



# MATHS

## BOOKS - KALYANI MATHS (ASSAMESE ENGLISH)

### TRIANGLES

#### 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  $AY = 2.8$ .



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

If  $AB = 4$  ,  $AC = 3$  and  $AY = 1.8$  then

prove that  $BX = 1.6$ .



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3. A line segment drawn parallel to the base  $BC$  of  $\triangle ABC$  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  $YC = 2.4$ .



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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.



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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.



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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  $AQ$ .



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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

$$\frac{\text{area of } ABC}{\text{area of } APQ}$$



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



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



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10. Line segment drawn parallel to the base BC of  $\Delta ABC$  cuts AB and AC at D and E respectively. DP, AL and EQ are perpendicular on BC. Prove that  $LP:PB = LQ:QC$ .





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



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



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**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  $DR:RC = AP:PB$ .



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**14.** In a trapezium ABCD, the side AB is parallel to DC and the diagonals AC and BD meet at X. Prove that  $XA \cdot XD = XB \cdot XC$ .



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



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