



Triangles Ex 4.3 Q6

**Answer :**

(i) It is given that  $AB = 5\text{cm}$ ,  $AC = 10\text{cm}$ ,  $BD = 1.5\text{cm}$  and  $CD = 3.5\text{cm}$ .  
We have to check whether  $AD$  is bisector of  $\angle A$ .  
First we will check proportional ratio between sides.

Now

$$\frac{AB}{AC} = \frac{5}{10} = \frac{1}{2}$$

$$\frac{BD}{CD} = \frac{1.5}{3.5} = \frac{3}{7}$$

Since  $\frac{AB}{AC} \neq \frac{BD}{CD}$

Hence  $AD$  is not the bisector of  $\angle A$ .

(ii) It is given that,  $AB = 4\text{cm}$ ,  $AC = 6\text{cm}$ ,  $BD = 1.6\text{cm}$  and  $CD = 2.4\text{cm}$ .  
We have to check whether  $AD$  is bisector of  $\angle A$ .  
First we will check proportional ratio between sides.

$$\begin{aligned}\text{So } \frac{AB}{AC} &= \frac{BD}{DC} \\ \Rightarrow \frac{4}{6} &= \frac{1.6}{2.4} \\ \Rightarrow \frac{2}{3} &= \frac{2}{3}\end{aligned}$$

(It is proportional)

Hence,  $AD$  is bisector of  $\angle A$ .

(iii) It is given that,  $AB = 8\text{cm}$ ,  $AC = 24\text{cm}$ ,  $BD = 6\text{cm}$  and  $BC = 24\text{cm}$ .  
We have to check whether  $AD$  is bisector of  $\angle A$ .  
First we will check proportional ratio between sides.

Now

$$DC = BC - BD$$

$$DC = 24 - 6$$

$$= 18$$

$$\text{So } \frac{AB}{AC} = \frac{BD}{DC}$$

$$\Rightarrow \frac{8}{24} = \frac{6}{18}$$

$$\Rightarrow \frac{1}{3} = \frac{1}{3}$$

(It is proportional)

Hence,  $AD$  is bisector of  $\angle A$ .

(iv) It is given that,  $AB = 6\text{ cm}$ ,  $AC = 8\text{ cm}$ ,  $BD = 1.5\text{ cm}$  and  $CD = 2\text{ cm}$ .  
We have to check whether  $AD$  is bisector of  $\angle A$ .  
First we will check proportional ratio between sides.

$$\text{So } \frac{AB}{AC} = \frac{BD}{DC}$$

$$\Rightarrow \frac{6}{8} = \frac{1.5}{2}$$

$$\Rightarrow \frac{3}{4} = \frac{3}{4}$$

(It is proportional)

Hence  $AD$  is bisector of  $\angle A$ .

(v) It is given that  $AB = 5$  cm,  $AC = 12$  cm,  $BD = 2.5$  cm and  $BC = 9$  cm

We have to check whether  $AD$  is bisector of  $\angle A$ .

First we will check proportional ratio between sides.

Now

$$\frac{AB}{AC} = \frac{5}{12}$$

$$\frac{BD}{CD} = \frac{2.5}{9} = \frac{5}{18}$$

$$\text{Since } \frac{AB}{AC} \neq \frac{BD}{CD}$$

Hence  $AD$  is not the bisector of  $\angle A$ .

Triangles Ex 4.3 Q7

**Answer :**

It is given that  $AD$  bisect  $\angle A$ . Also,  $AB = 12$ cm,  $AC = 20$ cm and  $BD = 5$ cm.

We have to find  $CD$ .

Since  $AD$  is the bisector of  $\angle A$

$$\text{Then } \frac{AB}{AC} = \frac{BD}{DC}$$

$$\frac{12\text{cm}}{20\text{cm}} = \frac{5\text{cm}}{DC}$$

$$12\text{cm} \times DC = 20\text{cm} \times 5\text{cm}$$

$$DC = \frac{100}{12}\text{cm}$$

$$= 8.33\text{cm}$$

$$\text{Hence } \boxed{CD = 8.33\text{cm}}$$

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