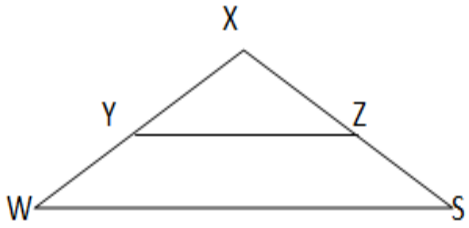
# MATHEMATICS

SpeedLabs
Assisted Practice | Expert Guidance | Personalized Insights
An Innovative Learning Methodology by IITians.

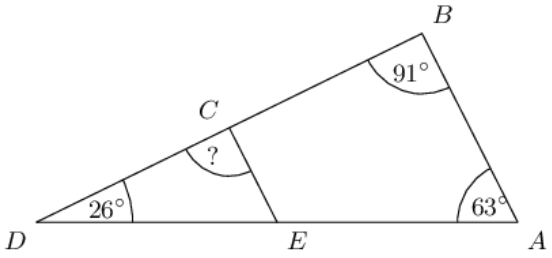
| Board – ICSE | Class –IX | Topic – Midpoint Theorem |
|---|---|---|

1. State and prove Midpoint theorem.
2. Prove that the figure obtained by joining the midpoints of the adjacent sides of a quadrilateral is a parallelogram.
3. Find the length of side WX

   Given: $YZ \parallel WS$ y and z are midpoint of WX and SX respectively $WY = 7cm, XS = 18cm \text{ and } YZ = 10cm$.

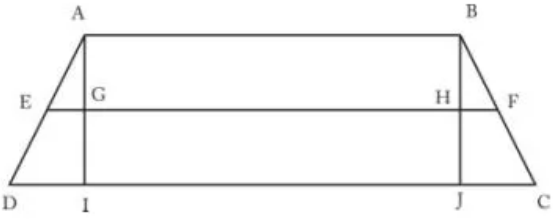



4. In a ΔABC, P is the mid-point of AB and Q is mid-point of AC and PQ = 4 cm, what will be the length of BC?
5. The diagonals of a quadrilateral intersect at right angles. Prove that the figure obtained by joining the midpoints of the adjacent sides of the quadrilateral is rectangle.
6. The figure below shows a large triangle with vertices A, B and D, and a smaller triangle with vertices at C, D and E. Point C is the mid-point of BD and point E is the mid-point of AD. Determine the value of ∠DCE.




7. In trapezium ABCD, Sides AB and DC are parallel to each other is Midpoint of AD and F is midpoint of BC.

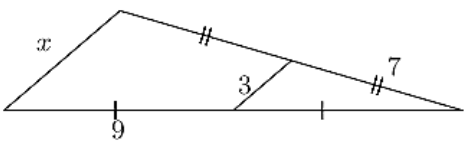
   Prove that: AB+DC=2EF.




8. In a triangle, the line drawn through the mid-point of one side is parallel to another side, what is the ratio of parallel line to the third side?
9. In a right-triangle, mid-points of corresponding sides are joined, the resulting triangle will be:

   (i) an acute angled triangle
   (ii) an obtuse angled triangle
   (iii) a right-angled triangle
   (iv) none of these

10. Consider the triangle in the diagram below. There is a line crossing through a large triangle. Notice that some lines in the figure are marked as equal to each other. One side of the triangle has a given length of 3. Some information is also given about the lengths of other lines along the edges of the triangle.



## ANSWER

1. Proving
2. Proving
3. WX=7cm
4. BC=8 cm
5. Proving
6. ∠DCE= 91°
7. Proving
8. 1:2
9. A right angled triangle
10. $x = 6$