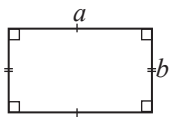
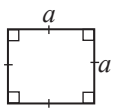
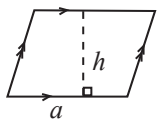
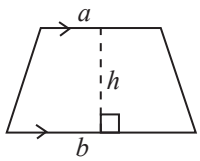
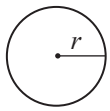
6 Area

By studying this lesson you will be able to

- find the areas of sectors of circles,
- solve problems related to the areas of plane figures containing sectors of circles.

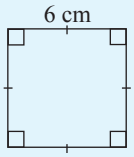
Areas of plane figures

Let us recall some facts you have learnt in previous grades under the topic **Area**.

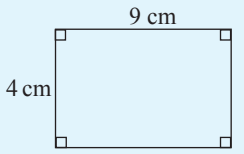
Name	Plane Figure	How the area is calculated	Formula for the area (A)
Rectangle		length × breadth	$A = a \times b$
Square		(length of a side)^2	$A = a^2$
Parallelogram		base × altitude	$A = a \times h$
Triangle		$\frac{1}{2}$ × base × altitude	$A = \frac{1}{2} \times a \times h$
Trapezium		$\frac{1}{2}$ × sum of the lengths of the parallel sides × altitude	$A = \frac{1}{2}(a+b) \times h$
Circle		π × (radius)^2	$A = \pi r^2$

Review Exercise

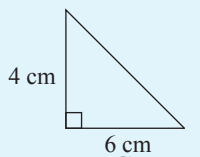
1. Find the area of each of the following plane figures.



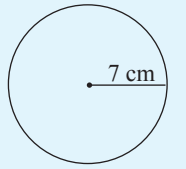
A



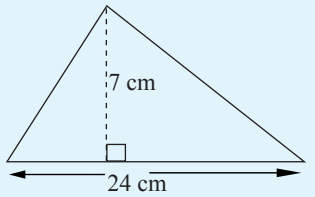
B



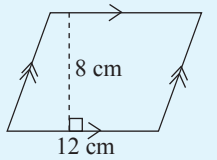
C



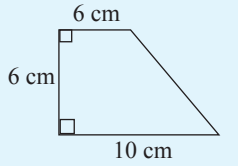
D



E



F



G

2. The rectangle in Figure *C* has been formed by joining together the trapezium in Figure *A* and the triangle in Figure *B*.

Figure *A*

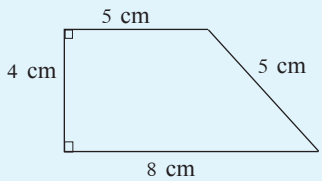


Figure *B*

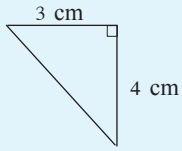
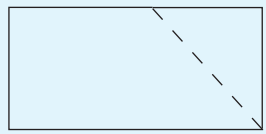


Figure *C*

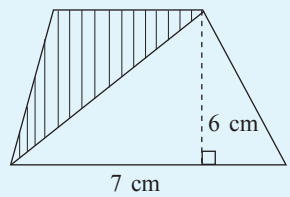


(i) Find the area of the trapezium in Figure *A*.

(ii) Find the area of the triangle in Figure *B*.

(iii) Find the area of the rectangle in Figure *C* in terms of the areas of Figure *A* and Figure *B*.

3. The figure denotes a trapezium of area 33 cm^2 that has been formed by joining two triangles together. Find the area of the triangle which is shaded.



4. The figure denotes a parallelogram of area 120 cm^2. Its perimeter is 64 cm. Determine the following based on the information that is given.

(i) The length of the side *CD*.

(ii) The length of the side *BC*.