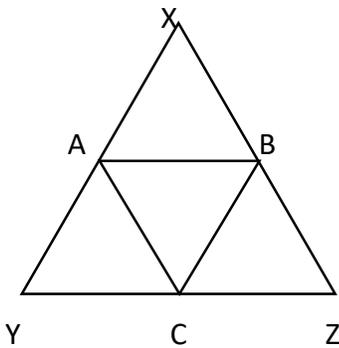




11) Midpoint Theorem

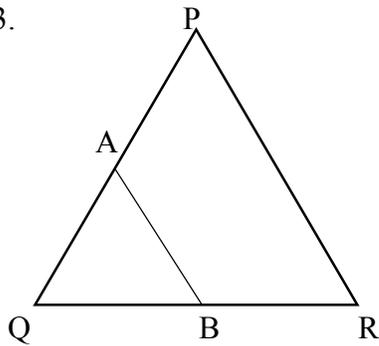
Part I

1. In the triangle XYZ,  $XY=10\text{cm}$ ,  $XZ=8\text{cm}$  and  $YZ=6\text{cm}$ . A, B and C are the mid points of XY, XZ and YZ respectively. Find the perimeter of the triangle ABC



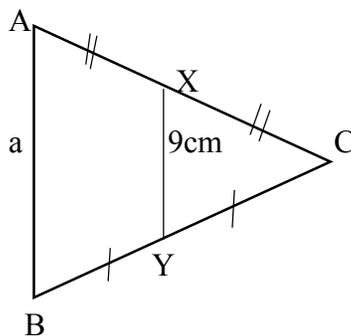
2. In the triangle ABC,  $AC=18\text{cm}$ ,  $BC=16\text{cm}$  and the perimeter of triangle ABC is  $58\text{cm}$ . X and Y are the mid points of AC and BC respectively. Find the length of XY.

3.



An equilateral triangle PQR of side length  $20\text{cm}$  is represented in the given figure. The mid points of PQ and QR are A and B respectively. Find the perimeter of the quadrilateral ABRP.

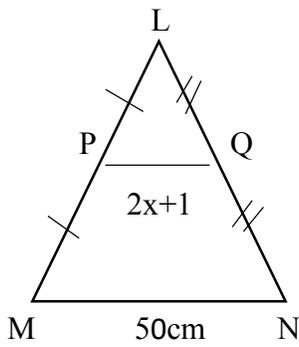
4.



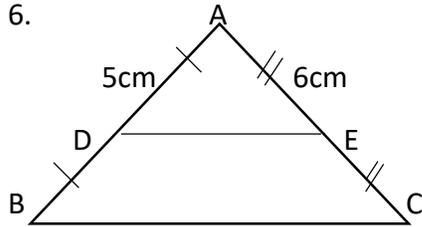
According to the data given in the figure, find the value of a.



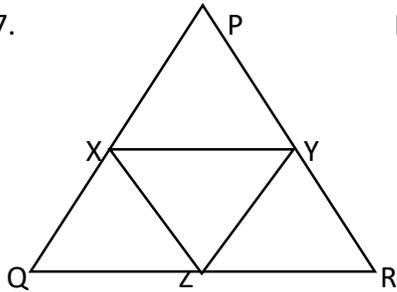
5. Find the value of  $x$  in the figure.



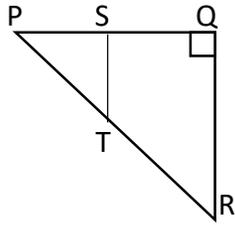
6. The perimeter of the triangle ABC is 32cm, find the length of the side DE.



7. In the triangle PQR, X, Y and Z are the mid points of PQ, PR and QR respectively. If the perimeter of the triangle XYZ is 24cm, find the perimeter of the triangle PQR.



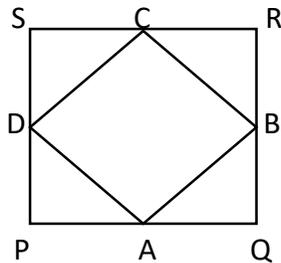
8. In the triangle PQR,  $\angle PQR = 90^\circ$ , S and T are mid points of PQ and PR respectively. If PQ = 12cm and QR = 9cm, find the length of PT.



9. ABC is an isosceles triangle, P, Q and R are mid points of AB, AC and BC respectively. If the perimeter of the triangle ABC is 36cm, find the perimeter of the triangle PQR.

10. PQRS is a square. A, B, C and D are the mid points of the sides PQ, QR, SR and SP respectively.

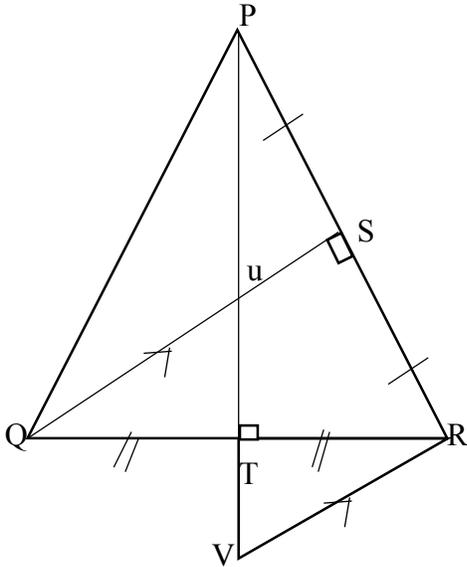
If the length of SQ is 12cm, find the perimeter of the quadrilateral ABCD



**PART II**



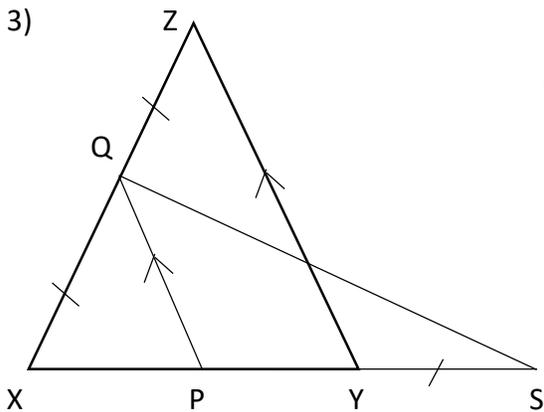
- 1) In the triangle PQR shown in the figure, PT is Perpendicular bisector of QR and QS is the perpendicular bisector of PR. The straight line through R drawn parallel to QS meets PT produced at V. QS and PT intersect at u.



Show that,

- i.  $QUT \Delta \cong TVR \Delta$
- ii.  $uS = \frac{1}{2}Qu$
- iii.  $PV = 4uT$

- 2) PQR is a triangle, S is the mid-point of PQ. A line drawn through S parallel to RQ meets PR at U and a line drawn through S, parallel to PR meets RQ at T.
- i. Draw a figure and mark the given information in it.
  - ii. Show that,  $UT = \frac{1}{2}PQ$



3) XYZ is an isosceles triangle and  $XZ=XY$ . The side XY is produced to S such that  $QZ=YS$ . If  $QP \parallel ZY$ . Show that,

- i.  $PY = YS$
- ii.  $YZ = 4RY$