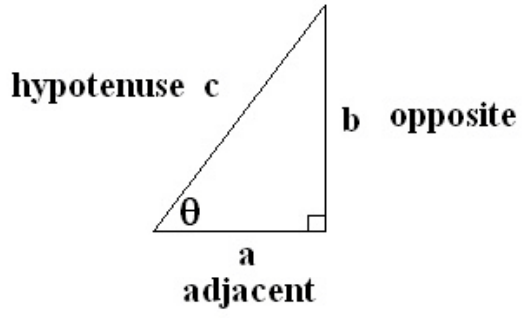
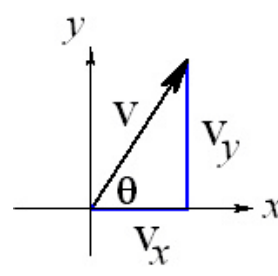


Basic Mathematics – Chapter 1

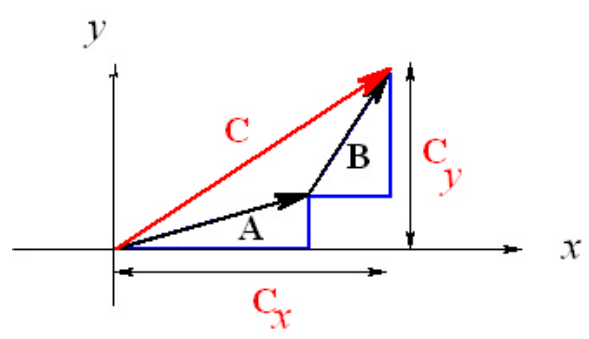
Trigonometric Functions

 <p>hypotenuse c</p> <p>θ</p> <p>a adjacent</p> <p>b opposite</p>	<p>Pythagorean Theorem: $a^2 + b^2 = c^2$</p> <p>Trigonometric Functions:</p> $\sin q = \frac{\text{opp}}{\text{hyp}}$ $\cos q = \frac{\text{adj}}{\text{hyp}}$ $\tan q = \frac{\text{opp}}{\text{adj}} = \frac{\sin q}{\cos q}$
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Vectors

	<p>Vector Components:</p> $V_x = V \cos q$ $V_y = V \sin q$ <p>Magnitude and Direction:</p> $V = \sqrt{V_x^2 + V_y^2}$ $\tan q = \frac{V_y}{V_x}$
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Vector Addition

	<p>Adding Vectors: $A + B = C$</p> <ol style="list-style-type: none">1. Add all x-components: $A_x + B_x = C_x$2. Add all y-components: $A_y + B_y = C_y$3. Find the magnitude and direction of the sum: $C = \sqrt{C_x^2 + C_y^2}, \quad \tan q = \frac{C_y}{C_x}$
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