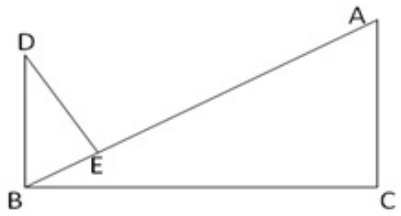
Exercise 4B

Question 11:



In the given figure: DB ⊥ AB, AC ⊥ BC and DB || AC

$\therefore \angle DBC = \angle ACB$

AB is the transversal

$\therefore \angle DBE = \angle BAC$ [Alternate ∠s]

In ΔBDE and ΔABC

$\angle DEB = \angle ACB = 90^0$

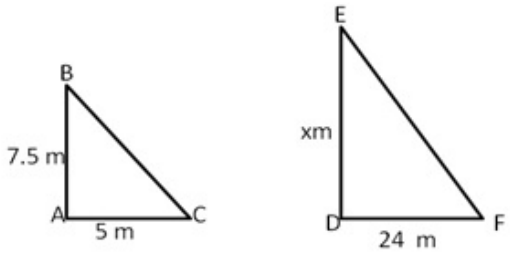
$\angle DBE = \angle BAC$

ΔDBE ~ ΔABC [By AA similarity]

$\Rightarrow \frac{BE}{DE} = \frac{AC}{BC}$

Hence proved.

Question 12:



Let AB be the vertical stick and let AC be its shadow.

Then, AB = 7.5 m and AC = 5 m

Let DE be the vertical tower and let DF be its shadow

Then, DF = 24 m, Let DE = x meters

Now, in ΔBAC and ΔEDF,

ΔBAC ~ ΔEDF by SAS criterion

$\Rightarrow \frac{AB}{DE} = \frac{AC}{DF} \Rightarrow \frac{7.5}{x} = \frac{5}{24}$

$\Rightarrow \quad x = \frac{7.5 \times 24}{5} = 36 \text{ m}$

Therefore, height of the vertical tower is 36 m.

********** END **********