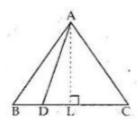


Exercise 10A

Question 26:

Given: ABC is a triangle in which D is a point on BC such that;

BD:DC = m:n



To Prove:  $ar(\Delta ABD)$ :  $ar(\Delta ACD)$ 

= m : n

Proof:  $ar(\triangle ABD) = \frac{1}{2} \times BD \times AL$ 

and,  $ar(\Delta ADC) = \frac{1}{2} \times DC \times AL$ 

Now, BD:DC = m:n

$$\therefore BD = DC \times \frac{m}{n}$$

$$\therefore \operatorname{ar}(\Delta ABD) = \frac{1}{2} \times BD \times AL$$

$$= \frac{1}{2} \times (DC \times \frac{m}{n}) \times AL$$

$$= \frac{m}{n} \times (\frac{1}{2} \times DC \times AL)$$

$$= \frac{m}{n} \times \operatorname{ar}(\Delta ADC)$$

$$\Rightarrow \qquad \frac{\text{ar}(\Delta ABD)}{\text{ar}(\Delta ADC)} = \frac{m}{n}$$

$$\Rightarrow$$
 ar( $\triangle$ ABD) : ar( $\triangle$ ADC) = m : n

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