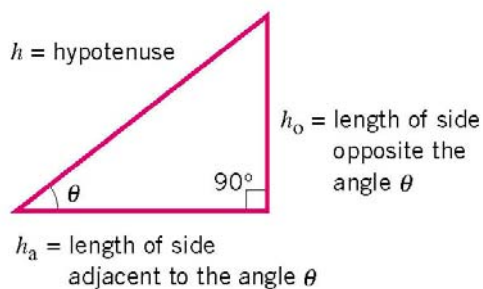


CHAPTER 1: Trig & Vectors



$$\sin \theta = \frac{h_o}{h}$$

$$\cos \theta = \frac{h_a}{h}$$

$$\tan \theta = \frac{h_o}{h_a}$$

$$h^2 = h_a^2 + h_o^2$$

Addition of vectors by components:

$$\vec{C} = \vec{A} + \vec{B}$$

$$C_x = A_x + B_x$$

$$C_y = A_y + B_y$$

CHAPTER 3: Motion in 2D

x Component

y Component

$$v_x = v_{0x} + a_x t$$

$$v_y = v_{0y} + a_y t$$

$$x = x_0 + v_{0x} t + \frac{1}{2} a_x t^2$$

$$y = y_0 + v_{0y} t + \frac{1}{2} a_y t^2$$

$$x = x_0 + \left(\frac{v_x + v_{0x}}{2} \right) t$$

$$y = y_0 + \left(\frac{v_y + v_{0y}}{2} \right) t$$

$$v_x^2 = v_{0x}^2 + 2a_x(x - x_0)$$

$$v_y^2 = v_{0y}^2 + 2a_y(y - y_0)$$

Projectile Motion: Magnitude of $a_y = 9.8 \text{ m/s}^2$; $a_x = 0$