



MATHS

BOOKS - KALYANI MATHS (ASSAMESE ENGLISH)

Triangle

Example

1. Using Theorem 6.1, prove that a line drawn through the mid-point of one side of a

triangle parallel to another side bisects the third side.. (Recall that you have proved it in class IX).



[Watch Video Solution](#)

2. Two triangles ABC and DBC are in the same side of the common base BC . Lines drawn parallel to BA and BD from any point E on BC intersect AC and DC at the points P and Q respectively. Show that PQ is parallel to AD .



[Watch Video Solution](#)

3. E is the middle point of the median AD of $\triangle ABC$. BE produced meets AC at F. Prove that $CA = 3AF$.



Watch Video Solution

4. E is the middle point of the median AD of $\triangle ABC$. BE intersects AC at F. Prove that $AF = \frac{1}{3}AC$.



Watch Video Solution

5. The area of $\triangle ABC$ is 16sq.cm. The segment XY drawn parallel to BC divides AB in the ratio of 3:5 . Draw BY and find the area of $\triangle BXY$.



[Watch Video Solution](#)

6. AD is the bisector of $\angle BAC$ of $\triangle ABC$, where D is a point on BC. Prove that

$$\frac{BD}{DC} = \frac{AB}{AC}.$$



[Watch Video Solution](#)

7. In $\triangle PQR$, the line segment PS is perpendicular to QR and $PS^2 = QS \times RS$. Show that the triangle is a right angled one.



[Watch Video Solution](#)

8. E is any point on the side BC of the parallelogram $ABCD$. AE intersects the diagonal BD at point F . Prove that $DF \times EF = FB \times FA$.



[Watch Video Solution](#)

9. Prove that the ratio of altitudes of two similar triangles is equal to the ratio of their corresponding sides.



[Watch Video Solution](#)

10. In $\triangle ABC$, $AB = 4\text{cm}$, $BC = 6\text{cm}$ and $AC = 6\text{cm}$. Construct a triangle similar to $\triangle ABC$ such that each of its sides is $\frac{4}{5}$ of the corresponding sides of $\triangle ABC$.



[Watch Video Solution](#)

11. Construct a triangle similar to a given triangle ABC with its sides equal to $\frac{5}{4}$ of the corresponding sides of a triangle ABC.



[Watch Video Solution](#)

Exercise

1. A line segment drawn parallel to the base BC of $\triangle ABC$ intersects AB and AC at X and Y respectively.

If $AB = 7.2$, $AC = 4.8$ and $AX = 4.2$ then show that $AY = 2.8$.



[Watch Video Solution](#)

2. A line segment drawn parallel to the base BC of $\triangle ABC$ intersects AB and AC at X and Y respectively.

If $AB = 4$, $AC = 3$ and $AY = 1.8$ then
prove that $BX = 1.6$.



[Watch Video Solution](#)

3. A line segment drawn parallel to the base
BC of ΔABC intersects AB and AC at X and Y
respectively.

If X divides AB in 8:3 and $AC = 8.8$ then
prove that $AY = 6.4$ and $YC = 2.4$.



[Watch Video Solution](#)

4. A line drawn parallel to the base BC of $\triangle ABC$ intersects AB and AC at P and Q respectively.

If $AB = 20$, $AC = 15$ and $AQ = 9$ then determine BP .



[Watch Video Solution](#)

5. A line drawn parallel to the base BC of $\triangle ABC$ intersects AB and AC at P and Q respectively.

If $AQ:QC = 7:4$ and $AB = 8.8$ then determine AP and PB.



[Watch Video Solution](#)

6. A line drawn parallel to the base BC of $\triangle ABC$ intersects AB and AC at P and Q respectively.

If $AB = 12$, $AP = 4$, $QC = 5$ then determine AQ.



[Watch Video Solution](#)

7. A line PQ drawn parallel to the base BC of $\triangle ABC$ intersects AB and AC at P and Q respectively.

$AP = \frac{1}{3}PB$ then determine
 $\frac{\text{area of } ABC}{\text{area of } APQ}$



[Watch Video Solution](#)

8. Prove that the line segment joining the middle point of two sides of a triangle is parallel to the third side.



[Watch Video Solution](#)

9. O is a point within the ΔABC . P, Q, R are three points on OA, OB and OC respectively such that $PQ \parallel AB$ and $QR \parallel BC$. Prove that $RP \parallel CA$.



[Watch Video Solution](#)

10. Line segment drawn parallel to the base BC of ΔABC cuts AB and AC at D and E

respectively. DP , AL and EQ are perpendicular on BC . Prove that $LP:PB = LQ:QC$.



[Watch Video Solution](#)

11. ABC is equilateral triangle and D,E are middle points of sides AB and AC then length of DE is



[Watch Video Solution](#)

12. if the lines given by $3x + 2ky = 2$ and $2x + 5y + 1 = 0$ are parallel then the value of k is



Watch Video Solution

13. P is a point on AB of a quadrilateral $ABCD$. If PQ drawn parallel to BC cuts AC at Q and QR drawn parallel to AD cuts CD at R then prove that $DR:RC = AP:PB$.



Watch Video Solution

14. In a trapezium ABCD, the side AB is parallel to DC and the diagonals AC and BD meet at X.

Prove that $XA \cdot XD = XB \cdot XC$.



[Watch Video Solution](#)

15. Prove that line segment joining the middle points of two non-parallel sides of a trapezium is parallel to the parallel sides.



[Watch Video Solution](#)

