MATHS

BOOKS - KALYANI MATHS (ASSAMESE ENGLISH)

AREA OF SIMILAR TRIANGLES

Exercise

1. $\triangle ABC \sim \triangle DEF$ and their areas are respectively 64 cm^2 and 121 cm^2. If

$EF = 14.4cm$ find BC.

2. ABC is a triangle. D and E are two points on AB and AC respectively such that DE is parallel to BC and $AD = 1cm, BD = 2cm$. What is the ratio of the area of $\triangle ABC$ to the area $\triangle ADE$.

3. $\triangle ABC \sim \triangle DEF$ and their areas are respectively 64 cm^2 and 169 cm^2. If the length of $BC = 4cm$, find EF.

4. If $\triangle ABC$ is similar to $\triangle DEF$ such that BC = 4 cm, EF = 5 cm and area of $\triangle ABC = 64cm^2$. Determine the area of $\triangle DEF$

5. The areas of two similar triangles ABC and PQR are in the ratio $9:16$. If $BC = 4cm$, find the length of QR.

6. ABC is a triangle. D and E are two points on AB and AC respectively such that DE is parallel to BC and $AD = 1cm$, $BD = 2cm$. What is the ratio of the area of $\triangle ABC$ to the area $\triangle ADE$.

7. A line DE is parallel to the base BC of $\triangle ABC$ which meets side AB and AC at D and E respectively. BE and DC meets at the point F. If $AD:DB = 5:4$, find (area $\triangle DEF$)/ (area of $\triangle CFB$).

8. A line LM is drawn parallel to the base BC of $\triangle ABC$ which meets side side AB and AC at L and M respectively. If $AB = 12cm, AL = 4cm$ and $AC = 18cm$, find the length of CM.

9. A line LM is drawn parallel to the base BC of $\triangle ABC$ which meets side side AB and AC at L and M respectively. If $AB = 12cm, AL = 4cm$

and $AC = 18cm$, find (Area of $\triangle ALM$)/(Area of $\triangle ABC$).

10. ABC is a triangle of area 256 cm^2. XY is drawn parallel to BC meeting AB at X and AC at Y. If $AX:XB = 3:5$. Find the area of $\triangle AXY$.

11. Prove that the areas of two similar triangles are in the ratio of the squares of their corresponding altitudes.

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12. Prove that the areas of two similar triangles are in the ratio of the squares of their corresponding medians.

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13. Prove that the areas of two similar triangles are in the ratio of the squares of their corresponding angle bisector.

14. If the areas of a similar triangle are equal,prove that they are congruent.

15. The areas of two similar triangles are 81 cm^2 and 49 cm^2 respectively.If the altitudes of the bigger triangle is $4.5cm$, find the corresponding altitudes of the smaller triangle.

16. The areas of two similar triangles are 121 cm^2 and 64 cm^2 respectively.If the median of

the first triangle is $12.1cm$ find the corresponding median of the other.

17. If $\triangle ABC \sim \triangle DEF$ in which AX and DY are the bisector of $\angle A$ and $\angle D$ respectively. If $AX = 6.5cm$ and $DY = 5.2cm$, find the ratio of the areas of $\triangle ABC$ and $\triangle DEF$.

18. Prove that area of the equilateral triangle described on the side of a square is half. The area of the equilateral triangle described on its diagonal.

19. ABCD is a trapezium in which $AB \mid\mid DC$ and $AB = 2DC$. Determine the ratio of the areas of $\triangle AOB$ and $\triangle COD$.

20. In a trapezium ABCD, O is the point of intersection of AC and BD, AB||CD and AB=2CD. If the area of $\triangle AOB$ is 84 cm^2, find the area of $\triangle COD$.