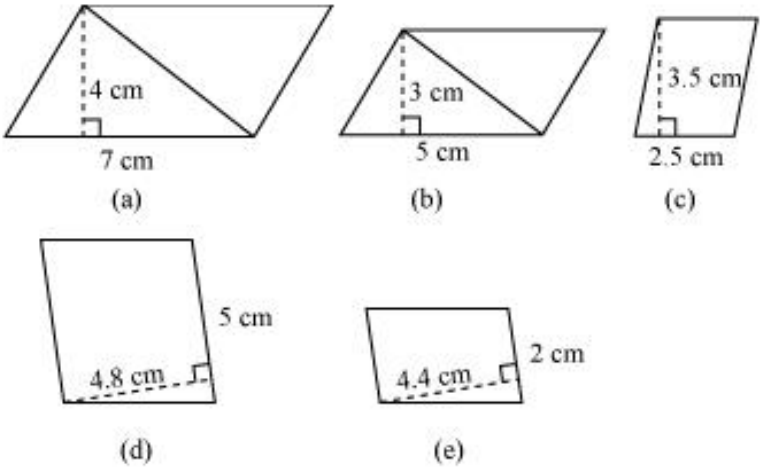
NCERT Solutions For Class 7 Maths Perimeter and Area Exercise 11.2

Q1. Find the area of each of the following parallelograms:



Ans:

Area of parallelogram = Base x Height

(a) Height= 4 cm

Base = 7 cm

Area of parallelogram = 7 x 4 = 28 cm^2

(b) Height= 3 cm

Base = 5 cm

Area of parallelogram = 5 x 3 = 15 cm^2

(c) Height= 3.5 cm

Base = 2.5 cm

Area of parallelogram = 2.5 x 3.5 = 8.75 cm^2

(d) Height= 4.8 cm

Base = 5 cm

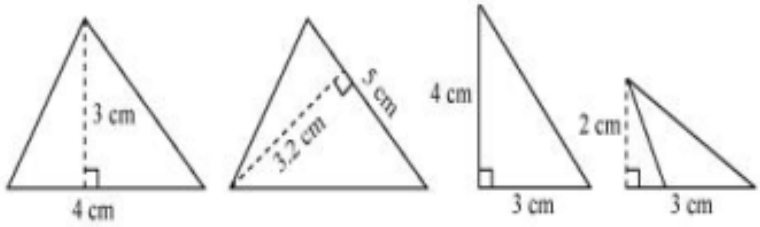
Area of parallelogram = 5 x 4.8 = 24 cm^2

(e) Height= 4.4 cm

Base = 2 cm

Area of parallelogram = 2 x 4.4 = 8.8 cm^2

Q2. Find the area of each of the following triangles:



(a) (b) (c) (d)

Ans:

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

(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

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

Q3. Find the missing values:

So 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

Ans:

Area of parallelogram = Base × Height

(a) b = 20 cm

h = ?

Area = 246 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 cm

Area = 154.5 cm^2

$b \times 15 = 154.5$

b = 10.3 cm

Therefore, the base of such parallelogram is 10.3 cm.

(c) b = ?

h = 8.4 cm

Area = 48.72 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 cm

h = ?

Area = 16.38 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.

Q4. 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

Ans:

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

(a) $b = 15$ cm

$h = ?$

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

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

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

Therefore, the height of such triangle is 11.6 cm.

(b) $b = ?$

$h = 31.4$ 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) $b = 22$ cm

$h = ?$

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

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

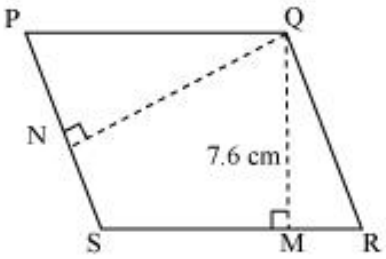
$$h = \frac{170.5 \times 2}{22} = 15.5 \text{ cm}$$

Therefore, the height of such triangle is 15.5 cm.

Q5. 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



Ans:

(a) Area of parallelogram = Base × Height = SR × QM

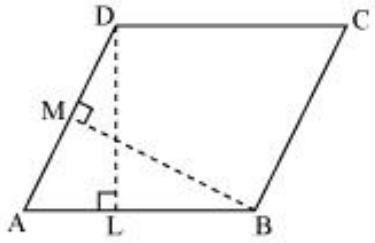
= 7.6 × 12 = 91.2 cm²

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

QN × 8 = 91.2

$$QN = \frac{91.2}{8} = 11.4\,cm$$

Q6. 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.



Ans: Area of parallelogram = Base × Height = AB × DL

1470 = 35 × DL

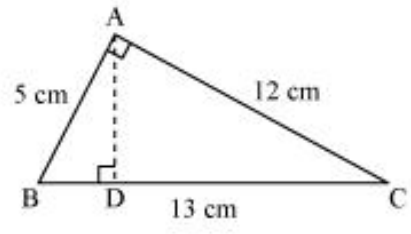
$$DL = \frac{1470}{35} = 42\ cm$$

Also, 1470 = AD × BM

1470 = 49 × BM

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

Q7. ΔABC 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 ΔABC. Also find the length of AD.



Ans:

$$\text{Area} = \frac{1}{2} \times \text{Base} \times \text{Height} = \frac{1}{2} \times 5 \times 12 = 30 \text{ cm}^2$$

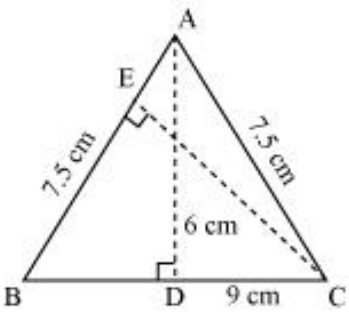
$$\text{Also, area of triangle} = \frac{1}{2} \times AD \times BC$$

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

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

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

Q8. ΔABC is isosceles with AB = AC = 7.5 cm and BC = 9 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?



Ans:

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

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

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

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

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

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