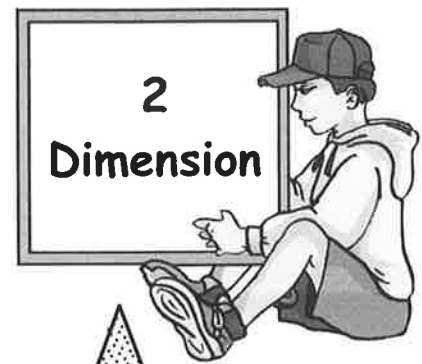


# CHAPTER 10

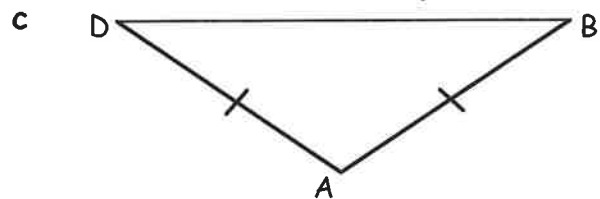
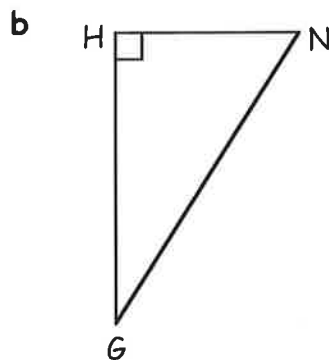
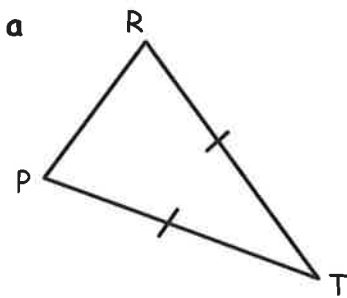
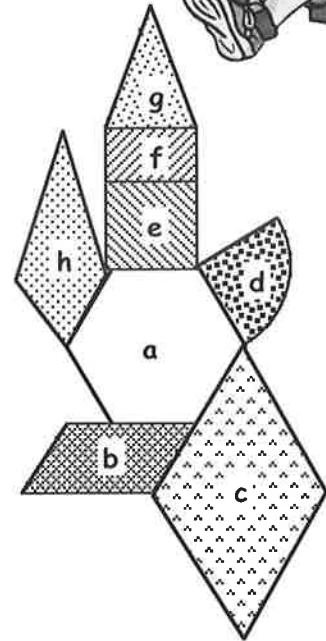


## Consolidation

- Name the eight mathematical shapes you can see in the figure shown opposite.
- Using one description from each box, name and describe each of the triangles below fully.

scalene triangle  
isosceles triangle  
equilateral triangle

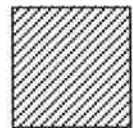
acute angled  
obtuse angled  
right angled



- If a circle has a radius of 10.5 metres, what is the length of its diameter?

## Exercise 1

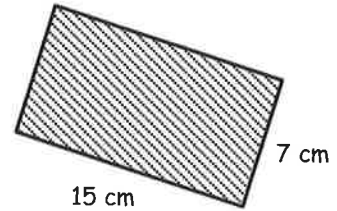
- A square has quarter-turn symmetry. Write down 4 more properties for a square.
- A square has length 8 cm. Calculate its :- a perimeter b area.
- A square has perimeter 60 cm. How long are its sides?
- A square has an area of  $100 \text{ mm}^2$ . What is its perimeter?



## Exercise 2

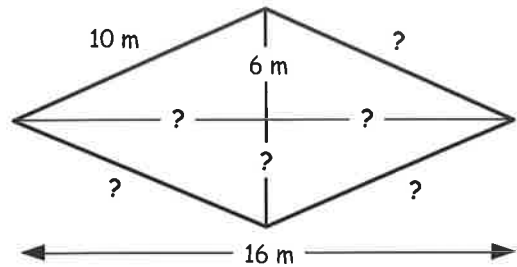
- A rectangle's diagonals bisect each other.  
Write down four more properties for a rectangle.

2. Calculate :-     a the perimeter  
                          b the area of this rectangle.
3. Draw any rectangle with a perimeter of 18 cm.



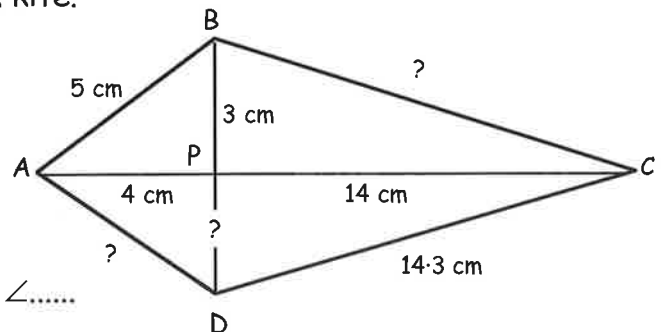
### Exercise 3

1. A rhombus has four equal sides. Write down **four** more properties for a rhombus.
2. Make a neat sketch of this rhombus and mark in all the 6 missing lengths.
3. What is the perimeter of this rhombus ?
4. a Draw a rhombus with diagonals of length 6 cm and 8 cm.  
b What is the length of each of its sides ?



### Exercise 4

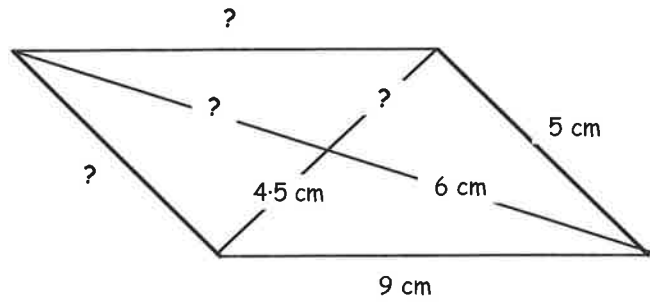
1. A kite has two pairs of sides the same length. Write down **four** more properties for a kite.
2. a Make a neat sketch of kite ABCD and mark in the 3 missing lengths.  
b Copy and complete, using letters :-  
    (i)  $AB = \dots$            (ii)  $CD = \dots$   
    (iii)  $PD = \dots$        (iv)  $\angle DAP = \angle \dots$   
    (v)  $\angle ABP = \angle \dots$    (vi)  $\angle BCP = \angle \dots$   
c What is the perimeter of this kite ?



### Exercise 5

1. "A parallelogram has one line of symmetry". Is this statement true ?  
Write down **four** true properties for a **parallelogram**.
2. What name is given to a parallelogram with diagonals which meet at  $90^\circ$  ?

3. a Make a neat sketch of this parallelogram and mark in the four missing lengths.  
 b What is the perimeter of this parallelogram ?

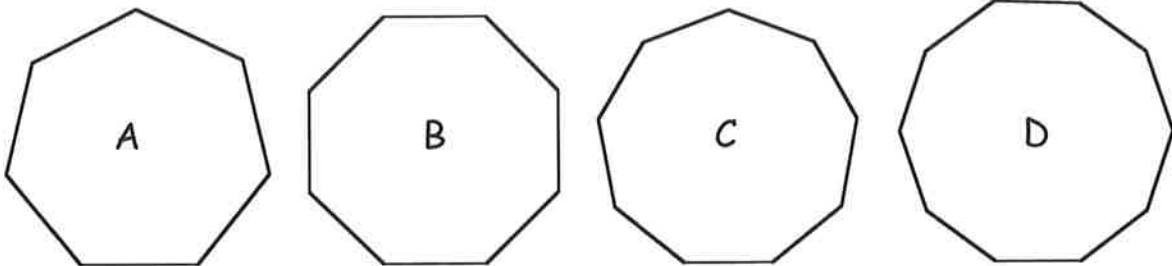


### Exercise 6

1. Answer TRUE or FALSE.
- A square has 4 equal sides and its 4 angles are  $90^\circ$ .
  - A rectangle's diagonals bisect each other at  $90^\circ$ .
  - A parallelogram has 1 line of symmetry.
  - A rhombus has 4 equal sides and has only 2 lines of symmetry.
  - A kite has 2 lines of symmetry.
  - A rhombus fits into its outline in exactly 4 ways.
  - A kite's diagonals meet at  $90^\circ$ , but only one bisects the other.
  - A parallelogram doesn't have half turn symmetry.
  - A rectangle has quarter turn symmetry.
  - A rectangle has 2 lines of symmetry, which are its diagonals.

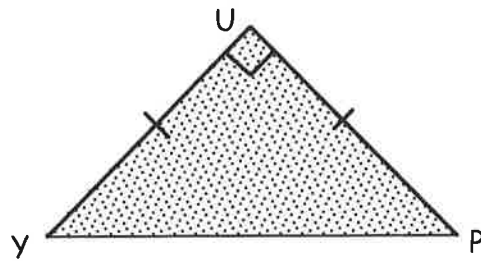
### Revision Exercise

1. Write down the names of each of these polygons.

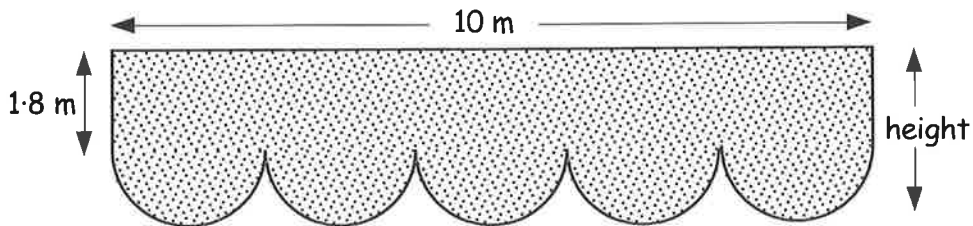


2. Make a neat sketch of :-
- Triangle KLM, an acute angled scalene triangle.
  - Triangle PQR, a right angled isosceles triangle.
  - Triangle ADE, an obtuse angled isosceles triangle.

3. Name and describe this triangle fully.



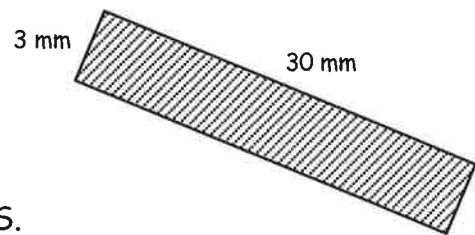
4. This shop canopy has five identical semi-circles beneath a rectangle.



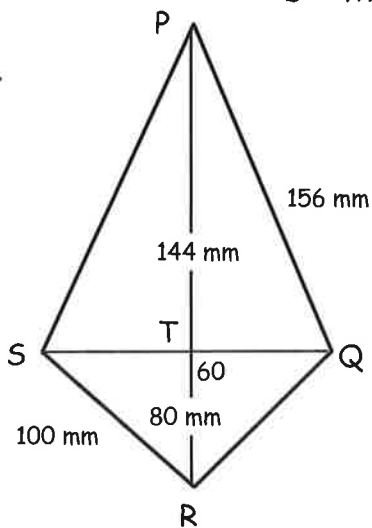
- Calculate the length of the diameter of one semi-circle.
- What must the radius be ?
- Now calculate the height of the canopy.

5. Draw a square with perimeter 22 cm.

6. Calculate :-
- the perimeter
  - the area of this rectangle.



7.



Look at kite PQRS.

- What is the length of :-  
(i) ST (ii) PS (iii) RQ ?
- Write down an angle equal to :-  
(i)  $\angle PST$  (ii)  $\angle QRT$ .

8. Answer TRUE or FALSE.

- A rectangle's diagonals bisect the end angles.
- A square has quarter turn symmetry.
- Only one diagonal of a kite bisects the other.
- A rhombus has its opposite sides parallel.
- The diagonals of a rectangle bisect each other at  $90^\circ$ .