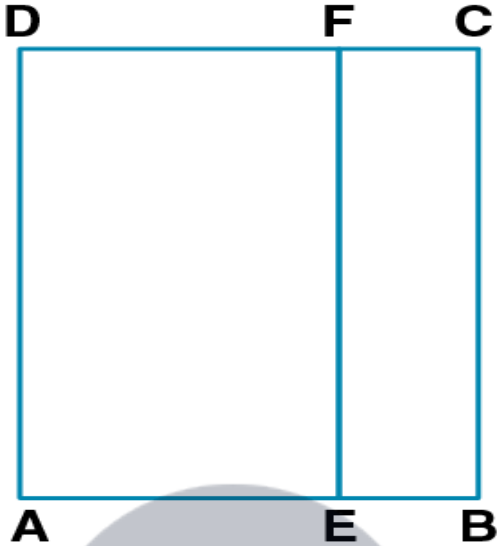


1. ABCD is a square of side 24 cm. EF is parallel to BC and AE = 15 cm. By how much does

- (i) the perimeter of AEFB exceed the perimeter of EBCF?
- (ii) the area of AEFB exceed the area of EBCF?



Solution:

Given

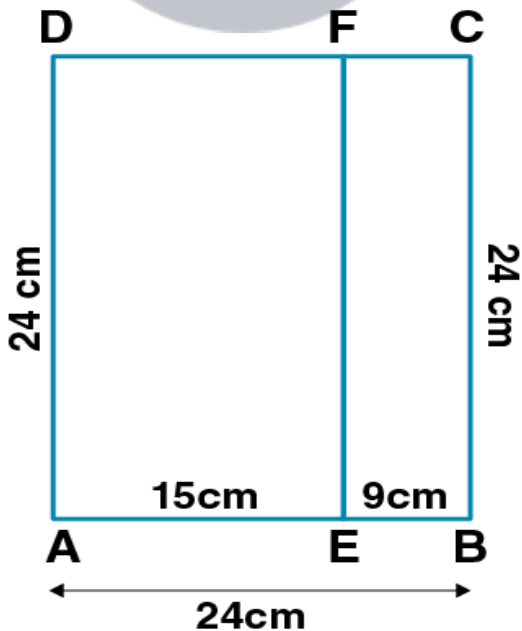
The side of the square ABCD = 24 cm

$EF \parallel BC \parallel AD$

AE is of length 15 cm

$EB = 24 - 15$

$EB = 9$ cm



$$\begin{aligned} \text{(i) Perimeter of AEFD} &= 2 (15 + 24) \text{ cm} \\ &= 2 (39) \text{ cm} \end{aligned}$$

We get,
 $= 78 \text{ cm}$

$$\begin{aligned} \text{Perimeter of EBCF} &= 2 (9 + 24) \text{ cm} \\ &= 2 (33) \text{ cm} \end{aligned}$$

We get,
 $= 66 \text{ cm}$

Now,
Difference between the two perimeters $= 78 - 66$
 $= 12 \text{ cm}$

$$\begin{aligned} \text{(ii) Area of AEFD} &= l \times b \\ &= 15 \times 24 \end{aligned}$$

We get,
 $= 360 \text{ sq. cm}$

$$\begin{aligned} \text{Area of EBCF} &= 9 \times 24 \\ &= 216 \text{ sq. cm} \end{aligned}$$

Now, difference between the two areas $= 360 - 216$
 $= 144 \text{ sq. cm}$

2. Nagma runs around a rectangular park 180 m long and 120 m wide at the rate of 7.5 km/ hour. In how much time will she complete five rounds?

Solution:

$$\text{Length of rectangular plot (l)} = 180 \text{ m}$$

$$\text{Breadth of rectangular (b)} = 120 \text{ m}$$

$$\begin{aligned} \text{Perimeter} &= 2 (l + b) \\ &= 2 (180 + 120) \text{ m} \\ &= 2 (300) \end{aligned}$$

We get,
 $= 600 \text{ m}$

$$\begin{aligned} \text{Distance travelled in 5 rounds} &= 600 \times 5 \\ &= 3000 \text{ m i.e} \\ &= 3 \text{ km} \end{aligned}$$

$$\text{Given speed} = 7.5 \text{ km/hr}$$

$$\begin{aligned} \text{Time taken} &= (3 / 7.5) \text{ h} \\ &= \{(3 \times 10) / 75\} \text{ h} \\ &= (30 / 75) \text{ h} \end{aligned}$$

We get,
 $= (2 / 5) \text{ h}$

$$\begin{aligned} &= (2 / 5) \times 60 \\ &= 2 \times 12 \\ &= 24 \text{ minutes} \end{aligned}$$

3. The area of a rectangular plot is 540 m^2 , if its length is 27 m , find its breadth and perimeter.

Solution:

Given

Area of a rectangular plot = 540 m^2

Length (l) = 27 m

Therefore,

Breadth = (Area) / (Length)

$$= (540 / 27) \text{ m}$$

We get,

$$= 20 \text{ m}$$

And Perimeter = $2 (l + b)$

$$= 2 (27 + 20) \text{ m}$$

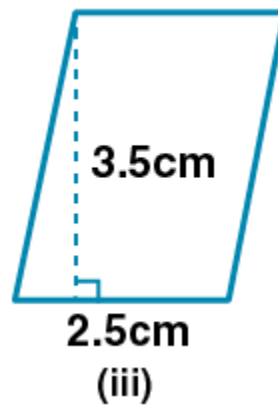
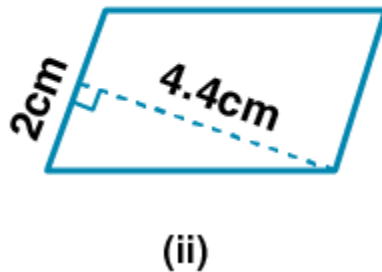
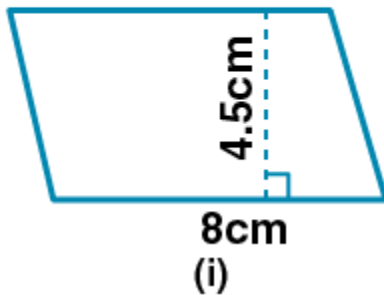
$$= 2 (47) \text{ m}$$

We get,

$$= 94 \text{ m}$$

Therefore, the breadth of the rectangular plot is 20 m and its perimeter is 94 m

4. Find the area of each of the following parallelogram:



Solution:

(i) Base of the parallelogram (b) = 8 cm and

Height of the parallelogram (h) = 4.5 cm

Area = Base \times Height

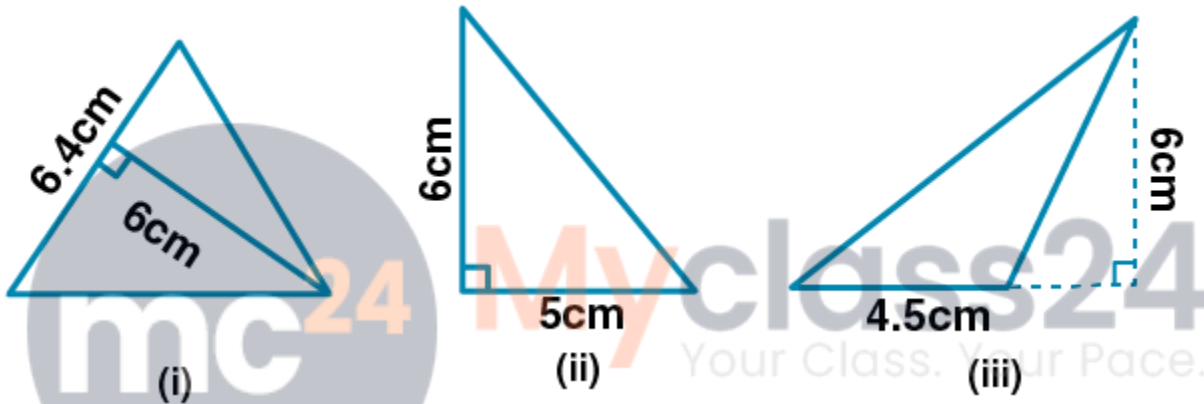
$$= 8 \times 4.5$$

$$= 36 \text{ cm}^2$$

(ii) Base of the parallelogram (b) = 2 cm
Height of the parallelogram (h) = 4.4 cm
Area = Base \times Height
= 2×4.4
= 8.8 cm^2

(iii) Base of the parallelogram (b) = 2.5 cm
Height of the parallelogram (h) = 3.5 cm
Area = Base \times Height
= 2.5×3.5
= 8.75 cm^2

5. Find the area of each of the following triangles:



Solution:

(i) Base of the triangle (b) = 6.4 cm
Height of the triangle (h) = 6 cm
Area of the triangle = $(1 / 2) \times \text{base} \times \text{height}$
= $(1 / 2) \times 6.4 \times 6 \text{ cm}^2$
We get,
= 19.2 cm^2

(ii) Base of the triangle (b) = 5 cm
Height of the triangle (h) = 6 cm
Area of the triangle = $(1 / 2) \times \text{base} \times \text{height}$
= $(1 / 2) \times 5 \times 6$
We get,
= 15 cm^2

(iii) Base of the triangle (b) = 4.5 cm
Height of the triangle (h) = 6 cm
Area of the triangle = $(1 / 2) \times \text{base} \times \text{height}$
= $(1 / 2) \times 4.5 \times 6$

We get,
 $= 13.5 \text{ cm}^2$

6. Find the circumference of the circles with the following radius:

(i) 7 cm

(ii) 21 cm

(iii) 28 mm

(iv) 3.5 cm

Solution:

(i) Radius of the circle (r) = 7 cm

We know that,

Circumference of the circle = $2\pi r$

$$= 2 \times (22 / 7) \times 7$$

We get,

$$= 44 \text{ cm}$$

Hence, the circumference of the circle is 44 cm

(ii) Radius of the circle (r) = 21 cm

We know that,

Circumference of the circle = $2\pi r$

$$= 2 \times (22 / 7) \times 21$$

We get,

$$= 132 \text{ cm}$$

Hence, the circumference of the circle is 132 cm

(iii) Radius of the circle (r) = 28 mm

We know that,

Circumference of the circle = $2\pi r$

$$= 2 \times (22 / 7) \times 28$$

We get,

$$= 176 \text{ mm}$$

Hence, the circumference of the circle is 176 mm

(iv) Radius of the circle = 3.5 cm

We know that,

Circumference of the circle = $2\pi r$

$$= 2 \times (22 / 7) \times 3.5$$

We get,

$$= 22 \text{ cm}$$

Hence, the circumference of the circle is 22 cm

7. Find the area of the circles, given that:

(i) radius = 14 mm

(ii) diameter = 49 m

(iii) diameter = 9.8 m

(iv) radius = 5 cm

Solution:

(i) Radius (r) = 14 mm

Hence,

$$\text{Area} = \pi r^2$$

$$= (22 / 7) \times 14 \times 14$$

We get,

$$= 616 \text{ cm}^2$$

Therefore, the area of the circle is 616 cm²

(ii) Diameter = 49 m

Hence,

$$\text{Radius} = (49 / 2) \text{ m}$$

$$\text{Area} = \pi r^2$$

$$= (22 / 7) \times (49 / 2) \times (49 / 2)$$

We get,

$$= 3773 \text{ m}^2$$

Therefore, the area of the circle is 3773 m²

(iii) Diameter = 9.8 m

Hence,

$$\text{Radius} = (9.8 / 2)$$

$$= 4.9 \text{ m}$$

$$\text{Area} = \pi r^2$$

$$= (22 / 7) \times 4.9 \times 4.9$$

We get,

$$= 75.46 \text{ m}^2$$

Therefore, the area of the circle is 75.46 m²

(iv) Radius = 5 cm

$$\text{Area} = \pi r^2$$

$$= (22 / 7) \times 5 \times 5$$

We get,

$$= (550 / 7)$$

$$= 78\frac{4}{7} \text{ cm}^2$$