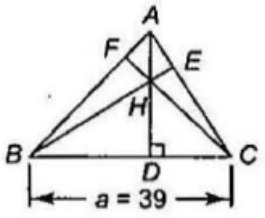
Question 4. In an acute-angled triangle ABC, point D, E and F are the feet of the perpendiculars from A, B and C onto BC, AC and AB, respectively. H is orthocentre. If $\sin A = 3/5$ and $BC = 39$, then find the length of AH.

Sol. Given $\sin A = 3/5 \Rightarrow \cos A = 4/5$
Also $a = 39$



$$\therefore \frac{a}{\sin A} = 2R$$
$$\Rightarrow \frac{39 \times 5}{3} = 2R$$
$$\Rightarrow 2R = 65$$
$$\Rightarrow AH = 2R\cos A = 65 \cdot \frac{4}{5} = 52$$