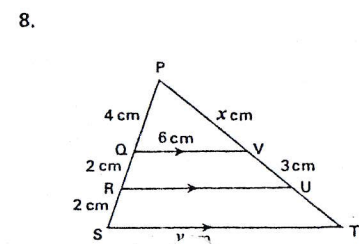
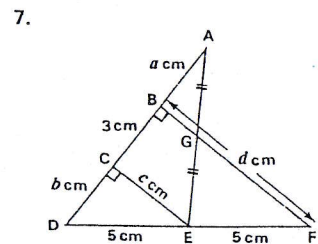
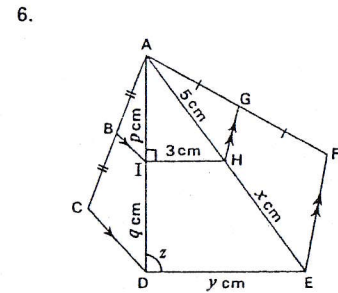
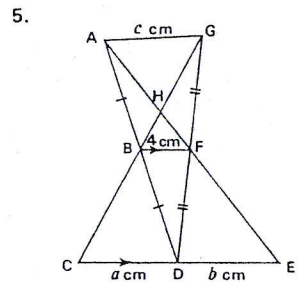
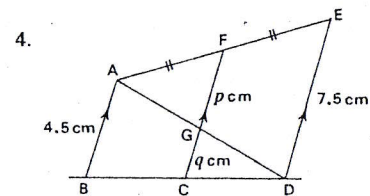
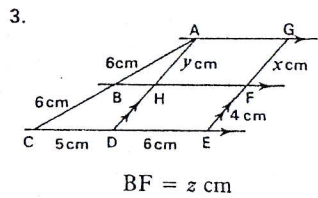
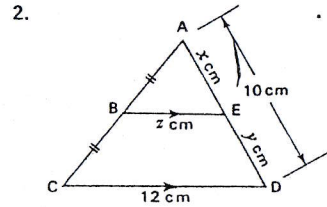
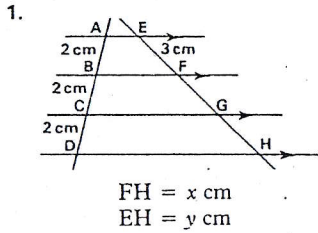
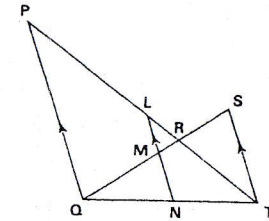


Some Important Geometrical Theorems

Find the values of the unknowns in each of the following. [Nos. 1–8]

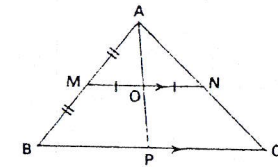


9. In the figure, $PQ \parallel LMN \parallel ST$. If $PL = LT$, prove that $QM = MS$.



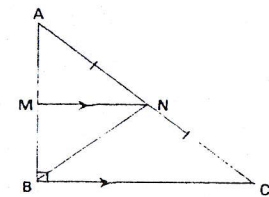
10. In the figure, $AM = MB$ and $MN \parallel BC$. O is the mid-point of MN and MON is a straight line. Prove that

- $AO = OP$ and $AN = NC$.
- P is the mid-point of BC .



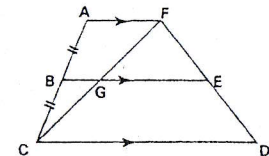
11. In the figure, ABC is a right-angled triangle. $AN = NC$ and $MN \parallel BC$.

- Prove that
 - $AM = MB$,
 - $\triangle AMN \cong \triangle BMN$,
 - $NA = NB = NC$.
- Can you draw a circle with centre at N , radius NA to pass through the points A , B and C ?



12. In the figure, $AB = BC$ and $AF \parallel BGE \parallel CD$. CGF is a straight line. Prove that

- $FG = GC$ and $FE = ED$,
- $AF + CD = 2BE$.



13. In the figure, P is the mid-point of side BC of $\triangle ABC$. Q is the mid-point of AP . BQ is produced to meet AC at R .

Prove that $AR = \frac{1}{2}RC$.

[Hint: Draw PS parallel to QR to meet AC at S .]

