

(22) In the opposite figure :

If $\overline{FD} \parallel \overline{AC}$ and $\overline{XE} \parallel \overline{AB}$

, $BD : DE : EC = 4 : 2 : 5$, $AB = AC = 33$ cm.

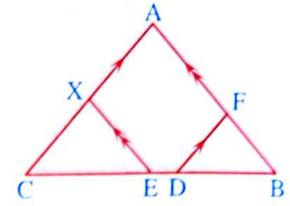
, then $AF + AX = \dots\dots\dots$ cm.

(a) 21

(b) 33

(c) 39

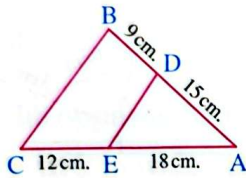
(d) 42



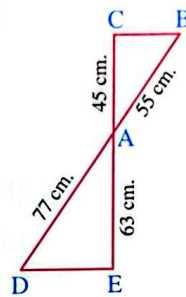
Second Essay questions

1 In each of the following figures, is $\overline{DE} \parallel \overline{BC}$?

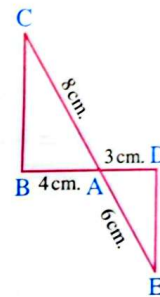
(1)



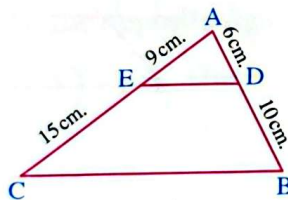
(2)



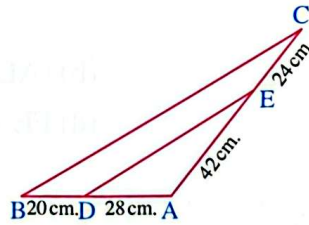
(3)



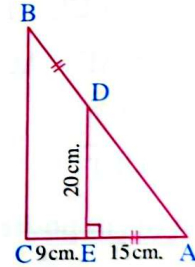
(4)



(5)



(6)

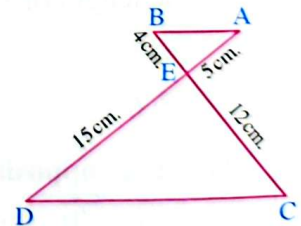


2 In the opposite figure :

$\overline{AD} \cap \overline{BC} = \{E\}$, $AE = 5$ cm. ,

$BE = 4$ cm. , $CE = 12$ cm. and $DE = 15$ cm.

Prove that : $\overline{AB} \parallel \overline{CD}$



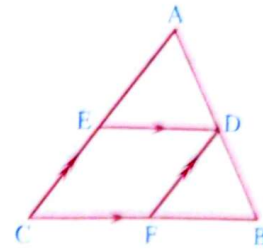
3 $\overline{XY} \cap \overline{ZL} = \{M\}$, where $\overline{XZ} \parallel \overline{LY}$, if $XM = 9$ cm. , $YM = 15$ cm. and $ZL = 36$ cm.

, find the length of : \overline{ZM}

« 13.5 cm. »

4 For each of the following, use the opposite figure and the given data to find the value of X (Lengths are measured in centimetres):

- (1) $AD = 4$, $BD = 8$, $CE = 6$ and $AE = X$
- (2) $AE = X$, $EC = 5$, $AD = X - 2$ and $DB = 3$
- (3) $AB = 21$, $BF = 8$, $FC = 6$ and $AD = X$
- (4) $AD = X$, $BF = X + 5$ and $2 DB = 3 FC = 12$



5 XYZ is a triangle in which $XY = 14$ cm., $XZ = 21$ cm., $L \in \overline{XY}$, where $XL = 5.6$ cm. and $M \in \overline{XZ}$ where $XM = 8.4$ cm. **Prove that:** $\overline{LM} \parallel \overline{YZ}$

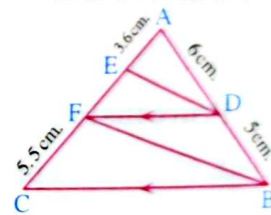
6 In the triangle ABC, $D \in \overline{AB}$, $E \in \overline{AC}$ and $5 AE = 4 EC$. If $AD = 10$ cm. and $DB = 8$ cm., is $\overline{DE} \parallel \overline{BC}$? Explain your answer.

7 ABCD is a trapezium in which $\overline{AD} \parallel \overline{BC}$, its diagonals \overline{AC} and \overline{BD} are intersected at M. If $AM = 2.5$ cm., $DB = 7\frac{1}{3}$ cm. and $MC = 3$ cm., find the length of each of: \overline{MD} and \overline{MB}

« $3\frac{1}{3}$ cm., 4 cm. »

8 In the opposite figure:

If $\overline{DF} \parallel \overline{BC}$, $AD = 6$ cm., $BD = 5$ cm., $AE = 3.6$ cm. and $FC = 5.5$ cm., then prove that: $\overline{DE} \parallel \overline{BF}$



9 ABCD is a quadrilateral, its diagonals are intersected at E. If $AE = 6$ cm., $BE = 13$ cm., $EC = 10$ cm. and $ED = 7.8$ cm., prove that: ABCD is a trapezium.

10 ABCD is a quadrilateral, $E \in \overline{AC}$, draw $\overline{EF} \parallel \overline{CB}$ to intersect \overline{AB} at F, draw $\overline{EN} \parallel \overline{CD}$ to intersect \overline{AD} at N. **Prove that:** $\overline{FN} \parallel \overline{BD}$

11 **Prove that:** The line segment drawn between two midpoints of two sides in a triangle is parallel to the third side and its length is equal to a half of the length of this side.

12 ABCD is a parallelogram, $E \in \overline{BA}$, $E \notin \overline{AB}$, draw \overline{EC} to intersect \overline{AD} at F, \overline{BD} at M. **Prove that:** $(CM)^2 = MF \times ME$