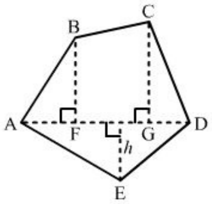
Mensuration-I area of a trapezium and a polygon Ex 20.3 Q1

Answer :

The given figure is:

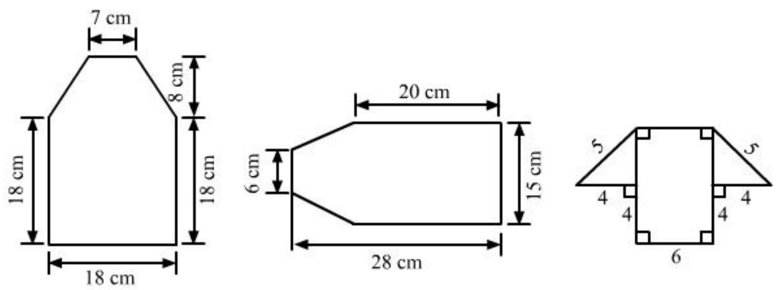


Given:
AD = 10 cm, AG = 8 cm, AH = 6 cm, AF = 5 cm
BF = 5 cm, CG = 7 cm, EH = 3 cm
$\therefore$ FG = AG - AF = 8 - 5 = 3 cm
And, GD = AD - AG = 10 - 8 = 2 cm
From given figure:

Area of Pantagon = (Area of triangle AFB) + (Area of trapezium FBCG) + (Area of triangl

Mensuration-I area of a trapezium and a polygon Ex 20.3 Q2

Answer :



(i) (ii) (iii)

(i)
The given figure can be divided into a rectangle and a trapezium as shown below:

From the above firgure:
Area of the complete figure = (Area of square ABCF)+(Area of trapezium CDEF)
$=(AB\times BC)+[\frac{1}{2}\times(FC+ED)\times(\text{Distance between FC and ED})]$
$=(18\times18)+[\frac{1}{2}\times(18+7)\times(8)]$
$=324+100$

$=424\ cm^2$

(ii)
The given figure can be divided in the following manner:

From the above figure:
AB = AC-BC=28-20=8 cm
So that area of the complete figure = (area of rectangle BCDE)+(area of trapezium ABEI

$=(BC\times CD)+[\frac{1}{2}\times(BE+AF)\times(AB)]$

$=(20\times15)+[\frac{1}{2}\times(15+6)\times(8)]$

$=300+84$

$=384\ cm^2$

(iii)
The given figure can be divided in the following manner:

From the above figure:
EF = AB = 6 cm
Now, using the Pythagoras theorem in the right angle triangle CDE:

$5^2 = 4^2+CE^2$

$CE^2 = 25-16=9$

$CE = \sqrt{9} = 3\ cm$

And, GD=GH+HC+CD=4+6+4=14 cm

$\therefore$ Area of the complete figure=(Area of rectangle ABCH)+(Area of trapezium GDEF)

$=(AB\times BC)+[\frac{1}{2}\times(GD+EF)\times(CE)]$

$=(6\times4)+[\frac{1}{2}\times(14+6)\times(3)]$

$=24+30$

$=54\ cm^2$

*********** END **********