Chapter: Area of a Trapezium and a Polygon
Page no. : 207
Exercise: 18A

Question 1:
Solution:
Area of a trapezium= $\frac{1}{2}$ × (Sum of parallel sides) × (Distance between them)

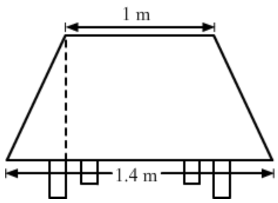
= $\frac{1}{2} \times (24 + 20) \times 15\, cm^2$
= $\frac{1}{2} \times 44 \times 15\, cm^2$
= $22 \times 15\, cm^2$
= $330\, cm^2$

Hence the area of trapezium is $330\, m^2$

Question 2:
Solution:
Area of a trapezium = $\frac{1}{2}$ × (Sum of parallel sides) × (Distance between them)
= $\frac{1}{2} \times (38.7+22.3) \times 16\, cm^2$
= $\frac{1}{2} \times 61 \times 16\, cm^2$
= $61 \times 8\, cm^2$
= $488\, cm^2$

Hence, the area of trapezium is $488\, cm^2$

Question 3:



Solution:
Area of a trapezium= $\frac{1}{2}$ × (Sum of parallel sides) × (Distance between them)
= $\frac{1}{2} \times (1 + 1.4) \times 0.9\, m^2$
= $\frac{1}{2} \times 2.4 \times 0.9\, m^2$
= $1.2 \times 0.9\, m^2$
= $1.08\, m^2$

Hence the area of the top surface of the table is 1.08 m^2

Question 4:
Solution:

Let the distance between the parallel sides be x.

Now, Area of trapezium = $\frac{1}{2} \times (55 + 35) \times x \ cm^2$

$= \frac{1}{2} \times 90 \times x \, cm^2$

$= 45x \, cm^2$

Area of the trapezium = 1080 cm^2

Given

$45x = 1080$

$x = \frac{1080}{45}$

$x = 24 \ cm$

Hence the distance between the parallel sides is 24 cm

Question 5:
Solution:

Let the length of the required side be x cm.

Now, Area of trapezium = $\frac{1}{2} \times (84 + x) \times 26 \, m^2$

$= 1092 + 13x \, m^2$

Area of trapezium = 1586 m^2 (given)

$1092 + 13x = 1586$

$13x = 1586 - 1092$

$13x = 494$

$x = \frac{494}{13}$

$x = 38 \ m$

Hence the length of the other side is 38 m.

Question 6:
Solution:

Let the lengths of the parallel sides of the trapezium be $4x$ cm and $5x$ cm, respectively.

Now, Area of trapezium = $\frac{1}{2} \times (4x + 5x) \times 18 \, cm^2$

$= \frac{1}{2} \times 9x \times 18 \, cm^2$

$= 81x \, cm^2$

Area of trapezium = 405 cm^2

Given,

$81x = 405\,cm^2$

$x = \dfrac{405}{81}\,cm^2$

$x = 5\,cm^2$

Length of one side = (4 × 5) = 20 *cm*
Length of the other side = (5 × 5) = 25 *cm*

Question 7:
Solution:
Let the lengths of the parallel sides be *x cm* and *x* + 6 *cm*.

Now, Area of trapezium $= \dfrac{1}{2} \times (x + x + 6) \times 9\,cm^2$

$= \dfrac{1}{2} \times (2x + 6) \times 9\,cm^2$

$= 4.52x + 6\,cm^2$

$= 9x + 27\,cm^2$

Area of trapezium = $180\,cm^2$

$9x + 27 = 180$

$9x = 180 - 27$

$9x = 153$

$x = \dfrac{153}{9}$

$x = 17$

Hence the length of the parallel sides are 17 *cm* and 23 *cm*, that is, (17 + 6) *cm*

Question 8:
Solution:
Let the lengths of the parallel sides be x *cm* and 2*x cm*.

Area of trapezium $= \dfrac{1}{2} \times (x + 2x) \times 84\,m^2$

$= \dfrac{1}{2} \times 3x \times 84\,m^2$

$= 42 \times 3x\,m^2$

$= 126x\,m^2$

Area of the trapezium = $9450\,m^2$
Given,

$126x = 9450\,m^2$

$x = \dfrac{9450}{126}$

$x = 75$

Thus the lengths of the parallel sides are 75 *m* and 150 *m*, that is 2 × 75 m,
And the length of the longer side is 150 *m*.

Question 9:
Solution:
Length of the side AB = [130 - (54 + 19 + 42)] m
= 15 m

Area of the trapezium-shaped field = $\frac{1}{2}$ × (AD + BC) × AB

= $\frac{1}{2}$ × (42 + 54) × 15 m^2

= $\frac{1}{2}$ × 96 × 15 m^2

= 48 × 15 m^2

= 720 m^2

Hence the area of the field is 720 m^2

Question 10:
Solution:
∠ABC = 90°
From the right ΔABC, we have:
$AB^2 = AC^2 - BC^2$
AB^2 =412-402
AB^2 =1681- 1600
AB^2 =81
AB= $\sqrt{81}$
AB=9 cm
Length AB=9 cm

Now, Area of the trapezium = $\frac{1}{2}$ × (AD + BC) × AB

= $\frac{1}{2}$ × (16 + 40) × 9 cm^2

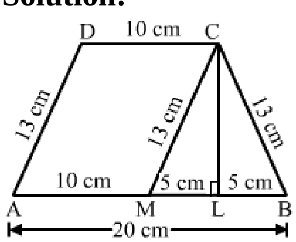
= $\frac{1}{2}$ × 56 × 9 cm^2

= 28 × 9 cm^2

= 252 cm^2

Hence the area of the trapezium is 252 cm^2

Question 11:
Solution:



Let ABCD be the given trapezium in which AB∥DC, AB = 20 cm, DC = 10 cm and AD = BC = 13 cm. Draw CL⊥AB and CM ∥ DA meeting AB at L and M, respectively. Clearly, AMCD is a parallelogram.

Now, AM = DC = 10 cm

MB = AB - AM

= 20 - 10 cm

= 10 cm

Also, CM = DA = 13 cm

Therefore, ∆CMB is an isosceles triangle and CL⊥MB.

L is the midpoint of B.

ML = LB = $\frac{1}{2}$ × MB

= $\frac{1}{2}$ × 10 cm

= 5 cm

From right ∆CLM, we have:

$CL^2 = CM^2 - ML^2\ cm^2$

CL^2 = 132 - 52 cm^2

CL^2 = 109 - 25 cm^2

CL^2 = 144 cm^2

CL = $\sqrt{144}$ cm

CL = 12 cm

∴ Length of CL = 12 cm

Area of the trapezium = $\frac{1}{2}$ × (AB + DC) × CL

= $\frac{1}{2}$ × (20 + 10) × 12 cm^2

= $\frac{1}{2}$ × 30 × 12 cm^2

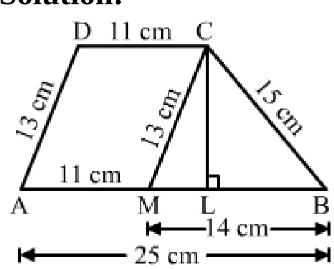
= 15 × 12 cm^2

= 180 cm^2

Hence , the area of the trapezium is 180 cm^2

Question12:

Solution:



Let ABCD be the trapezium in which AB∥DC, AB=25 cm, CD=11 cm, AD=13 cm and BC=15 cm.

Draw CL⊥AB and CM∥DA meeting AB at L and M, respectively.Clearly, AMCD is a parallelogram.

Now, MC=AD=13 cm

AM=DC=11 cm

MB=AB-AM
=25-11 cm
=14 cm

Thus, in ΔCMB, we have:
CM=13 cm
MB=14 cm
BC=15 cm
$\therefore$ s = $\frac{1}{2}$ (13+14+15) cm
= $\frac{1}{2}$ × 42 cm
=21 cm
s-a=21-13 cm
= 8 cm
s-b=21-14 cm
= 7 cm
s- c =21-15cm
= 6 cm
$\therefore$ Area of ΔCMB= $\sqrt{s(s-a)(s-b)(s-c)}$
= $\sqrt{21\times8\times7\times6}$ cm^2
= 84 cm^2
= $\frac{1}{2}$ ×MB×CL=84 cm^2
= $\frac{1}{2}$ ×14×CL=84 cm^2
= CL= $\frac{84}{7}$
= CL=12 cm
Area of the trapezium= $\frac{1}{2}$ × (AB+DC) ×CL
= $\frac{1}{2}$ × (25+11) ×12 cm^2
= $\frac{1}{2}$ ×36×12 cm^2
=18×12 cm^2
=216 cm^2
Hence, the area of the trapezium is 216 cm^2

Page no. - 210
Exercise: 18 B
Question 1:
Solution:
Area of quadrilateral ABCD = (Area of ΔADC) + (Area of ΔACB)
= ($\frac{1}{2}$ × AC × DM) + ($\frac{1}{2}$ × AC × BL)

$= (\frac{1}{2} \times 24 \times 7) + (\frac{1}{2} \times 24 \times 8)\, cm^2$
$= 84 + 96\, cm^2$
$= 180\, cm^2$

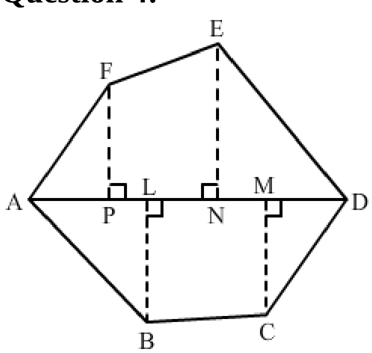
Hence, the area of the quadrilateral is $180\, cm^2$

Question 2:
Solution:
Area of quadrilateral ABCD = (Area of ΔABD) + (Area of ΔBCD)
$= (\frac{1}{2} \times BD \times AL) + (\frac{1}{2} \times BD \times CM)$
$= (\frac{1}{2} \times 36 \times 19) + (\frac{1}{2}^{2}\ 4^{2}\sqrt{9} \times 36 \times 11)\, m^2$
$= 342 + 198\, m^2$
$= 540\, m^2$
Hence, the area is the field is $540\, m^2$

Question 3:
Solution:
Area of pentagon ABCDE = (Area of ΔAEN) + (Area of trapezium EDMN) + (Area of ΔDMC) + (Area of ΔACB

$= \frac{1}{2} \times AN \times EN + \frac{1}{2} \times (EN + DM) \times NM + \frac{1}{2} \times MC \times DM + \frac{1}{2} \times AC \times BL$
$= \frac{1}{2} \times AN \times EN + \frac{1}{2} \times (EN + DM) \times (AM - AN) + \frac{1}{2} \times (AC – AM) \times DM + \frac{1}{2} \times AC \times BL$
$= \frac{1}{2} \times 6 \times 9 + \frac{1}{2} \times 9 + \frac{1}{2} \times (14 – 6) + \frac{1}{2} \times (18 - 14) \times 12 + \frac{1}{2} \times 18 \times 4\, cm^2$
$= 27 + 84 + 24 + 36\, cm^2$
$= 171\, cm^2$
Hence, the area of the given pentagon is $171\, cm^2$

Question 4:



Solution:
Area of hexagon ABCDEF = (Area of ΔAFP) + (Area of trapezium FENP) + (Area of ΔALB)

$= \frac{1}{2} \times AP \times FP + \frac{1}{2} \times (FP+EN) \times PN + \frac{1}{2} \times ND \times EN + \frac{1}{2} \times MD \times CM + \frac{1}{2} \times (CM + BL) \times LM + \frac{1}{2} \times AL \times BL$

$= \frac{1}{2} \times AP \times FP + \frac{1}{2} \times FP + EN \times PL + LN + \frac{1}{2} \times NM + MD \times CM + \frac{1}{2} \times MD \times CM + \frac{1}{2} \times CM + BL$
$\frac{1}{2} \times LN + NM + \frac{1}{2} \times AP + PL \times BL$

$= \frac{1}{2} \times 6 \times 8 + \frac{1}{2} \times (8 + 12) \times (2 + 8) + \frac{1}{2} \times (2 + 3) \times 12 + \frac{1}{2} \times 3 \times 6 + \frac{1}{2} \times (6 + 8) \times (8 + 2) + \frac{1}{2} \times (6 + 2) \times 8\ cm^2$

$= 24 + 100 + 30 + 9 + 70 + 32\, cm^2$
$= 265\ cm^2$
Hence, the area of the hexagon is $265\, cm^2$

Question 5:
Solution:
Area of pentagon ABCDE $= \frac{1}{2} \times$ (Area of ΔABC) + (Area of ΔACD) + (Area of ΔADE)
$= \frac{1}{2} \times AC \times BL + \frac{1}{2} \times AD \times CM + \frac{1}{2} \times AD \times EM$
$= \frac{1}{2} \times 10 \times 3 + \frac{1}{2} \times 12 \times 7 + \frac{1}{2} \times 12 \times 5\, cm^2$
$= 15 + 42 + 30\, cm^2$
$= 87\, cm^2$
Hence, the area of the pentagon is $87\, cm^2$

Question6:
Solution:
Area enclosed by the given figure $= \frac{1}{2} \times$ (Area of trapezium FEDC) + (Area of square ABCF)
$= \frac{1}{2} \times (6 + 20) \times (8 + 20) \times 20\, cm^2$
$= 104 + 400\, cm^2$
$= 504\, cm^2$
Hence in the area enclosed by the figure is $504\, cm^2$

Question7:
Solution:
We will find the length of AC.From the right triangles ABC and HGF, we have:
$AC^2 - HF^2 = 5^2 - 4^2$ cm
=25 – 16cm
=9 cm

AC-HF= $\sqrt{9}$ cm

=3 cm

Area of the given figure ABCDEFGH= (Area of rectangle ADEH) + (Area of ΔABC) + (Area of ΔHGF)

= (Area of rectangle ADEH) +2(Area of ΔABC)

= (AD×DE) +2(Area of ΔABC)

= (AC+CD) ×DE+2($\frac{1}{2}$ ×BC×AC)

=3+4×8+2 ($\frac{1}{2}$ ×4×3) cm^2

=56+12 cm^2

=68 cm^2

Hence, the area of the given figure is 68 cm^2 .

Question8:

Solution:

Let AL = DM = x cm

LM = BC = 13 cm

∴ x + 13 + x = 23

2x + 13 = 23

2x = 23 - 13

2x = 10

x = 5

∴ AL = 5 cm

From the right ΔAFL, we have:

$FL^2 = AF^2 - AL^2$

$FL^2 = 13^2 - 5^2$

FL^2 =169-25

FL^2 =144

FL= $\sqrt{144}$

FL = 12 cm

∴ FL = BL = 12 cm

Area of a regular hexagon= (Area of the trapezium ADEF) + (Area of the trapezium ABCD)

= 2(Area of trapezium ADEF)

=2 [$\frac{1}{2}$ × (AD+EF) ×FL]

=2 [$\frac{1}{2}$ × (23+13) ×12] cm^2

=2 [$\frac{1}{2}$ ×36×12] cm^2

=432 cm^2

Hence the area of the given regular hexagon is 432 cm^2

Page no. – 211
Exercise: 18C

Question1:
Solution:
(b) 144 cm^2

Area of the trapezium = $\frac{1}{2} \times (14 + 18) \times 9\, cm^2$

$= \frac{1}{2} \times 32 \times 9\, cm^2$

$= 144\, cm^2$

Question 2:
Solution:
(c) 8 cm

Let the distance between the parallel sides be x cm.

Then, area of the trapezium = $\frac{1}{2} \times (19 + 13) \times x\, cm^2$

$= \frac{1}{2} \times 32 \times x\, cm^2$

$= 16x\, cm^2$

But it is given that the area of the trapezium is 128 cm^2
16 x = 128
$x = \frac{128}{16}$
x = 8 cm

Question 3:
Solution:
(a)45 cm

Let the length of the parallel sides be 3x cm and 4x cm, respectively.

Then, area of the trapezium = $\frac{1}{2} \times (3x + 4x) \times 12\, cm^2$

$= \frac{1}{2} \times 7x \times 12\, cm^2$

$= 42\, x\, cm^2$

But it is given that the area of the trapezium is 630 cm^2 .

$42x = 630$

$$x = \frac{620}{42}$$
$$x = 15$$

Length of the parallel sides = (3 × 15) cm = 45cm

(4 × 15)cm = 60cm

Hence, the shorter of the parallel sides is 45cm

Question4:

Solution:

(a)23 cm

Let the length of the parallel sides be x cm and x+6 cm, respectively.

Then, area of the trapezium $= \frac{1}{2} \times (x + x + 6) \times 9\,cm^2$

$= \frac{1}{2} \times (2x + 6) \times 9\,cm^2$

$= 4.52x + 6\,cm^2$

$= 9x + 27\,cm^2$

But it is given that the area of the trapezium is $180\,cm^2$

$9x + 27 = 180$

$9x = 180 - 27$

$9x = 153$

$x = \frac{153}{9}$

$x = 17$

Therefore the length of the parallel sides are 17 cm and (17 + 6) cm which is equal to 23 cm

Hence the length of the longer parallel side is 23 cm.

Question 5:

Solution:

(a) 80 cm^2

From the given trapezium, we find:

DC=AL=7 cm [since DA⊥AB and CL⊥AB]

From the right ΔCBL, we have:

$CL^2 = CB^2 - LB^2$

$CL^2 = 10^2 - 6^2$

$CL^2 = 100\text{-}36$

$CL^2 = 64$

CL $= \sqrt{64}$

CL = 8 cm

Area of the trapezium$= \frac{1}{2} \times (7+13) \times 8\,cm^2$

$= (\frac{1}{2} \text{ x } 20 \text{ x } 8)\,cm^2$

$= 80\,cm^2$

Test paper 18
Page no. - 212

Question1:
Solution:
Let the base of the triangular field be 3x cm and its height be x cm.

Then, area of the triangle = $(\frac{1}{2} \times 3x \times x)\, m^2$

$= \frac{3x^2}{2}\, m^2$

But it is given that the area of the triangular field is $1350\, m^2$

$\therefore \frac{3x^2}{2} = 1350$

$x^2 = \frac{1350x^2}{3}$

$x^2 = 900$

$x = \sqrt{900}$

$x = 30$ m

Hence, the height of the field is 13 m
Its base = (3 x 30) m = 90 m

Question2:
Solution:

Area of an equilateral triangle= $\frac{\sqrt{3}}{4} \times (side)^2$ square units

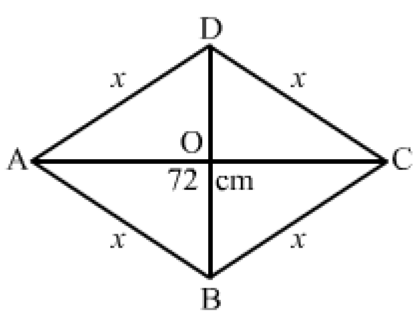
$= \frac{\sqrt{3}}{4} \times 6 \times 6\, cm^2$

$= \frac{\sqrt{3}}{4} \times 36\, cm^2$

$= 93\, cm^2$

Hence, the area of an equilateral triangle is $93\, cm^2$

Question 3:
Solution:



Let ABCD be a rhombus whose diagonals AC and BD intersect at a point O.Let the length of the diago nal AC be 72 cm and the side of the rhombus be x cm.
Perimeter of the rhombus=4x cm
But it is given that the perimeter of the rhombus is180 cm.

$$\therefore 4x=180$$
$$x=\frac{180}{4}$$
$$x=45$$

Hence, the length of the side of the rhombus is 45 cm.
We know that the diagonals of the rhombus bisect each other at right angles.

$$\therefore \text{AO}=\frac{1}{2}\text{AC}$$
$$\text{AO}=\frac{1}{2}\times 72\text{cm}$$
$$\text{AO}=36\text{ cm}$$

From right ΔAOB, we have:

$$BO^2=AB^2-AO^2$$
$$BO^2=45^2-36^2$$
$$BO^2=2025-1296$$
$$BO^2=729$$
$$\text{BO}=\sqrt{729}$$
$$\text{BO}=27\text{ cm}$$
$$\therefore \text{BD}=2\times\text{BO}$$
$$\text{BD}=2\times 27\text{cm}$$
$$\text{BD}=54\text{ cm}$$

Hence, the length of the other diagonal is 54 cm.

Area of the rhombus= $\frac{1}{2}\times 72\times 54\, cm^2$

$= 1944\, cm^2$

Question4:
Solution:

Let the length of the parallel sides be x m and (x-14) m.

Then, area of the trapezium= $\frac{1}{2}\times(x+x-14)\times 12\, m^2$

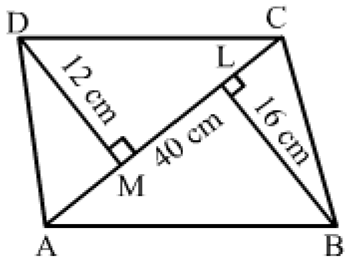
$$=6(2x-14)\, m^2$$
$$=12x-84\, m^2$$

But it is given that the area of the trapezium is 216 m^2

$$12x-84=216$$
$$12x=216+84$$
$$12x=300$$
$$x=\frac{300}{12}$$
$$x=25$$

Hence the length of the parallel sides are 25 m and (25 – 14) m, which is equal to 11m.

Question 5:
Solution:



Let ABCD be a quadrilateral.
Diagonal, AC=40 cm
BL⊥AC, such that BL=16 cm
DM⊥AC, such that DM=12 cm
Area of the quadrilateral= (Area of ΔDAC) + (Area of ΔACB)

$$=\frac{1}{2}\times AC\times DM+\frac{1}{2}\times AC\times BL\ cm^2$$
$$=\frac{1}{2}\times 40\times 12+\frac{1}{2}\times 40\times 16\ cm^2$$
$$= 240+320\ cm^2$$
$$=560\ cm^2$$

Hence, the area of the quadrilateral is 560 cm^2

Question6:
Solution:
Let the other side of the triangular field be x m.

$$\therefore\ x^2 = 50^2 - 30^2$$
$$x^2 = 2500-900$$
$$x^2 = 1600$$
$$x = \sqrt{1600}$$
$$x = 40$$

$\therefore$ Area of the field $=\frac{1}{2}\times 30\times 40\ m^2$

$$= 600\ m^2$$

B. Mark () against the correct answer in each of the following:

Question 7:
Solution:
(b) 56 cm^2

Area of the triangle $=\frac{1}{2}\times 14\times 8\ cm^2$

$$= 56\ cm^2$$

Question 8:
Solution:
(a) 20 m
Let the height of the triangle be x m and its base be 4x m respectively.

Then, area of the triangle= $\frac{1}{2} \times 4x \times x \, m^2$

$= 2x^2 \, m^2$

But, the area of the triangle is $50 \, m^2$

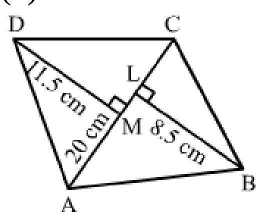
$2x^2 = 50$

$x^2 = \frac{50}{2}$

$x = \sqrt{25}$

Length of its base = (4 × 5) m
= 20m

Question9:
Solution:
(b) 200 cm^2



Let ABCD be a quadrilateral.
Diagonal, AC=20 cm
BL⊥AC, such that BL=8.5 cm
DM⊥AC, such that DM=11.5 cm
Area of the quadrilateral = (Area of ΔDAC) + (Area of ΔACB)

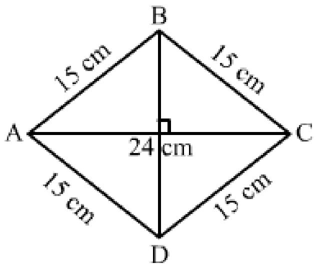
$= (\frac{1}{2} \times AC \times DM) + (\frac{1}{2} \times AC \times BL) \, cm^2$

$= (\frac{1}{2} \times 20 \times 11.5) + (\frac{1}{2} \times 20 \times 8.5) \, cm^2$

$= 85 + 115 \, cm^2$

$= 200 \, cm^2$

Question 10:
Solution:
(b) 216 cm^2



Let ABCD be a rhombus whose diagonals AC and BD intersect at a point O.Let the length of the diagonal AC be 24 cm and the side of the rhombus be 15 cm.
We know that the diagonals of the rhombus bisect each other at right angles.

$$AO=\frac{1}{2}AC$$

$$AO=\frac{1}{2}\times 24 \text{ cm}$$

$$AO=12 \text{ cm}$$

From right ΔAOB, we have:

$$BO^2=AB^2-AO^2$$

$$BO^2=15^2-12^2$$

$$BO^2=225-144$$

$$BO^2=81$$

$$BO=\sqrt{81}$$

$$BO=9 \text{ cm}$$

$$\therefore BD=2\times BO$$

$$BD=2\times 9 \text{ cm}$$

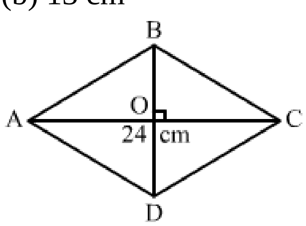
$$BD=18 \text{ cm}$$

Hence, the length of the other diagonal is 18 cm.

$$\text{Area of the rhombus}=\frac{1}{2}\times 24\times 18\, cm^2$$

$$=216\, cm^2$$

Question11:
Solution:
(b) 13 cm



Let ABCD be a rhombus whose diagonals AC and BD intersect at a point O.
Let the length of the diagonal AC be 24 cm.

$$\text{Area of the rhombus}=\frac{1}{2}\times AC\times BD\ cm^2$$

But the area of the rhombus is 120 cm^2 (given)

$\therefore \frac{1}{2} \times AC \times BD = 120$

Or $\frac{1}{2} \times 24 \times BD = 120$

or $12 \times BD = 120$

or $BD = \frac{120}{12}$

$= 10$ cm

$OB = \frac{BD}{2}$

$= \frac{10}{2}$

$= 5$ cm

And $OA = \frac{AC}{2} = \frac{24}{2} = 12$ cm

Now, in right triangle AOB:

$AB^2 = OA^2 + OB^2$

$AB^2 = 12^2 + 5^2$

$AB^2 = 144 + 25$

$= 169$

or $AB = \sqrt{169}$

$= 13$ cm

Therefore, each side of the rhombus is 13 cm.

Question 12:

Solution:

(a)600 cm^2

Area of the trapezium $= \frac{1}{2} \times (54 + 26) \times 15\,cm^2$

$= \frac{1}{2} \times 80 \times 15\,cm^2$

$= 600\,cm^2$

Question 13:

Solution:

(b) 40 cm

Let the length of the parallel sides be $5x$ cm and $3x$ cm, respectively.

Area of the trapezium $= \frac{1}{2} \times (5x + 3x) \times 12\,cm^2$

$= \frac{1}{2} \times 8x \times 12\,cm^2$

$= 48x\,cm^2$

The area of the trapezium is $384 cm^2$

$48x = 384$

$$x = \frac{384}{48}$$
$$x = 8$$

Longer side = $5x$

5 x 8 = 40 cm

Question 14:

(a)

Solution: Area of a triangle = $\frac{1}{2}$ × Base × Height

(b)

Solution: Area of a ∥gm = Base x Height

(c)

Solution: Area of a trapezium= $\frac{1}{2}$ × Sum of the parallel sides × Distance between them

(d)

Solution: Area of a trapezium = $\frac{1}{2} \times (14+18) \times 8\, cm^2$

$$= \frac{1}{2} \times 32 \times 8\, cm^2$$

$$= 128\, cm^2$$