

INTERNATIONAL INDIAN SCHOOL BURAIDAH

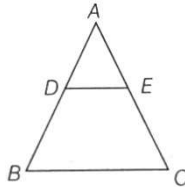
Worksheet for the Academic Year 2024-25

CLASS: X SUBJECT: MATHEMATICS DATE: 10-09-2024

LESSON: 06 TRIANGLES

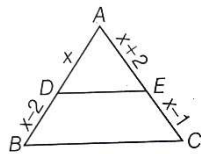
Level 1:

1. In ΔPQR and ΔMST , $\angle P = 55^\circ$, $\angle Q = 25^\circ$, $\angle M = 100^\circ$ and $\angle S = 25^\circ$.
Is $\Delta PQR \sim \Delta MST$? Why? (Ans: No)
2. In the given figure, $DE \parallel BC$. If $AD = 3\text{cm}$, $DB = 4\text{cm}$ and $AE = 6\text{cm}$, Find EC



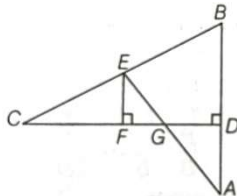
(Ans: 8cm)

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

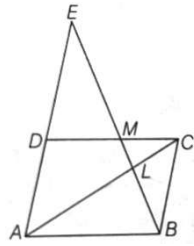


(Ans: 4)

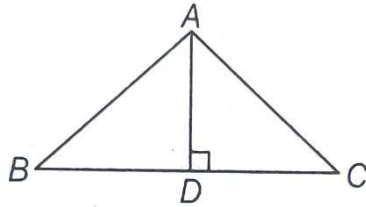
4. In the given figure, CD is the perpendicular bisector of AB . EF is perpendicular to CD . AE intersects CD at G . Prove that $\frac{CF}{CD} = \frac{FG}{DG}$



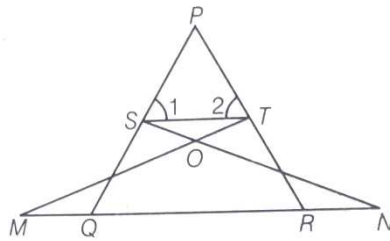
5. In the given figure, $ABCD$ is a parallelogram. BE bisects CD at M and intersects AC at L . Prove that $EL = 2 BL$



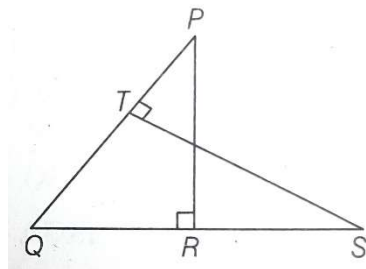
6. In the figure $\angle BAC = 90^\circ$ and $AD \perp BC$, Prove that $AD^2 = BD \times CD$



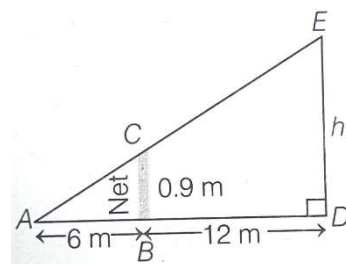
7. In the figure, $\angle 1 = \angle 2$ and $\Delta NSQ \cong \Delta MTR$, then Prove that $\Delta PTS \sim \Delta PRQ$



8. In the given figure, PQR and QST are two right-angled triangles, right-angled at R and T respectively. Prove that $QR \times QS = QP \times QT$

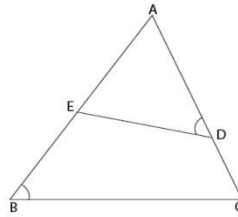


9. Find the value of the height 'h' in the adjoining figure, at which the tennis ball must be hit, so that it will just pass over the net and land 6m away from the base of the net



(Ans: 2.7m)

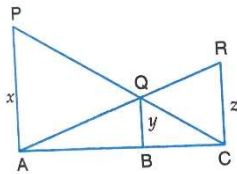
10. In the given figure if $\angle ADE = \angle B$, Show that $\triangle ADE \sim \triangle ABC$. If $AD = 3.8\text{cm}$, $AE = 3.6\text{cm}$, $BE = 2.1\text{cm}$ and $BC = 4.2\text{cm}$, Find DE



(Ans: 2.8cm)

Level 2

11. In the figure, PA , QB and RC are each perpendicular to AC , Prove that $\frac{1}{x} + \frac{1}{z} = \frac{1}{y}$

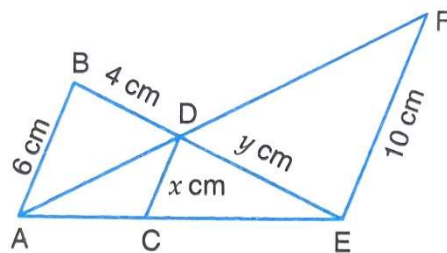


12. Prove that the line segments joining the mid-points of the sides of a triangle form four triangles, each of which is similar to the original triangle.

13. In the figure, $DEFG$ is a square and $\angle BAC = 90^\circ$. Prove that

- a) $\triangle AGF \sim \triangle DBG$ b) $\triangle AGF \sim \triangle EFC$ c) $\triangle DBG \sim \triangle EFC$
 d) $DE^2 = BD \times EC$

14. In the given figure, we have $AB \parallel CD \parallel EF$. If $AB = 6\text{cm}$, $CD = x\text{cm}$, $EF = 10\text{cm}$, $BD = 4\text{cm}$ and $DE = y\text{cm}$, Calculate the values of x and y



(Ans: 3.75cm, $y = 6.67\text{cm}$)
