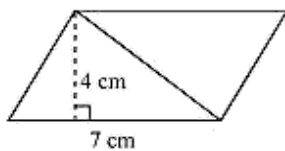


Board – CBSE

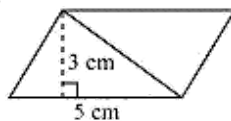
Class – 7th

Topic – Perimeter and Area 11.2

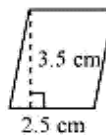
Q.1 Find the area of each of the following parallelograms:



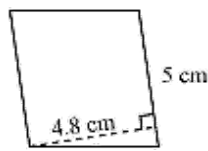
(a)



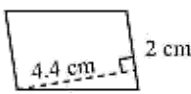
(b)



(c)



(d)



(e)

Sol: Area of parallelogram = Base \times Height

(a) Height = 4 cm

Base = 7 cm

Area of parallelogram = $7 \times 4 = 28 \text{ cm}^2$

(b) Height = 3 cm

Base = 5 cm

Area of parallelogram = $5 \times 3 = 15 \text{ cm}^2$

(c) Height = 3.5 cm

Base = 2.5 cm

Area of parallelogram = $2.5 \times 3.5 = 8.75 \text{ cm}^2$

(d) Height = 4.8 cm

Base = 5 cm

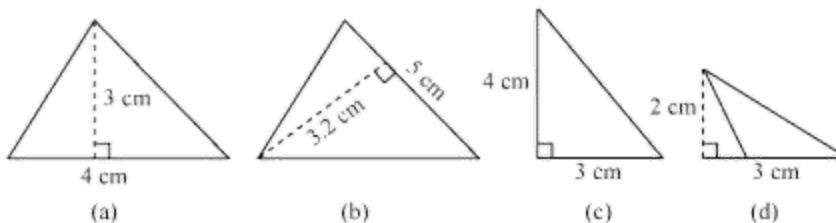
Area of parallelogram = $5 \times 4.8 = 24 \text{ cm}^2$

(e) Height = 4.4 cm

Base = 2 cm

Area of parallelogram = $2 \times 4.4 = 8.8 \text{ cm}^2$

Q.2 Find the area of each of the following triangles:



Sol: Area of triangle = $\frac{1}{2} \times \text{Base} \times \text{height}$

(a) Base = 4 cm, height = 3 cm

$$\text{Area} = \frac{1}{2} \times 4 \times 3 = 6 \text{ cm}^2$$

(b) Base = 5 cm, height = 3.2 cm

$$\text{Area} = \frac{1}{2} \times 5 \times 3.2 = 8 \text{ cm}^2$$

(c) Base = 4 cm, height = 3 cm

$$\text{Area} = \frac{1}{2} \times 4 \times 3 = 6 \text{ cm}^2$$

(d) Base = 3 cm, height = 2 cm

$$\text{Area} = \frac{1}{2} \times 3 \times 2 = 3 \text{ cm}^2$$

Q.3 Find the missing values:

S.No.	Base	Height	Area of parallelogram
a.	20 cm	-	246 cm ²
b.	-	15 cm	154.5 cm ²
c.	-	8.4 cm	48.72 cm ²
d.	15.6 cm	-	16.38 cm ²

Sol: Area of parallelogram = Base \times Height

(a) b = 20 cm

h = ?

$$\text{Area} = 246 \text{ cm}^2$$

$$20 \times h = 246$$

$$h = \frac{246}{20} = 12.3 \text{ cm}$$

Therefore, the height of such parallelogram is 12.3 cm.

(b) $b = ?$

$$h = 15 \text{ cm}$$

$$\text{Area} = 154.5 \text{ cm}^2$$

$$b \times 15 = 154.5$$

$$b = 10.3 \text{ cm}$$

Therefore, the base of such parallelogram is 10.3 cm.

(c) $b = ?$

$$h = 8.4 \text{ cm}$$

$$\text{Area} = 48.72 \text{ cm}^2$$

$$b \times 8.4 = 48.72$$

$$b = \frac{48.72}{8.4} = 5.8 \text{ cm}$$

Therefore, the base of such parallelogram is 5.8 cm.

(d) $b = 15.6 \text{ cm}$

$$h = ?$$

$$\text{Area} = 16.38 \text{ cm}^2$$

$$15.6 \times h = 16.38$$

$$h = \frac{16.38}{15.6} = 1.05 \text{ cm}$$

Therefore, the height of such parallelogram is 1.05 cm.

Q.4 Find the missing values:

Base	Height	Area of triangle
15 cm	-----	87 cm^2
-----	31.4 mm	1256 mm^2
22 cm	-----	170.5 cm^2

Sol: Area of triangle = $\frac{1}{2} \times \text{Base} \times \text{height}$

(a) $b = 15 \text{ cm}$

$$h = ?$$

$$\text{Area} = \frac{1}{2} \times b \times h = 87 \text{ cm}^2$$

$$\text{Area} = \frac{1}{2} \times 15 \times h = 87 \text{ cm}^2$$

$$h = \frac{87 \times 2}{15} = 11.6 \text{ cm}$$

Therefore, the height of such triangle is 11.6 cm.

(b) $b = ?$

$$h = 31.4 \text{ mm}$$

$$\text{Area} = \frac{1}{2} \times b \times h = 1256 \text{ mm}^2$$

$$\frac{1}{2} \times b \times 31.4 = 1256$$

$$b = \frac{1256 \times 2}{31.4} = 80 \text{ mm}$$

Therefore, the base of such triangle is 80 mm.

(c) $b = 22 \text{ cm}$

$$h = ?$$

$$\text{Area} = \frac{1}{2} \times b \times h = 170.5 \text{ cm}^2$$

$$\frac{1}{2} \times 22 \times h = 170.5 \text{ cm}^2$$

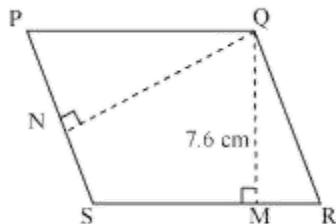
$$h = \frac{170.5 \times 2}{22} = 15.5 \text{ cm}$$

Therefore, the height of such triangle is 15.5 cm.

Q.5 PQRS is a parallelogram (see the given figure). QM is the height from Q to SR and QN is the height from Q to PS. If SR = 12 cm and QM = 7.6 cm. Find:

(a) The area of the parallelogram PQRS

(b) QN, if PS = 8 cm



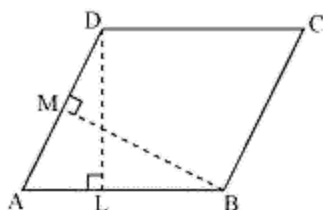
Sol: (a) Area of parallelogram = Base \times Height = SR \times QM = $7.6 \times 12 = 91.2 \text{ cm}^2$

(b) Area of parallelogram = Base \times Height = PS \times QN = 91.2 cm²

$$QN \times 8 = 91.2$$

$$QN = \frac{91.2}{8} = 11.4 \text{ cm.}$$

- Q.6** DL and BM are the heights on sides AB and AD respectively of parallelogram ABCD (see the given figure). If the area of the parallelogram is 1470 cm², AB = 35 cm and AD = 49 cm, find the length of BM and DL.



Sol: Area of parallelogram = Base \times Height = AB \times DL

$$1470 = 35 \times DL$$

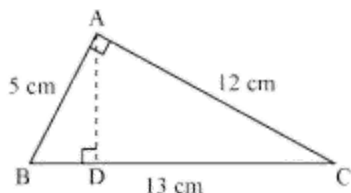
$$DL = \frac{1470}{35} = 42 \text{ cm}$$

Also, 1470 = AD \times BM

$$1470 = 49 \times BM$$

$$BM = \frac{1470}{49} = 30 \text{ cm}$$

- Q.7** $\triangle ABC$ is right angled at A (see the given figure). AD is perpendicular to BC. If AB = 5 cm, BC = 13 cm and AC = 12 cm, Find the area of $\triangle ABC$. Also find the length of AD.



Sol: Area of triangle = $\frac{1}{2} \times$ Base \times height = $\frac{1}{2} \times 5 \times 12 = 30 \text{ cm}^2$

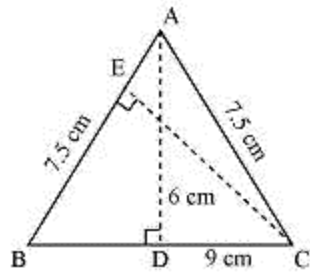
Also, area of triangle = $\frac{1}{2} \times AD \times BC$

$$30 = \frac{1}{2} \times AD \times 13$$

$$\frac{30 \times 2}{13} = AD$$

$$AD = 4.6 \text{ cm}$$

- Q.8** ΔABC is isosceles with $AB = AC = 7.5 \text{ cm}$ and $BC = 9 \text{ cm}$ (see the given figure). The height AD from A to BC , is 6 cm . Find the area of ΔABC . What will be the height from C to AB i.e., CE ?



Sol: Area of $\Delta ABC = \frac{1}{2} \times \text{Base} \times \text{height} = \frac{1}{2} \times BC \times AD$

$$= \frac{1}{2} \times 9 \times 6 = 27 \text{ cm}^2$$

$$\text{Area of } \Delta ABC = \frac{1}{2} \times \text{Base} \times \text{height} = \frac{1}{2} \times AB \times CE$$

$$27 = \frac{1}{2} \times 7.5 \times CE$$

$$CE = 7.2 \text{ cm}$$