

م1. $c=? , A=? , B=? \leftarrow a=3 , b=4$

$$c^2 = a^2 + b^2 = 3^2 + 4^2 = 25$$

$$\rightarrow c = \sqrt{25} = 5$$

$$\sin A = \frac{a}{c} = \frac{3}{5}$$

$$\rightarrow A = \sin^{-1} \frac{a}{c} = \sin^{-1} \frac{3}{5} = 36.87^\circ \cong 37^\circ$$

$$B = \tan^{-1} \frac{b}{a} = \tan^{-1} \frac{4}{3} = 53.13^\circ \cong 53^\circ$$

م2. $b=? , a=? \leftarrow c=20 , A=30^\circ$

$$\cos A = \frac{b}{c}$$

$$\rightarrow b = c * \cos A = 20 * \cos 30 = 17.32$$

$$\sin A = \frac{a}{c}$$

$$\rightarrow a = c * \sin A = 20 * \sin 30 = 10$$

م3. $c=? , a=? \leftarrow b=25 , A=60^\circ$

$$\cos A = \frac{b}{c} \rightarrow c = \frac{b}{\cos A} = \frac{25}{\cos 60} = 50$$

$$\tan A = \frac{a}{b} \rightarrow a = b \tan A = 25 * \tan 60 = 43.30$$

م4. $a=? , A=? , B=? \leftarrow b=10 , c=15$

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

$$\rightarrow a = \sqrt{c^2 - b^2} = \sqrt{15^2 - 10^2} = 11.18$$

$$A = \cos^{-1} \frac{b}{c} = \cos^{-1} \frac{10}{15} = 48.19^\circ$$

$$B = 90 - A = 90 - 48.19 = 41.81^\circ$$

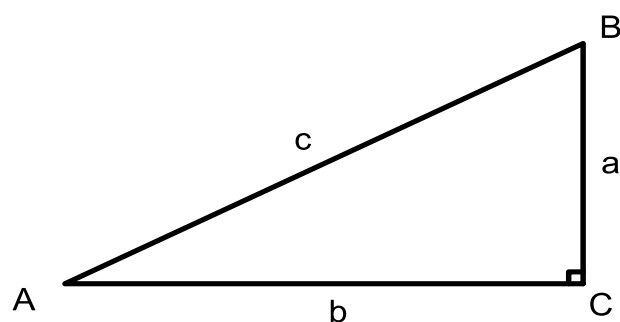
ت1. $c=? , A=? , B=? \leftarrow a=100 , b=240$

$$[c=260 , A=22.6^\circ , B=67.4^\circ]$$

ت2. $b=? , a=? \leftarrow c=100 , A=36.87^\circ$

$$[a=60 , b=80]$$

مثلث قائم الزاويه



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

$$\sin A = \frac{\text{ضلع مقابل}}{\text{وتر}} = \frac{a}{c}$$

$$\sin B = \frac{\text{ضلع مقابل}}{\text{وتر}} = \frac{b}{c}$$

$$\cos B = \frac{\text{ضلع مجاور}}{\text{وتر}} = \frac{a}{c}$$

$$\cos A = \frac{\text{ضلع مجاور}}{\text{وتر}} = \frac{b}{c}$$

$$\tan A = \frac{\text{ضلع مقابل}}{\text{ضلع مجاور}} = \frac{a}{b}$$

$$\tan B = \frac{\text{ضلع مقابل}}{\text{ضلع مجاور}} = \frac{b}{a}$$

$$\sin A = \frac{a}{c} \rightarrow A = \sin^{-1} \frac{a}{c}$$

$$\cos A = \frac{b}{c} \rightarrow A = \cos^{-1} \frac{b}{c}$$

$$\tan A = \frac{a}{b} \rightarrow A = \tan^{-1} \frac{a}{b}$$

$$\sin B = \frac{b}{c} \rightarrow B = \sin^{-1} \frac{b}{c}$$

$$\cos B = \frac{a}{c} \rightarrow B = \cos^{-1} \frac{a}{c}$$

$$\tan B = \frac{b}{a} \rightarrow B = \tan^{-1} \frac{b}{a}$$