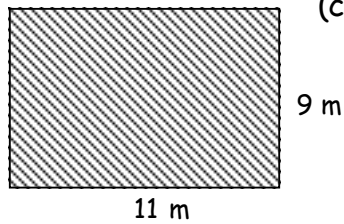
Exercise 1

- Write down the formula for the area of a rectangle.
- Find the area of each shape below (show formula and working) :-

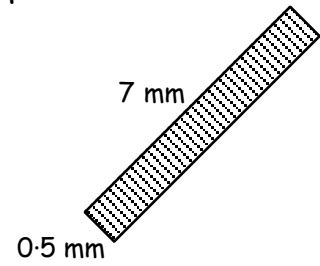
(a)



(b)



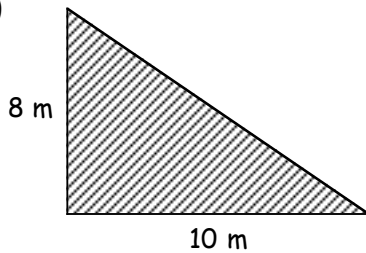
(c)



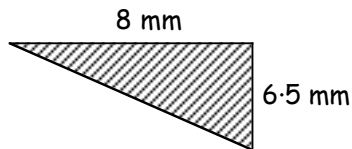
- Explain how you would find the area of a right angled triangle.

- Find the area of each right angled triangle below :-

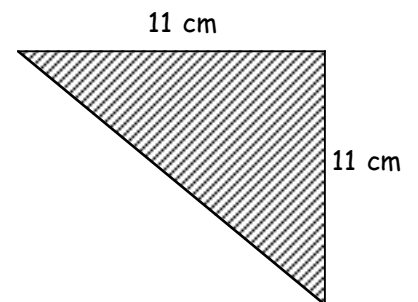
(a)



(b)

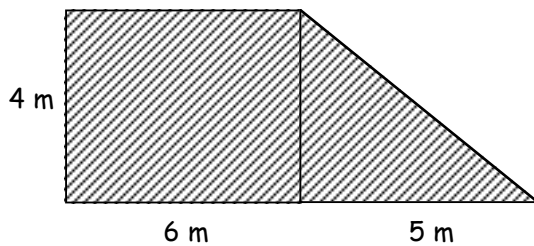


(c)

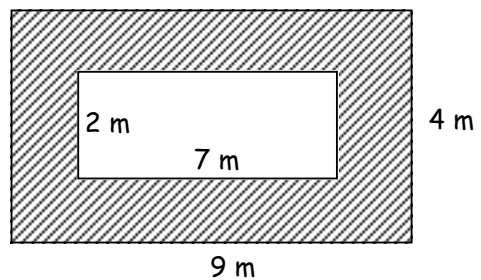


- Calculate the shaded area each time here :-

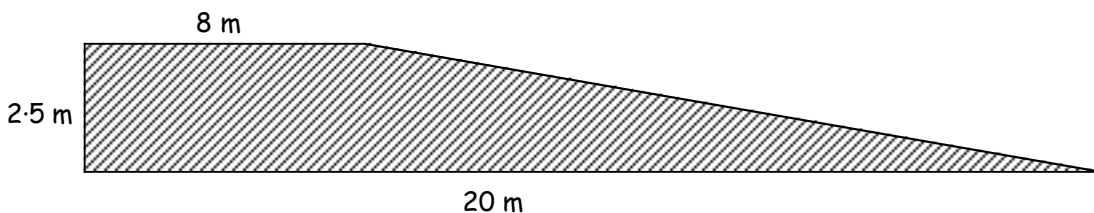
(a)



(b)

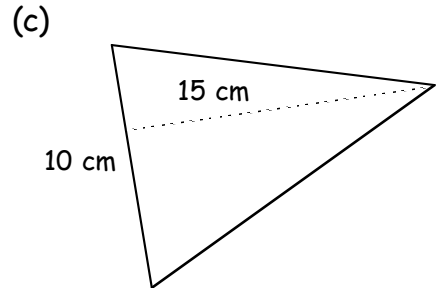
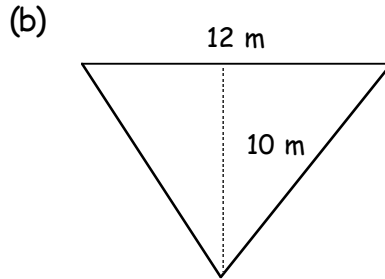
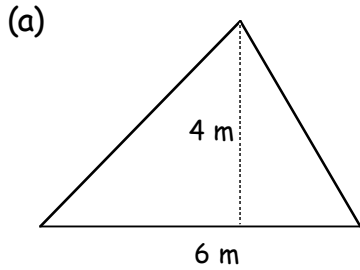


(c)

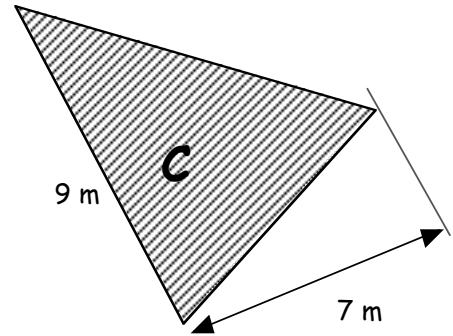
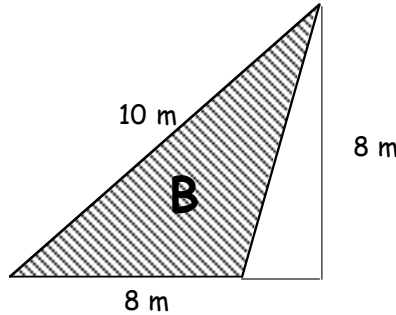
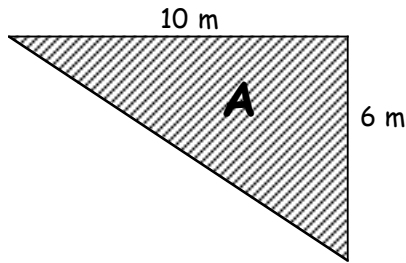


Exercise 2

- Write down the formula for the area of any triangle.
- Use the formula each time to calculate the area of :-

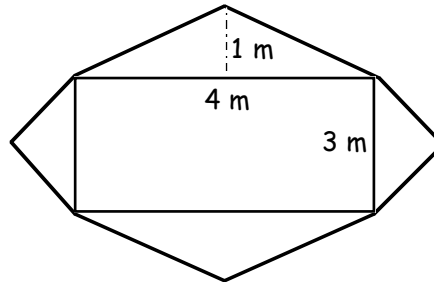


- Which of the three triangles has the smallest area :-

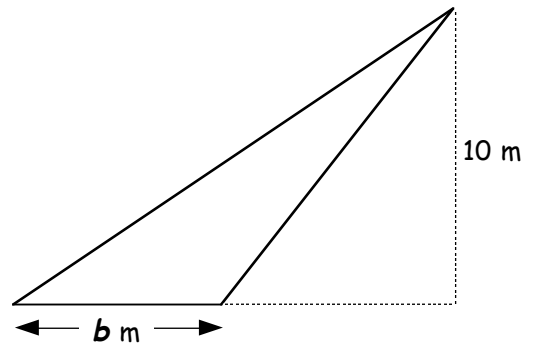
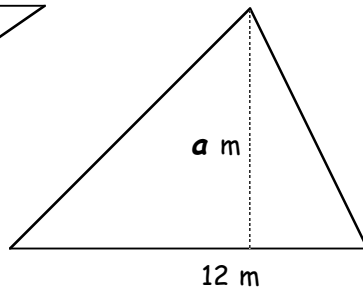
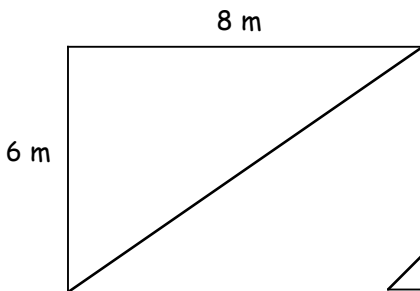


- A company logo uses a rectangle (4 metres by 3 metres) and two pairs of isosceles triangles, each with height 1 metre, as shown.

Calculate the **total area** of the logo.

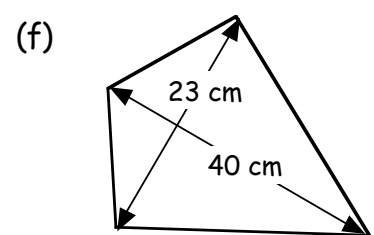
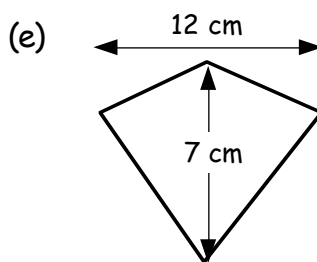
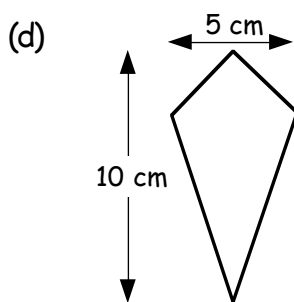
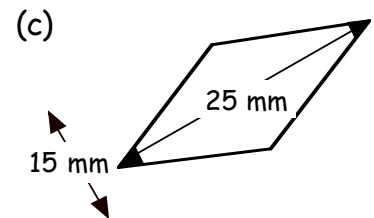
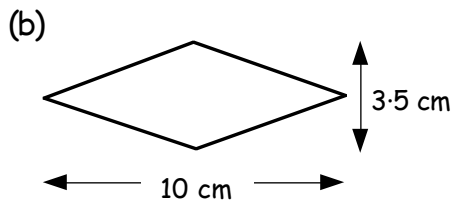
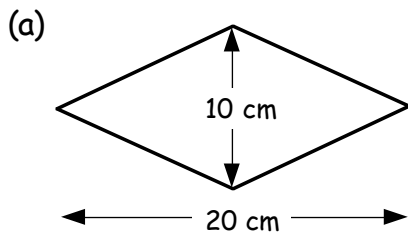


- Given that all three triangles below have the same area, find the values of **a** and **b**.

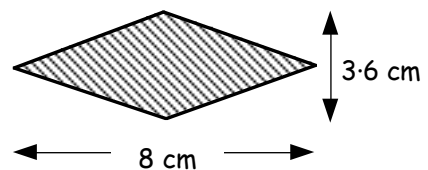
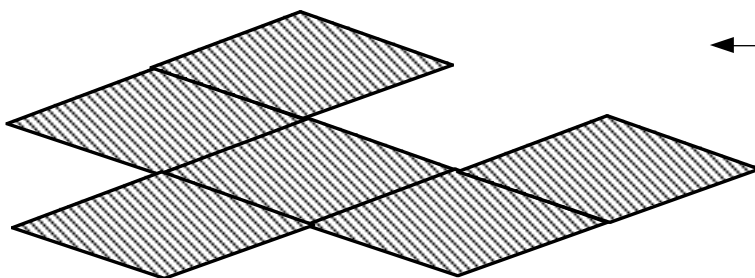


Exercise 3

- Write down the formula for the area of a Rhombus or Kite.
- Use your formula to calculate the area of each shape.

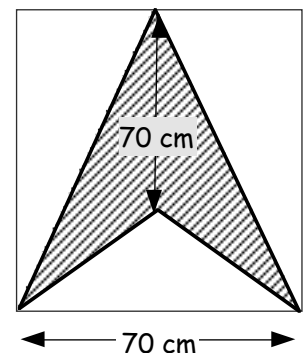


- Six identical silver rhombi (like the one shown) are made into a pendant below.



Find the total area of the pendant.

- Calculate the shaded area of the V-kite shown.

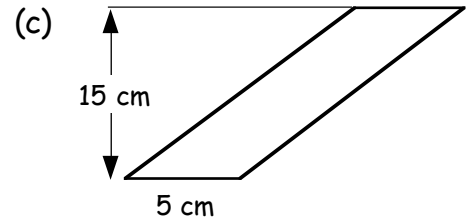
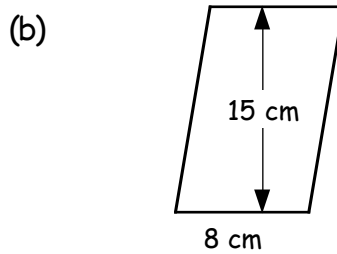
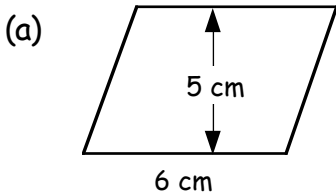


- A rhombus has the **same area** as the V-kite in question 4.
If the rhombus has one diagonal length of 100 centimetres, find the length of the other diagonal.

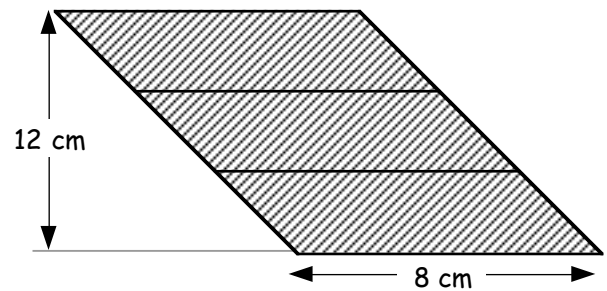
Exercise 4

1. Write down the formula for the area of a parallelogram.

2. Calculate the area of each parallelogram below :-

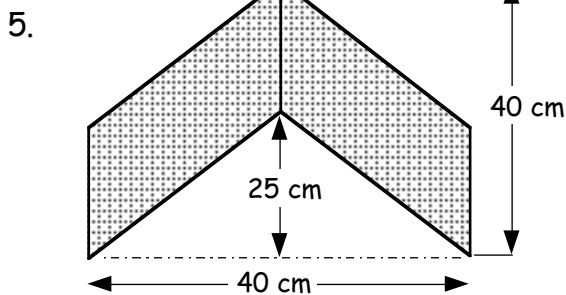


3. Three identical parallelograms are put together as shown.
Find the area of **one** of the parallelograms.



4. A large parallelogram has an area of 125 square centimetres.

If the parallelogram has a height of 10 centimetres,
find the length of its base.



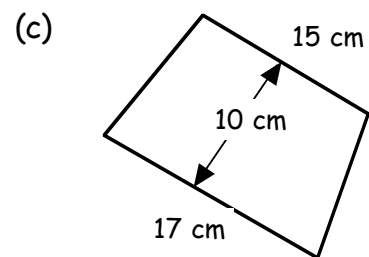
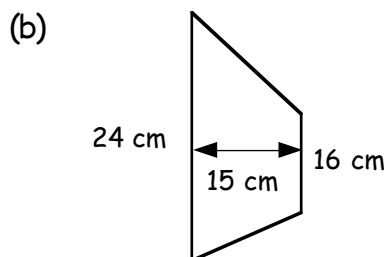
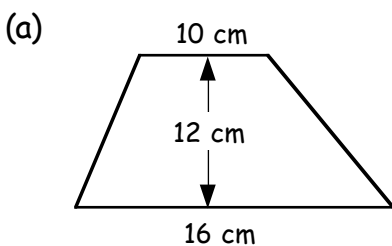
An "ARROW" sign is formed from 2 identical parallelograms.

Calculate the area of the sign.

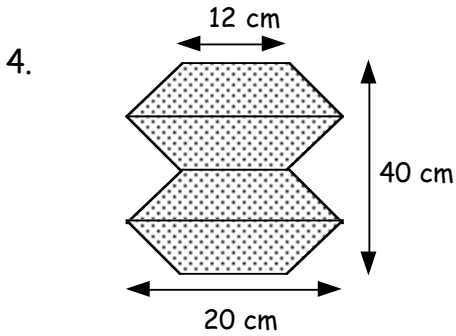
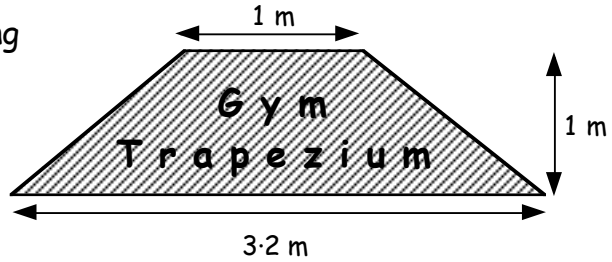
Exercise 5

1. Write down the formula for the area of a trapezium.

2. Use the formula to calculate the area of each trapezium below :-

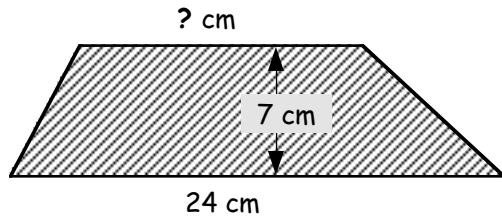


3. At the *Gym Trapezium*, a sign has been hung over the doorway with dimensions shown.
Calculate the area of the sign.



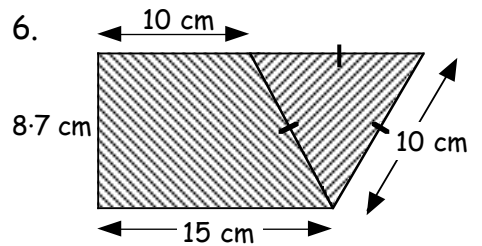
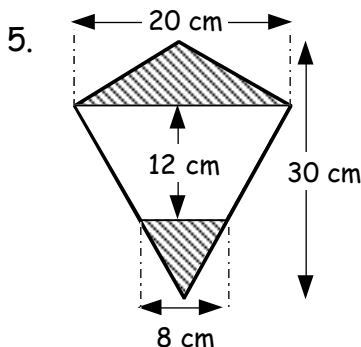
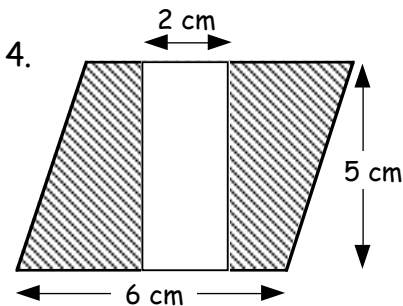
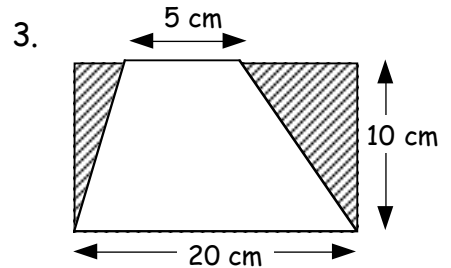
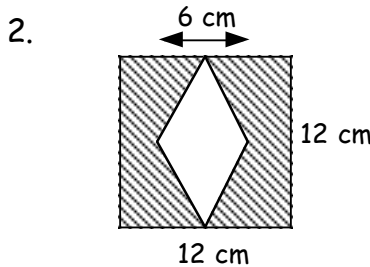
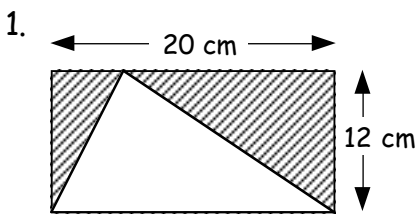
- Four identical trapezia are joined together as shown for a company logo.
Calculate the area of the sign.

5. The area of the trapezium shown is 154 cm^2 .
Calculate the length of the missing dimension.



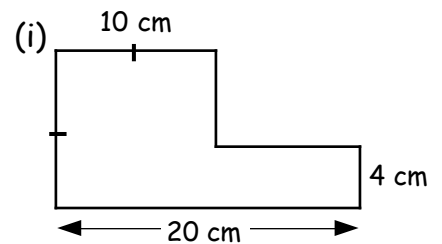
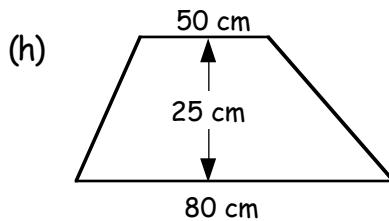
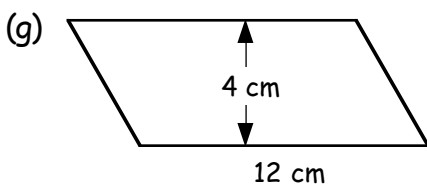
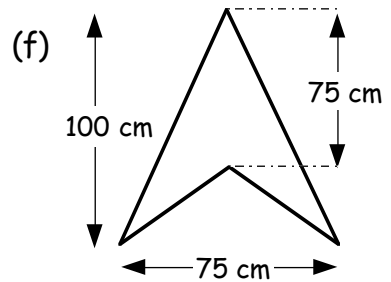
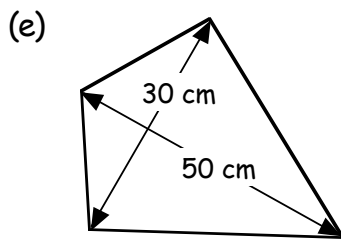
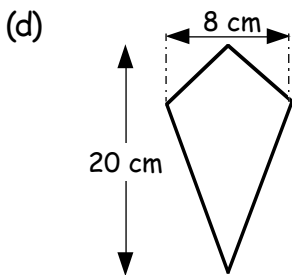
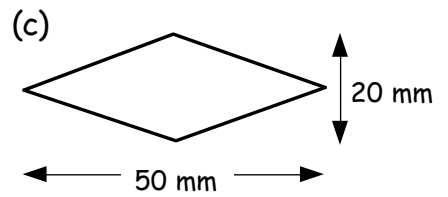
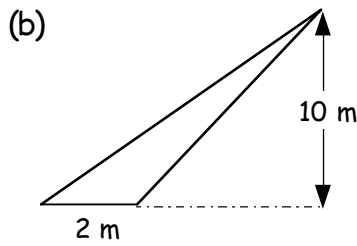
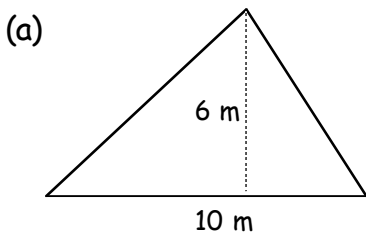
Exercise 6

For each shape below, use an appropriate formula and calculate the **shaded** areas :-
(Show **all** your formulae and working)

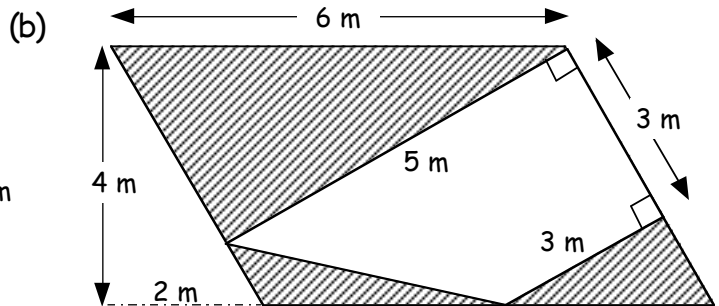
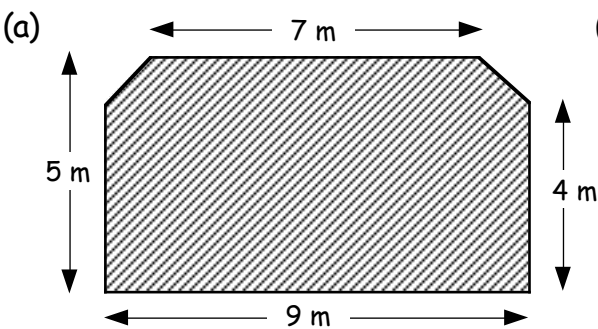


Revision Exercise

1. Calculate the area of each of the following shapes (show all formulae and working) :-



2. Calculate the **shaded** area of each of the following composite shapes :-



3. Calculate the length of the missing dimension in each of the following shapes :-

