



### Triangles Ex 4.6 Q6

**Answer :**

Given: The area of two similar triangles is  $25\text{cm}^2$  and  $36\text{cm}^2$  respectively. If the altitude of first triangle is  $2.4\text{cm}$

To find: The altitude of the other triangle

We know that the ratio of areas of two similar triangles is equal to the ratio of squares of their corresponding altitudes.

$$\frac{ar(\text{triangle1})}{ar(\text{triangle2})} = \left(\frac{\text{altitude1}}{\text{altitude2}}\right)^2$$

$$\frac{25}{36} = \left(\frac{2.4}{\text{altitude2}}\right)^2$$

Taking square root on both sides, we get

$$\frac{5}{6} = \frac{2.4}{\text{altitude2}}$$

$$\Rightarrow \text{altitude2} = 2.88 \text{ cm}$$

Hence, the corresponding altitude of the other is  $2.88 \text{ cm}$ .

### Triangles Ex 4.6 Q7

**Answer :**

Given: The corresponding altitudes of two similar triangles are  $6 \text{ cm}$  and  $9 \text{ cm}$  respectively.

To find: Ratio of areas of triangle.

We know that the ratio of areas of two similar triangles is equal to the ratio of squares of their corresponding altitudes.

$$\frac{ar(\text{triangle1})}{ar(\text{triangle2})} = \left(\frac{\text{altitude1}}{\text{altitude2}}\right)^2$$

$$\frac{ar(\text{triangle1})}{ar(\text{triangle2})} = \left(\frac{6}{9}\right)^2$$

$$\frac{ar(\text{triangle1})}{ar(\text{triangle2})} = \frac{4}{9}$$

$$ar(\text{triangle1}):ar(\text{triangle2})=4:9$$

Hence, the ratio of areas of two triangles is  $4 : 9$ .

### Triangles Ex 4.6 Q8

**Answer :**

Given: In  $\triangle ABC$ ,  $\angle A = 90^\circ$ ,  $AN \perp BC$ ,  $BC = 12\text{cm}$  and  $AC = 5\text{cm}$ .

TO FIND: Ratio of the triangles  $\triangle ANC$  and  $\triangle ABC$ .

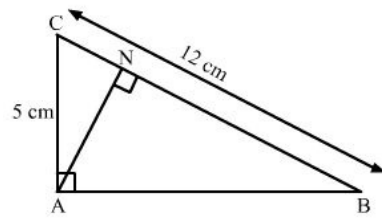
In  $\triangle ANC$  and  $\triangle ABC$ ,

$$\angle ACN = \angle ACB \quad (\text{Common})$$

$$\angle A = \angle ANC \quad (90^\circ \text{ each})$$

$$\therefore \triangle ANC \sim \triangle ABC \quad (\text{AA Similarity})$$

We know that the ratio of areas of two similar triangles is equal to the ratio of squares of their corresponding sides.



$$\begin{aligned}\therefore \frac{Ar(\triangle ANC)}{Ar(\triangle ABC)} &= \left(\frac{AC}{BC}\right)^2 \\ \Rightarrow \frac{Ar(\triangle ANC)}{Ar(\triangle ABC)} &= \left(\frac{5 \text{ cm}}{12 \text{ cm}}\right)^2 \\ \Rightarrow \frac{Ar(\triangle ANC)}{Ar(\triangle ABC)} &= \frac{25}{144}\end{aligned}$$

\*\*\*\*\* END \*\*\*\*\*