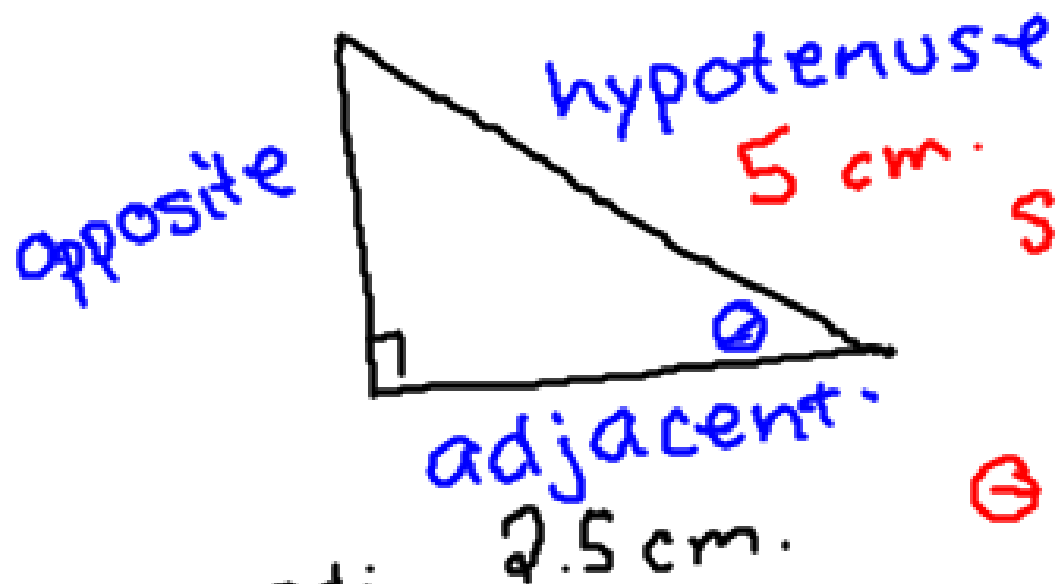


Thursday, Oct 27th - ICA all trig ratios.

SOH CAH TOA



$$\sin \theta = \frac{\text{opp}}{\text{hyp}}$$

$$\sin \theta = \frac{2.5}{5}$$

$$\theta = \sin^{-1}\left(\frac{2.5}{5}\right)$$

$$\theta = 30^\circ$$

$$\cos \theta = \frac{\text{adj}}{\text{hyp}}$$

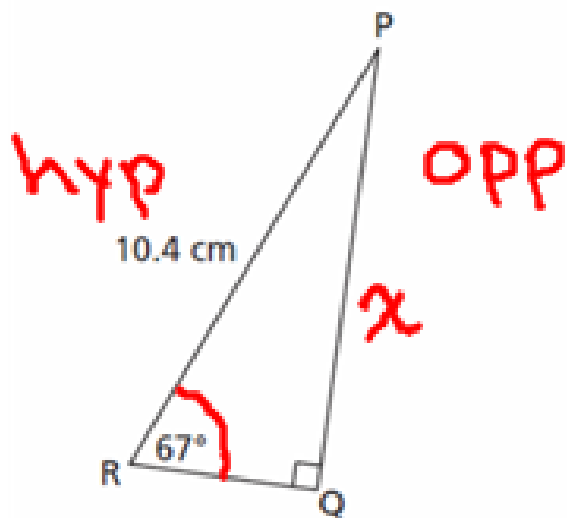
$$\cos \theta = \frac{2.5}{5}$$

$$\theta = \cos^{-1}\left(\frac{2.5}{5}\right) = 60^\circ$$

2.5 Using the Sine and Cosine Ratios to Calculate Lengths

SOH CAH TOA

1. Determine the length of PQ to the nearest tenth of a centimetre.



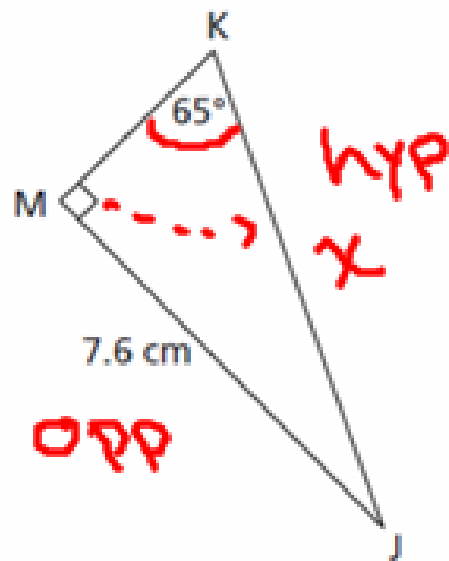
$$\sin \theta = \frac{\text{opp}}{\text{hyp}}$$

$$10.4 \cdot \sin 67^\circ = \frac{x}{10.4} \cdot 10.4$$

$$10.4 \cdot (\sin 67^\circ) = x$$

$$9.6 \text{ cm} = x$$

2. Determine the length of JK to the nearest tenth of a centimetre.



$$\sin \theta = \frac{\text{OPP}}{\text{HYP}} \quad \sin 65 = \frac{7.6}{x}$$

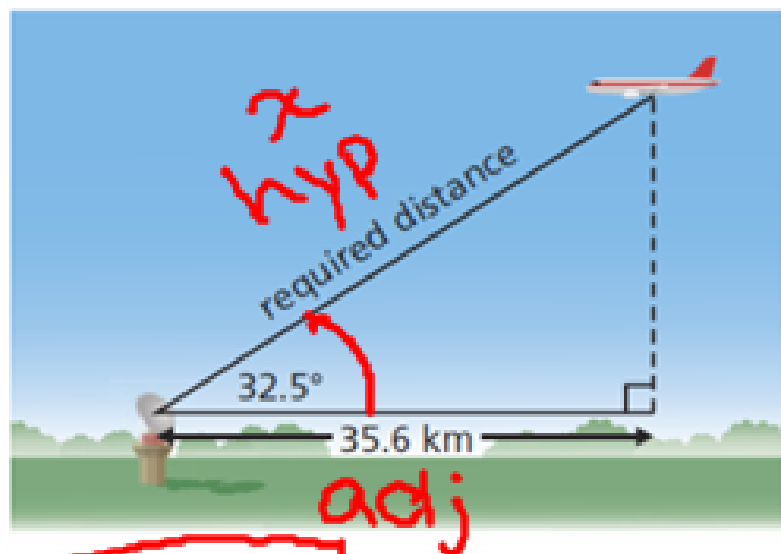
$$x \cdot \sin 65 = \frac{7.6 \cancel{x}}{\cancel{x}}$$

$$x \cdot \sin 65 = \frac{7.6}{\sin 65}$$

$$x = \frac{7.6}{\sin 65}$$

$$x = 8.4 \text{ cm}$$

3. From a radar station, the angle of elevation of an approaching airplane is 32.5° . The horizontal distance between the plane and the radar station is 35.6 km. How far is the plane from the radar station to the nearest tenth of a kilometre?



pg. 101
#3-11

SOH (CAH) TOA

$$\cos \theta = \frac{\text{adj}}{\text{hyp}}$$

$$x \cdot \cos(32.5) = \frac{35.6 \cdot x}{x}$$

$$\frac{x \cdot \cos(32.5)}{\cos(32.5)} = \frac{35.6}{\cos(32.5)}$$

$$x = \frac{35.6}{\cos 32.5}$$

$$\cos 32.5$$

$$x = 42.9 \text{ km}$$