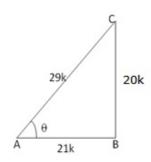


Question 16

Given: 
$$tan\theta = \frac{20}{21} = \frac{20k}{21k}$$

Let us draw a  $\triangle ABC$  in which  $\angle B = 90^{\circ}$  and  $\angle A = \theta$ 



By Pythagoras theorem, we have

$$AC^{2} = AB^{2} + BC^{2}$$

$$= (21k)^{2} + (20k)^{2}$$

$$= 441k^{2} + 400k^{2}$$

$$= 841k^{2}$$

$$\therefore AC = 29k$$

$$\sin\theta = \frac{BC}{AC} = \frac{20k}{29k} = \frac{20}{29}, \cos\theta = \frac{AB}{AC} = \frac{21k}{29k} = \frac{21}{29}$$

$$L.H.S. = \frac{1 - \sin\theta + \cos\theta}{1 + \sin\theta + \cos\theta} = \frac{1 - \frac{20}{29} + \frac{21}{29}}{1 + \frac{20}{29} + \frac{21}{29}} = \frac{\frac{29 - 20 + 21}{29}}{\frac{29 + 20 + 21}{29}}$$

$$= \frac{30}{70} = \frac{3}{7} = R.H.S$$

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