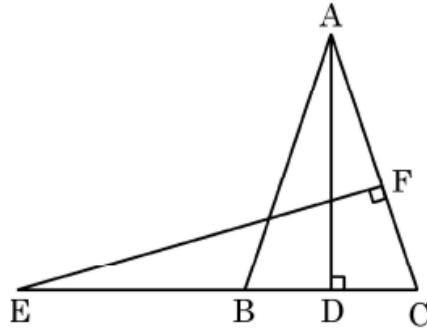
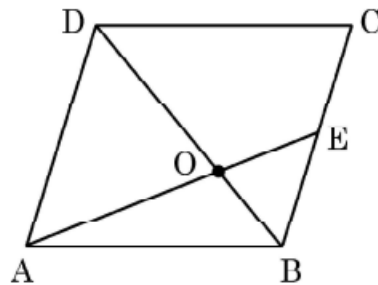


12. If AP and DQ are medians of triangles ABC and DEF respectively, where $\Delta ABC \sim \Delta DEF$, then prove that $\frac{AB}{DE} = \frac{AP}{DQ}$.

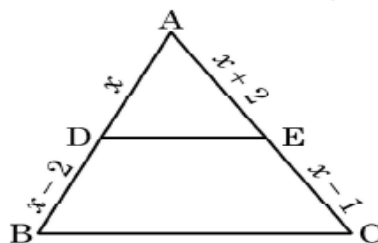
13. In the given figure, E is a point on the side CB produced of an isosceles triangle ABC with $AB = AC$. If $AD \perp BC$ and $EF \perp AC$, then prove that $\Delta ABD \sim \Delta ECF$.



14. In the given figure, ABCD is a parallelogram. AE divides the line segment BD in the ratio 1 : 2. If $BE = 1.5$ cm, then find the length of BC.

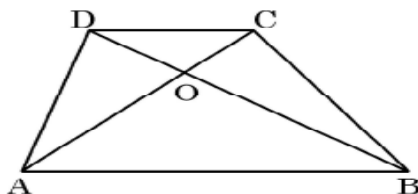


15. In the given figure, ABC is a triangle in which $DE \parallel BC$. If $AD = x$, $DB = x - 2$, $AE = x + 2$ and $EC = x - 1$, then find the value of x .



SECTION-B (3 marks Questions)

16. Diagonals AC and BD of trapezium ABCD with $AB \parallel DC$ intersect each other at point O. Show that $\frac{OA}{OC} = \frac{OB}{OD}$.



17. PA, QB and RC are each perpendicular to AC. If AP = x, QB = z, RC = y, AB = a and BC = b, then prove that $\frac{1}{x} + \frac{1}{y} = \frac{1}{z}$.

18. In the given figure, CD and RS are respectively the medians of ΔABC and ΔPQR . If $\Delta ABC \sim \Delta PQR$ then prove that :

(i) $\Delta ADC \sim \Delta PSR$
 (ii) $AD \times PR = AC \times PS$

19. Sides AB and AC and median AM of a ΔABC are proportional to sides DE and DF and Median DN of another ΔDEF . Show that $\Delta ABC \sim \Delta DEF$.

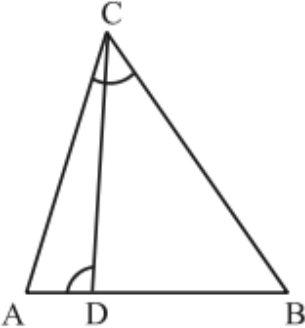
20. ABCD is a parallelogram, P is a point on side BC and DP when produced meets AB produced at L. Prove that

(i) $\frac{DP}{PL} = \frac{DC}{BL}$ (ii) $\frac{DL}{DP} = \frac{AL}{DC}$

(iii) If $LP : PD = 2 : 3$ then find $BP : BC$.

SECTION-B (5 marks Questions)

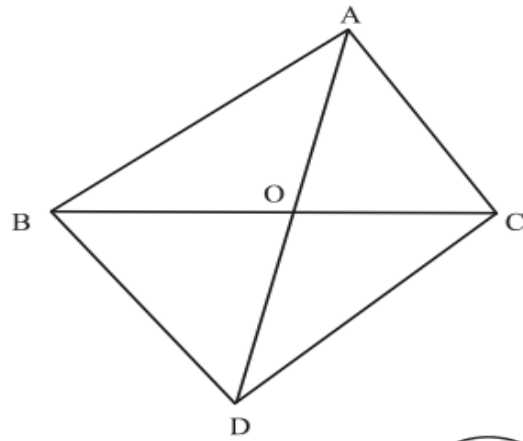
21. In the given figure, CD is the perpendicular bisector of AB. EF is perpendicular to CD. AE intersects CD at G. Prove that $\frac{CF}{CD} = \frac{FG}{DG}$.

22.	Sides AB and BC and median AD of a triangle ABC are respectively proportional to sides PQ and QR and median PM of ΔPQR . Show that $\Delta ABC \sim \Delta PQR$.
23.	Through the mid-point M of the side CD of a parallelogram ABCD, the line BM is drawn intersecting AC in L and AD (produced) in E. Prove that $EL = 2BL$.
24.	<p>D is a point on the side BC of a triangle ABC such that $\angle ADC = \angle BAC$, prove that $CA^2 = CB \cdot CD$</p> <p style="text-align: center;">OR</p> <p>If AD and PM are medians of triangles ABC and PQR, respectively where $\Delta ABC \sim \Delta PQR$, prove that $\frac{AB}{PQ} = \frac{AD}{PM}$.</p>
25.	<p>In the given figure, $\angle ADC = \angle BCA$; prove that $\Delta ACB \sim \Delta ADC$. Hence find BD if $AC = 8$ cm and $AD = 3$ cm.</p> <div style="text-align: center;">  </div>
26.	If a line is drawn parallel to one side of a triangle to intersect the other two sides in distinct points, then prove that the other two sides are divided in the same ratio.

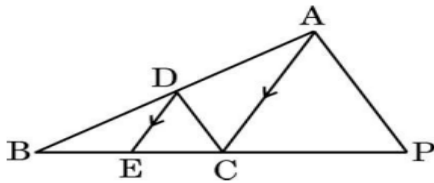
27. (A) In a ΔPQR , N is a point on PR, such that $QN \perp PR$. If $PN \times NR = QN^2$, prove that $\angle PQR = 90^\circ$.

OR

(B) In the given figure, ΔABC and ΔDBC are on the same base BC. If AD intersects BC at O, prove that $\frac{\text{ar}(\Delta ABC)}{\text{ar}(\Delta DBC)} = \frac{AO}{DO}$

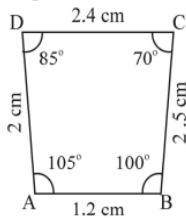


28. In the given figure, $DE \parallel AC$ and $\frac{BE}{EC} = \frac{BC}{CP}$. Prove that $DC \parallel AP$.

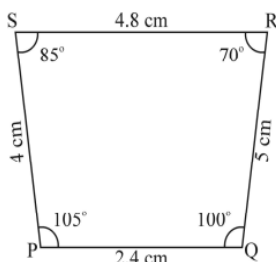


29. Observe the figures given below carefully and answer the questions :

Figure A

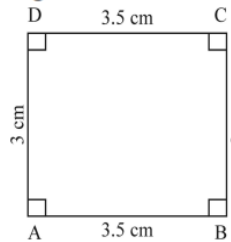


A (i)

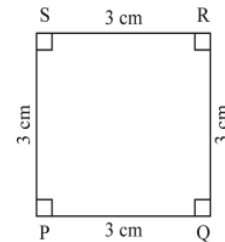


A (ii)

Figure B

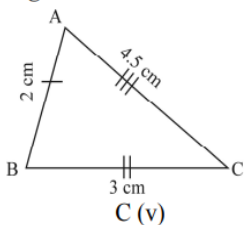


B (iii)

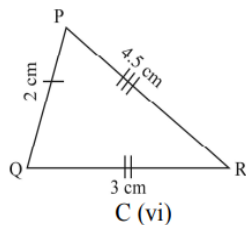


B (iv)

Figure C



C (v)



C (vi)

- (i) Name the figure(s) wherein two figures are similar. 1
 (ii) Name the figure(s) wherein the figures are congruent. 1
 (iii) (a) Prove that congruent triangles are also similar but not the converse. 2

OR

- (b) What more is least needed for two similar triangles to be congruent? 2