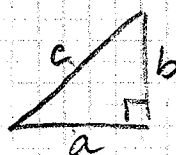
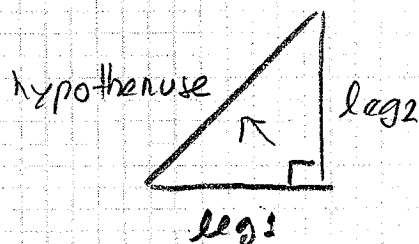


RIGHT TRIANGLE TRIGONOMETRY

Pythagorean Theorem

$$\text{hyp}^2 = \text{leg}_1^2 + \text{leg}_2^2$$

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



$$\text{sine of } \alpha = \frac{\text{opposite side}}{\text{hypotenuse}} = \frac{b}{c} = \sin \alpha$$

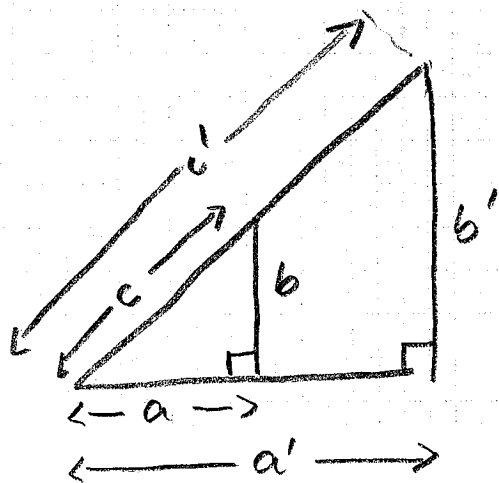
$$\text{cosine of } \alpha = \cos \alpha = \frac{\text{adjacent side}}{\text{hyp}} = \frac{a}{c}$$

$$\text{tangent of } \alpha = \tan \alpha = \frac{\text{op}}{\text{adj}} = \frac{b}{a}$$

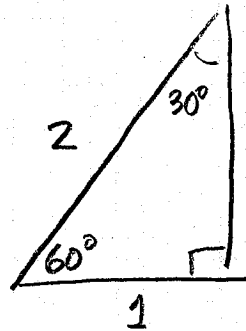
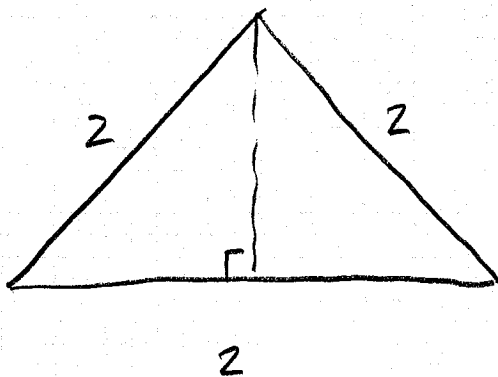
$$\text{cotangent of } \alpha = \cot \alpha = \frac{\text{adj}}{\text{op}} = \frac{a}{b}$$

$$\text{secant of } \alpha = \sec \alpha = \frac{\text{hyp}}{\text{adj}} = \frac{c}{a}$$

$$\text{cosecant of } \alpha = \csc \alpha = \frac{\text{hyp}}{\text{op}} = \frac{c}{b}$$



$$\tan \alpha = \frac{b}{a} = \frac{b'}{a'} = \tan \alpha$$

TRIGONOMETRIC FUNCTIONS OF 30° and 60° 

$$2^2 = 1^2 + x^2 \Rightarrow 4 = 1 + x^2 \Rightarrow 3 = x^2 \Rightarrow$$

$$x = \sqrt{3}$$

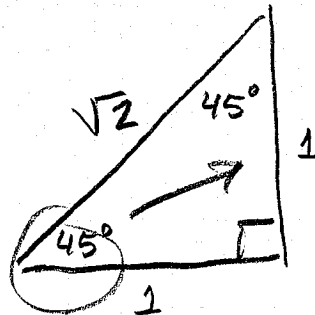
$$\sin 60^\circ = \frac{\sqrt{3}}{2} \approx \frac{1.73}{2} = .866 \quad \sin 60^\circ \approx .866$$

$$\cos 30^\circ = \frac{\sqrt{3}}{2}$$

TRIGONOMETRIC FUNCTIONS OF 45°

$$\sin 45^\circ = \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

$$\cos 45^\circ = \frac{1}{\sqrt{2}}$$



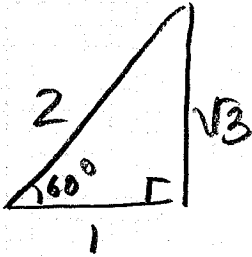
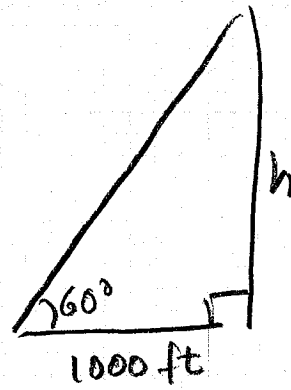
$$\tan 45^\circ = \frac{1}{1} = 1$$

$$\cot 45^\circ = \frac{1}{1} = 1$$

$$\sec 45^\circ = \sqrt{2}$$

$$\csc 45^\circ = \sqrt{2}$$

$$\tan 60^\circ = \frac{h}{1000} = \sqrt{3}$$



$$\Delta h = \sqrt{3} * 1000 \approx 1.7 * 1000 = 1700 \text{ ft}$$