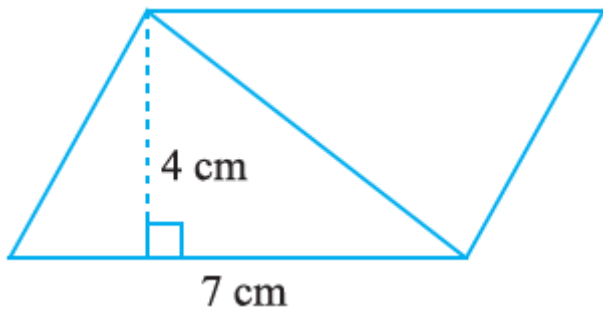


EXERCISE 11.2**PAGE: 216**

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

(a)



Solution:-

From the figure,

Height of parallelogram = 4 cm

Base of parallelogram = 7 cm

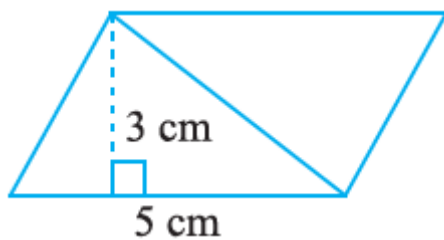
Then,

Area of parallelogram = Base \times Height

$$= 7 \times 4$$

$$= 28 \text{ cm}^2$$

(b)



Solution:-

From the figure,

Height of parallelogram = 3 cm

Base of parallelogram = 5 cm

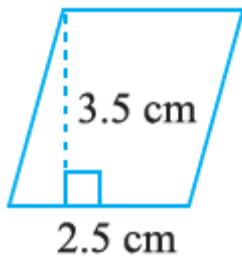
Then,

Area of parallelogram = Base \times Height

$$= 5 \times 3$$

$$= 15 \text{ cm}^2$$

(c)



Solution:-

From the figure,

Height of parallelogram = 3.5 cm

Base of parallelogram = 2.5 cm

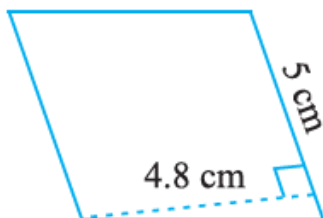
Then,

Area of parallelogram = Base \times Height

$$= 2.5 \times 3.5$$

$$= 8.75 \text{ cm}^2$$

(d)



Solution:-

From the figure,

Height of parallelogram = 4.8 cm

Base of parallelogram = 5 cm

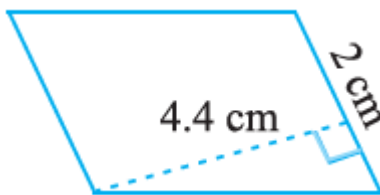
Then,

Area of parallelogram = Base \times Height

$$= 5 \times 4.8$$

$$= 24 \text{ cm}^2$$

(e)



Solution:-

From the figure,

Height of parallelogram = 4.4 cm

Base of parallelogram = 2 cm

Then,

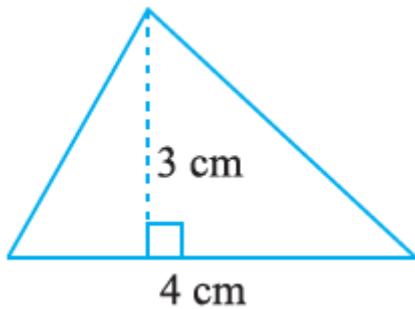
Area of parallelogram = Base \times Height

$$= 2 \times 4.4$$

$$= 8.8 \text{ cm}^2$$

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

(a)

**Solution:-**

From the figure,

Base of triangle = 4 cm

Height of height = 3 cm

Then,

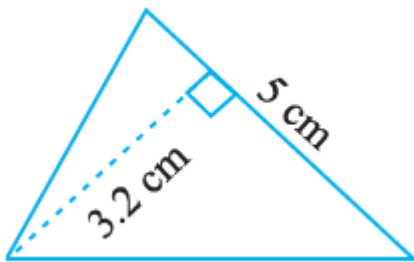
Area of triangle = $\frac{1}{2} \times \text{Base} \times \text{Height}$

$$= \frac{1}{2} \times 4 \times 3$$

$$= 1 \times 2 \times 3$$

$$= 6 \text{ cm}^2$$

(b)

**Solution:-**

From the figure,

Base of triangle = 3.2 cm

Height of height = 5 cm

Then,

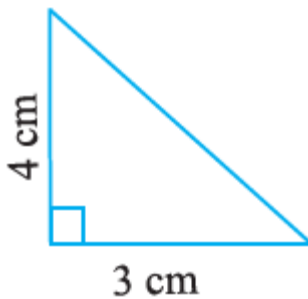
$$\text{Area of triangle} = \frac{1}{2} \times \text{Base} \times \text{Height}$$

$$= \frac{1}{2} \times 3.2 \times 5$$

$$= 1 \times 1.6 \times 5$$

$$= 8 \text{ cm}^2$$

(c)



Solution:-

From the figure,

Base of triangle = 3 cm

Height of triangle = 4 cm

Then,

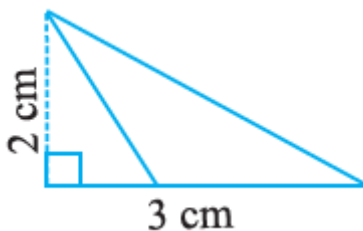
$$\text{Area of triangle} = \frac{1}{2} \times \text{Base} \times \text{Height}$$

$$= \frac{1}{2} \times 3 \times 4$$

$$= 1 \times 3 \times 2$$

$$= 6 \text{ cm}^2$$

(d)



Solution:-

From the figure,

Base of triangle = 3 cm

Height of height = 2 cm

Then,

Area of triangle = $\frac{1}{2} \times \text{Base} \times \text{Height}$

$$= \frac{1}{2} \times 3 \times 2$$

$$= 1 \times 3 \times 1$$

$$= 3 \text{ cm}^2$$

3. Find the missing values.

S.No.	Base	Height	Area of the 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

Solution:-

(a)

From the table,

Base of parallelogram = 20 cm

Height of parallelogram = ?

Area of the parallelogram = 246 cm²

Then,

Area of parallelogram = Base \times Height

$$246 = 20 \times \text{height}$$

$$\text{Height} = 246/20$$

$$\text{Height} = 12.3 \text{ cm}$$

\therefore Height of the parallelogram is 12.3 cm.

(b)

From the table,

Base of parallelogram = ?

Height of parallelogram = 15 cm

Area of the parallelogram = 154.5 cm^2

Then,

Area of parallelogram = Base \times Height

$$154.5 = \text{base} \times 15$$

$$\text{Base} = 154.5/15$$

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

\therefore Base of the parallelogram is 10.3 cm.

(c)

From the table,

Base of parallelogram = ?

Height of parallelogram = 8.4 cm

Area of the parallelogram = 48.72 cm^2

Then,

Area of parallelogram = Base \times Height

$$48.72 = \text{base} \times 8.4$$

$$\text{Base} = 48.72/8.4$$

$$\text{Base} = 5.8 \text{ cm}$$

∴ Base of the parallelogram is 5.8 cm.

(d)

From the table,

Base of parallelogram = 15.6 cm

Height of parallelogram = ?

Area of the parallelogram = 16.38 cm^2

Then,

Area of parallelogram = Base \times Height

$16.38 = 15.6 \times \text{height}$

Height = $16.38/15.6$

Height = 1.05 cm

∴ Height of the parallelogram is 1.05 cm.

S.No.	Base	Height	Area of the Parallelogram
a.	20 cm	12.3 cm	246 cm^2
b.	10.3 cm	15 cm	154.5 cm^2
c.	5.8 cm	8.4 cm	48.72 cm^2
d.	15.6 cm	1.05	16.38 cm^2

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

Solution:-

(a)

From the table,

Height of triangle =?

Base of triangle = 15 cm

Area of the triangle = 16.38 cm²

Then,

Area of triangle = $\frac{1}{2} \times \text{Base} \times \text{Height}$

$87 = \frac{1}{2} \times 15 \times \text{height}$

Height = $(87 \times 2)/15$

Height = 11.6 cm

Height = 11.6 cm

\therefore Height of the triangle is 11.6 cm.

(b)

From the table,

Height of triangle = 31.4 mm

Base of triangle =?

Area of the triangle = 1256 mm²

Then,

Area of triangle = $\frac{1}{2} \times \text{Base} \times \text{Height}$

$1256 = \frac{1}{2} \times \text{base} \times 31.4$

Base = $(1256 \times 2)/31.4$

Base = 2512/31.4

Base = 80 mm = 8 cm

∴ Base of the triangle is 80 mm or 8 cm.

(c)

From the table,

Height of triangle = ?

Base of triangle = 22 cm

Area of the triangle = 170.5 cm²

Then,

Area of triangle = $\frac{1}{2} \times \text{Base} \times \text{Height}$

170.5 = $\frac{1}{2} \times 22 \times \text{height}$

170.5 = 11 × height

Height = 170.5/11

Height = 15.5 cm

∴ Height of the triangle is 15.5 cm.

5. PQRS is a parallelogram (Fig 11.23). 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

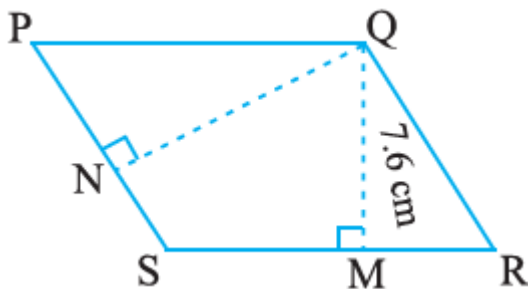


Fig 11.23

Solution:-

From the question, it is given that

SR = 12 cm, QM = 7.6 cm

(a) We know that,

Area of the parallelogram = Base \times Height

$$= SR \times QM$$

$$= 12 \times 7.6$$

$$= 91.2 \text{ cm}^2$$

(b) Area of the parallelogram = Base \times Height

$$91.2 = PS \times QN$$

$$91.2 = 8 \times QN$$

$$QN = 91.2/8$$

$$QN = 11.4 \text{ cm}$$

6. DL and BM are the heights on sides AB and AD, respectively, of parallelogram ABCD (Fig 11.24). If the area of the parallelogram is 1470 cm^2 , $AB = 35 \text{ cm}$ and $AD = 49 \text{ cm}$, find the length of BM and DL.

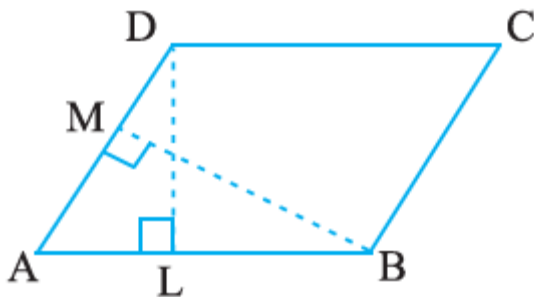


Fig 11.24

Solution:-

From the question, it is given that

Area of the parallelogram = 1470 cm^2

$AB = 35 \text{ cm}$

$AD = 49 \text{ cm}$

Then,

We know that,

Area of the parallelogram = Base \times Height

$$1470 = AB \times BM$$

$$1470 = 35 \times DL$$

$$DL = 1470/35$$

$$DL = 42 \text{ cm}$$

And,

Area of the parallelogram = Base \times Height

$$1470 = AD \times BM$$

$$1470 = 49 \times BM$$

$$BM = 1470/49$$

$$BM = 30 \text{ cm}$$

7. $\triangle ABC$ is right-angled at A (Fig 11.25). 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.

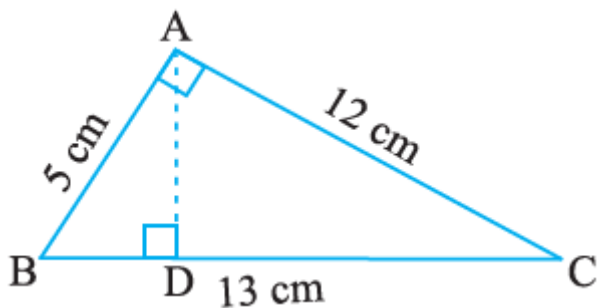


Fig 11.25

Solution:-

From the question, it is given that

AB = 5 cm, BC = 13 cm, AC = 12 cm

Then,

We know that,

Area of the $\triangle ABC = \frac{1}{2} \times \text{Base} \times \text{Height}$

$$= \frac{1}{2} \times AB \times AC$$

$$= \frac{1}{2} \times 5 \times 12$$

$$= 1 \times 5 \times 6$$

$$= 30 \text{ cm}^2$$

Now,

$$\text{Area of } \triangle ABC = \frac{1}{2} \times \text{Base} \times \text{Height}$$

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

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

$$(30 \times 2)/13 = AD$$

$$AD = 60/13$$

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

8. $\triangle ABC$ is isosceles with $AB = AC = 7.5 \text{ cm}$ and $BC = 9 \text{ cm}$ (Fig 11.26). The height AD from A to BC is 6 cm . Find the area of $\triangle ABC$. What will be the height from C to AB , i.e., CE ?

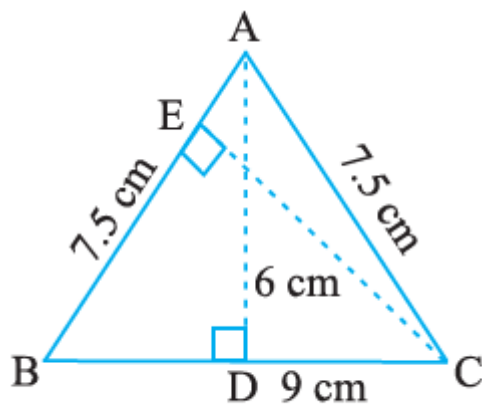


Fig 11.26

Solution:-

From the question, it is given that

$$AB = AC = 7.5 \text{ cm}, BC = 9 \text{ cm}, AD = 6 \text{ cm}$$

Then,

$$\text{Area of } \triangle ABC = \frac{1}{2} \times \text{Base} \times \text{Height}$$

$$= \frac{1}{2} \times BC \times AD$$

$$= \frac{1}{2} \times 9 \times 6$$

$$= 1 \times 9 \times 3$$

$$= 27 \text{ cm}^2$$

Now,

$$\text{Area of } \triangle ABC = \frac{1}{2} \times \text{Base} \times \text{Height}$$

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

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

$$(27 \times 2)/7.5 = CE$$

$$CE = 54/7.5$$

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

