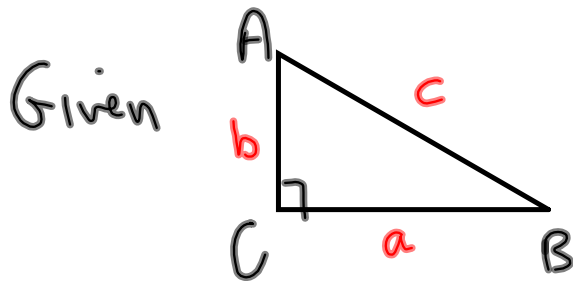


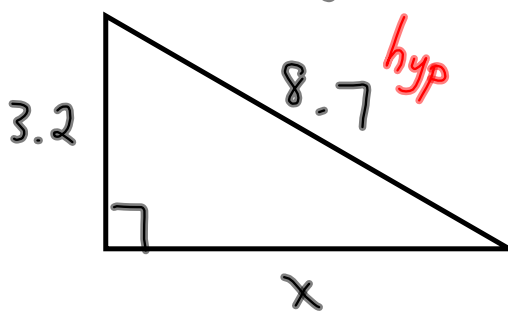
## UNIT I : Ch 3 :

Acute Triangle TrigonometryReview :Pythagorean Theorem: only for Right  $\Delta$ 

$$a^2 + b^2 = c^2$$

$$\text{leg}^2 + \text{leg}^2 = \text{hyp}^2$$

Ex: use pythagorean theorem to solve for missing side.



$$\text{leg}^2 + \text{leg}^2 = \text{hyp}^2$$

$$3.2^2 + x^2 = 8.7^2$$

$$10.24 + x^2 = 75.69$$

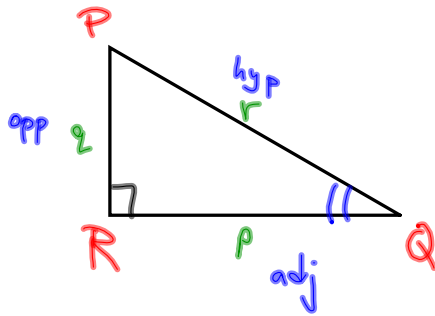
$$x^2 = 75.69 - 10.24$$

$$x^2 = 65.45$$

$$x = \sqrt{65.45}$$

$$x = 8.1$$

Review: Right Δ Trigonometry



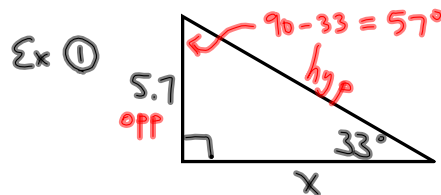
with respect to  $\angle Q$

$$\sin \angle Q = \frac{\text{opp}}{\text{hyp}} = \frac{2}{r}$$

$$\cos \angle Q = \frac{\text{adj}}{\text{hyp}} = \frac{6}{r}$$

$$\tan \angle Q = \frac{\text{opp}}{\text{adj}} = \frac{2}{6}$$

Using Trig to find missing sides or angles



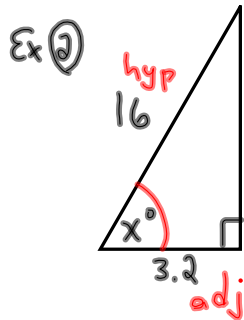
$$\tan 33^\circ = \frac{\text{opp}}{\text{adj}}$$

$$\tan 33^\circ = \frac{5.7}{x}$$

$$x = \frac{5.7}{\tan 33^\circ}$$

$$x = \frac{5.7}{0.6494}$$

$$x = 8.8$$

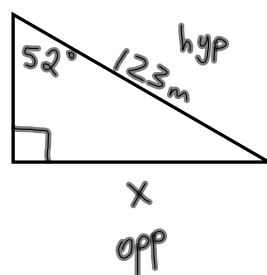


$$\cos X = \frac{\text{adj}}{\text{hyp}} \rightarrow \cos X = 0.2$$

$$\cos X = \frac{3.2}{16} \rightarrow X = \cos^{-1}(0.2)$$

$$X = 78^\circ$$

Ex ③



$$123 \sin 52^\circ = \frac{x}{123} \cdot 123$$

$$x = 123 \sin 52^\circ$$

$$x = 96.9 \text{ m}$$