RS Aggarwal Solutions for Class 8 Maths Chapter 18 Exercise 18.2: For Class 8 Maths Chapter 18 Exercise 18.2, the Physics Wallah team has developed comprehensive and simple solutions. This exercise helps students practice calculating the area of different trapeziums and polygons, building on what was learned in Exercise 18.1.

It is important to first understand the basics of the shapes and their areas before starting Exercise 18.2. Reading through the chapter's theory will make solving these problems easier. The solutions provided are designed to guide students step-by-step, making it simpler to apply the concepts and solve the exercises accurately.

RS Aggarwal Solutions for Class 8 Maths Chapter 18 Exercise 18.2 Area Of A Trapezium And A Polygon Overview

In RS Aggarwal Solutions for Class 8 Maths Chapter 18 Exercise 18.2, students practice calculating the area of trapeziums and polygons. The exercise includes a variety of problems that help students apply their knowledge of geometric shapes.

For trapeziums, the solutions guide students through finding the area by using specific dimensions given in the problems.

For polygons, the exercise focuses on solving problems related to finding areas of different types of polygons based on the information provided.

The solutions prepared by the Physics Wallah team, are detailed and easy to follow, helping students grasp the concepts clearly and efficiently.

RS Aggarwal Solutions for Class 8 Maths Chapter 18 Exercise 18.2 PDF

RS Aggarwal Solutions for Class 8 Maths Chapter 18 Exercise 18.2 provide clear and detailed explanations for calculating the area of trapeziums and polygons. This exercise helps students grasp the concepts of geometry through well-structured solutions and examples.

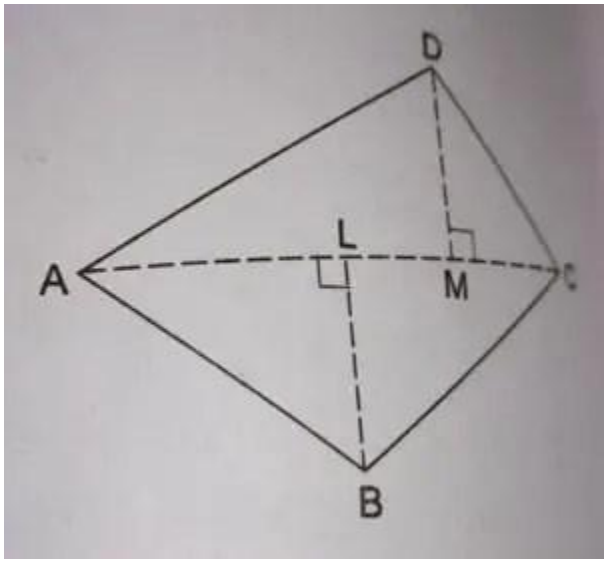
For easy reference and further study, the complete exercise PDF is available for download from the link provided below.

RS Aggarwal Solutions for Class 8 Maths Chapter 18 Exercise 18.2 PDF

RS Aggarwal Solutions for Class 8 Maths Chapter 18 Exercise 18.2 (Ex 18B)

Below we have provided RS Aggarwal Solutions for Class 8 Maths Chapter 18 Exercise 18.2 Area Of A Trapezium And A Polygon-

(Question 1) In the given figure, ABCD is a quadrilateral in which AC = 24 cm, BL ⊥ AC and DM ⊥ AC such that BL = 8 cm and DM = 7 cm. Find the area of quad. ABCD.



Solution:

Area of quad. ABCD = ar (ΔADC) + ar (ΔABC)

$$= \left(\frac{1}{2} \times AC \times BL\right) + \left(\frac{1}{2} \times AC \times DM\right)$$

$$= \left(\frac{1}{2} \times 24 \times 8\right) + \left(\frac{1}{2} \times 24 \times 7\right) \text{cm}^2$$

$$= (96 + 84)\ \text{cm}^2 = 180\ \text{cm}^2$$

(Question 2) In the given figure, ABCD is a quadrilateral – shaped field in which diagonal BD is 36 m, AL ⊥ BD and CM ⊥ BD such that AL = 19 m and CM = 11m. Find the area of the field.

Solution:

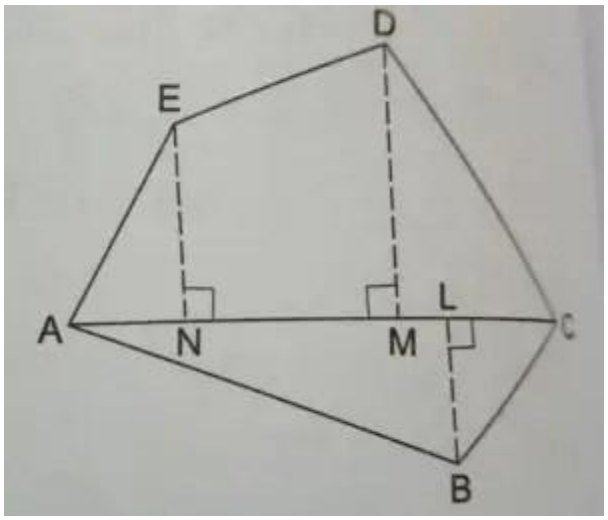
Area of the field ABCD = ar (∆ ABD) + ar (∆ BCD)

$$= \left(\frac{1}{2} \times BD \times AL\right) + \left(\frac{1}{2} \times BD \times CM\right)$$

$$= \left(\frac{1}{2} \times 36 \times 19\right) + \left(\frac{1}{2} \times 36 \times 11\right) \text{cm}^2$$

$$= (342 + 198)\ \text{cm}^2 = 540\ \text{cm}^2$$

(Question 3) Find the area of pentagon ABCDE in which BL ⊥ AC, DM ⊥ AC and EN ⊥ AC and FP ⊥ AD such that AC = 18 cm, AM = 14 cm, AN = 6 cm, BL = 4 cm, DM = 12 cm and EN = 9 cm.



Solution:

Area of the given pentagon ABCDE

= ar (∆AEN) + ar (trap. EDMN) + ar (∆DCM) + ar (∆ACE)

$$= \left\{\frac{1}{2} \times AN \times EN\right\} + \left\{\frac{1}{2} \times (EN + DM) \times MN\right\} + \left\{\frac{1}{2} \times CM \times DM\right\} + \left\{\frac{1}{2} \times AC \times BL\right\} \text{cm}^2$$

$$= \left\{\frac{1}{2} \times AN \times EN\right\} + \left\{\frac{1}{2} \times (EN + DM) \times (AM - AN)\right\} + \left\{\frac{1}{2} \times (AC - AM) \times DM\right\} + \left\{\frac{1}{2} \times AC \times BL\right\} \text{cm}^2$$

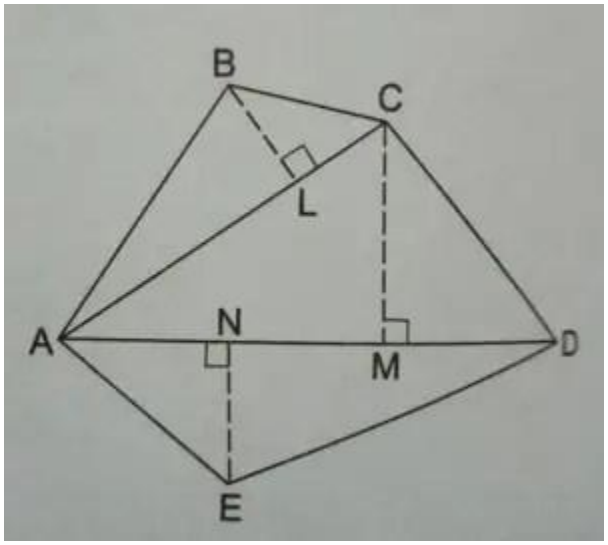
$$= \left\{\frac{1}{2} \times 6 \times 9\right\} + \left\{\frac{1}{2} \times (9 + 12) \times (14 - 6)\right\} + \left\{\frac{1}{2} \times (18 - 14) \times 12\right\} + \left\{\frac{1}{2} \times 18 \times 4\right\} \text{cm}^2$$

$$= (3 \times 9) + \left(\frac{1}{2} \times 21 \times 8\right) + \left(\frac{1}{2} \times 4 \times 12\right) + (9 \times 4) \text{ cm}^2$$

$$= \{27 + (21 \times 4) + (4 \times 6) + 36\} \text{cm}^2$$

$$= (27 + 84 + 24 + 36) \text{ cm}^2 = 171 \text{ cm}^2$$

(Question 4) Find the area of hexagon ABCDEF in which BL ⊥ AD, CM ⊥ AD, EN ⊥ AD and FP ⊥ AD such that AP = 6 cm, PL = 2 cm, LN = 8 cm, NM = 2 cm, MD = 3 cm, FP = 8 cm, EN = 12 cm, BL = 8 cm and CM = 6 cm.



Solution:

Area of hexagon ABCDEF,

= ar (∆AFP) + ar (trap. EFNP) + ar (∆DEN) + ar (∆ ABL) + ar (trap. BCLM) + ar (∆DCM)

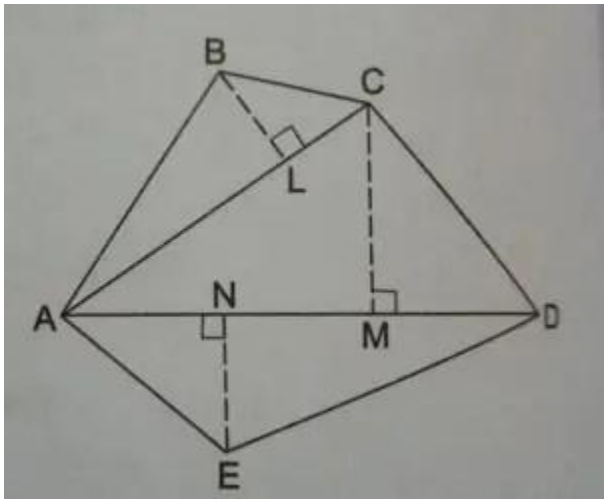
$$= \left\{\frac{1}{2} \times AP \times FP\right\} + \left\{\frac{1}{2} \times (FP + EN) \times NP\right\} + \left\{\frac{1}{2} \times DN \times EN\right\} + \left\{\frac{1}{2} \times AL \times BL\right\} + \left\{\frac{1}{2} \times (BL + CM) \times LM\right\} + \left\{\frac{1}{2} \times CM \times DM\right\} \text{cm}^2$$

$$= \left\{\frac{1}{2} \times AP \times FP\right\} + \left\{\frac{1}{2} \times (FP + EN) \times (PL + LN\right\} + \left\{\frac{1}{2} \times (MN + DM) \times EN\right\} + \left\{\frac{1}{2} \times (AP + LP) \times BL\right\} + \left\{\frac{1}{2} \times (BL + CM) \times (LN + MN)\right\} + \left\{\frac{1}{2} \times CM \times DM\right\} \text{cm}^2$$

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

$$= (24 + 100 + 30 + 32 + 70 + 9)\ \text{cm}^2 = 265\ \text{cm}^2$$

(Question 5) Find the area of pentagon ABCDE in which BL ⊥ AC, CM ⊥ AD and EN ⊥ AD such that AC = 10 cm, AD = 12 cm, BL = 3 cm, CM = 7 cm and EN = 5cm.



Solution:

Area of pentagon ABCDE= Area of ΔABC+ Area of ΔACD+ Area of ΔADE

Here , BL⊥AC,CM⊥AD,EN⊥AD

So, BL,AM and EN perpendiculars to ΔABC,ΔACDΔADE respectively.

Area of triangle with perpendicular =12×base×height
∴AreaofΔABC=1/2×AC×BL
AreaofΔACD=1/2×AD×CM

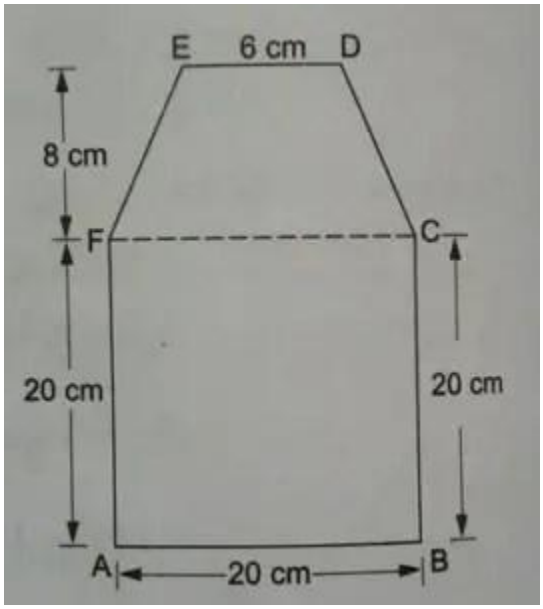
AreaofΔADE=1/2×AD×EN

Now area of pentagon ABCDE=1/2AC×BL+1/2×AD×CM+1/2×AD×EN
=(1/2×10×3)+(1/2×12×7)+(1/2×12×5)

=15+42+30

=87

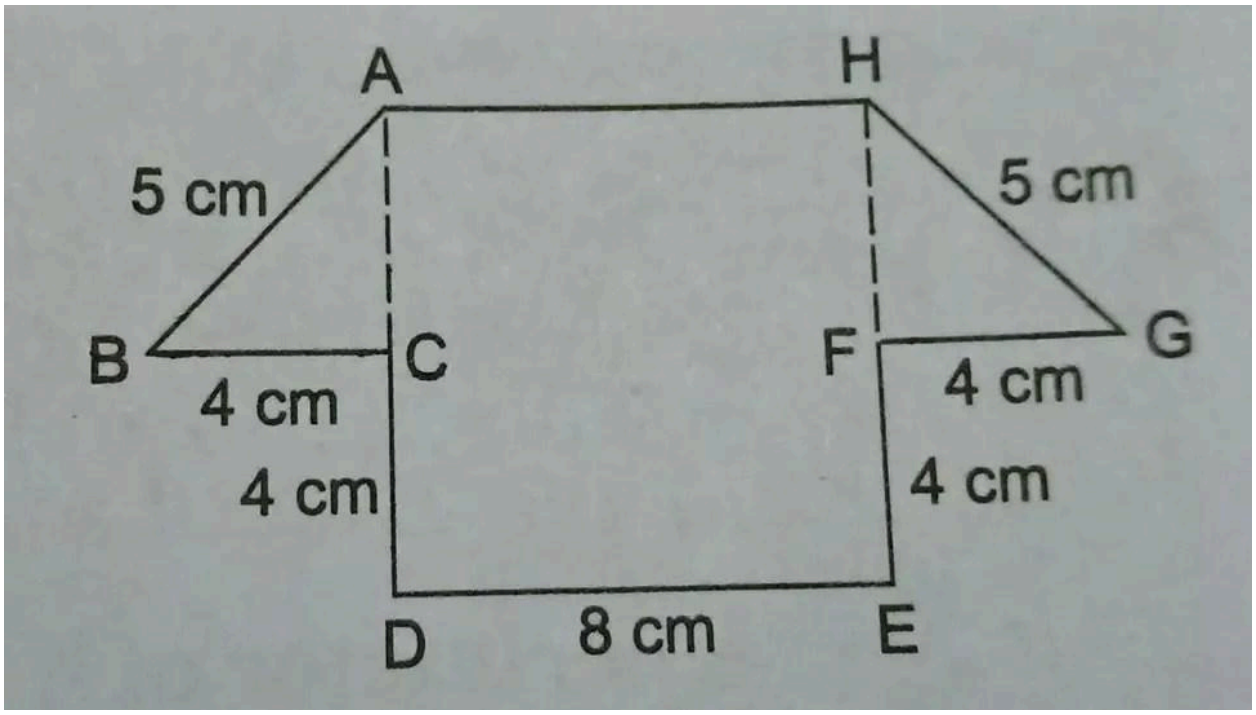
(Question 6) Find the area enclosed by the given figure ABCDEF as per dimensions given herewith.



Solution:

In the right triangle ΔABC,
We have, from the Pythagoras theorem, AB2=BC2+AC2
⇒(5)2=(4)2+AC2
⇒25=16+AC2
AC2=25−16=9=(3)2
∴AC=3 cm
∴AD=AC+CD=3+4=7 cm and also
∴BG=BC+CF+FG=4+8+4=16 cm
AH=DE=8 cm
Now area of rect. CDEF=CD×DF
=8×4=32 cm2
and area of trapezium ABGH=12(AH+BG)×AC=12×(8+16)×3 cm2=12×24×3=36 cm2∴Total area of the figure=area of trapezium ABGH+ area of rect. CDEF=32+36=68 cm2

(Question 7) Find the area of given figure ABCDEFGH as per dimensions given in it.

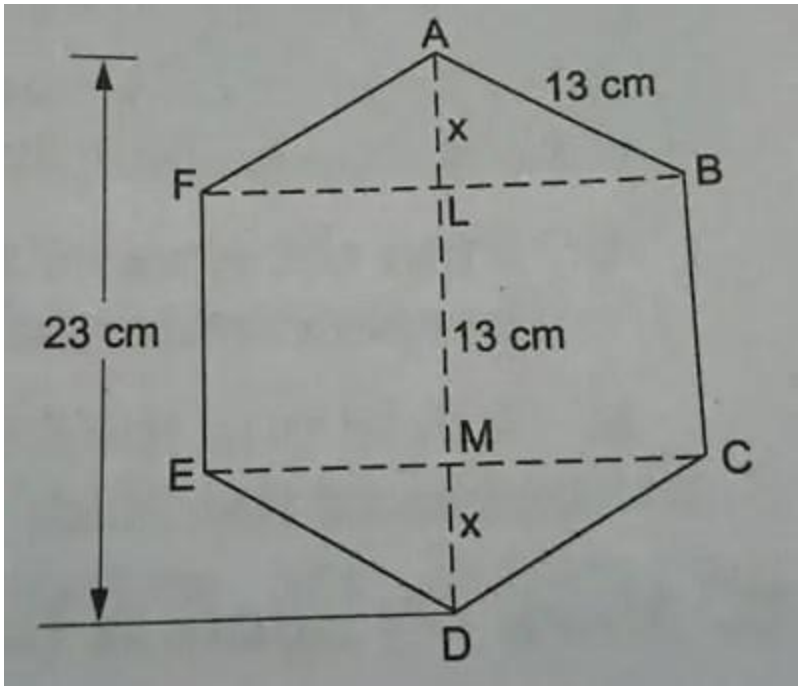


Solution:

In the right triangle ΔABC,
We have, from the Pythagoras theorem, AB2=BC2+AC2
⇒(5)2=(4)2+AC2
⇒25=16+AC2
AC2=25−16=9=(3)2
∴AC=3 cm
∴AD=AC+CD=3+4=7 cm and also
∴BG=BC+CF+FG=4+8+4=16 cm
AH=DE=8 cm
Now area of rect. CDEF=CD×DF =8×4=32 cm2
and area of trapezium ABGH=12(AH+BG)×AC=12×(8+16)×3 cm2=12×24×3=36 cm2

∴Total area of the figure=area of trapezium ABGH+area of rect. CDEF=32+36=68 cm2

(Question 8) Find the area of regular hexagon ABCDEF in which each side measures 13 cm and whose height is 23 cm, as shown in the given figure.



Solution:

AD = 23 cm, LM = 13 cm
∴AL=MD=23−132=102= 5 cm
In Δ ALB
AB2=AL2+LB2
(13)2=(5)2+LB2
169=25+LB2
⇒LB2=169−25=144=(12)2
∴LB=12cm
∴FB=EC=2×12=24cm
AF =BC = LM = 13 cm
Area of ABCDEF = area of rect. ECBF + area ΔAFB+areaΔDCE
= 24×13+12BF×AL+12EC×DM
= 312+12×24×5+12EC×DM
= 312+12×24×5+12×24×5
= 312+60+60=432cm2

Benefits of RS Aggarwal Solutions for Class 8 Maths Chapter 18 Exercise 18.2

- **Clear Explanations**: Each solution is presented with step-by-step explanations making complex concepts more accessible and easier to understand.

- **Enhanced Understanding**: By working through the detailed solutions students can gain a deeper understanding of how to calculate the area of trapeziums and polygons, which strengthens their grasp of geometry.
- **Error Correction**: Solutions provide insight into common mistakes and how to avoid them, helping students to improve their accuracy and confidence in solving similar problems.
- **Exam Preparation**: The detailed solutions can help in exam preparation by familiarizing students with the types of questions that may appear and how to approach them effectively.