

Physics 101Rec
Quiz#2
Chapter 3c

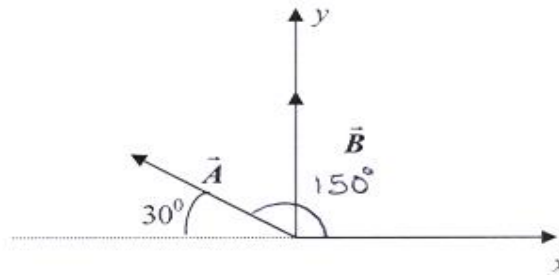
Instructor: Dr. A. Mekki

Name: _____

Id: _____

Sect: _____

Each of the vectors \vec{A} and \vec{B} shown in the figure has a magnitude of 3.0 m. Find the **magnitude** of the following vectors: $\vec{A} - \vec{B}$, $2\vec{A} + \vec{B}$, and $\vec{A} - \frac{\vec{B}}{2}$.



$$\vec{A} = 3 \cos 150^\circ \hat{i} + 3 \sin 150^\circ \hat{j} = -2.6 \hat{i} + 1.5 \hat{j}$$

$$\vec{B} = 0 \hat{i} + 3 \hat{j}$$

$$\vec{A} - \vec{B} = -2.6 \hat{i} - 1.5 \hat{j}$$

$$|\vec{A} - \vec{B}| = 3 \text{ m}$$

$$2\vec{A} = -5.2 \hat{i} + 3 \hat{j}$$

$$2\vec{A} + \vec{B} = -5.2 \hat{i} + 6 \hat{j}$$

$$|2\vec{A} + \vec{B}| = 8 \text{ m}$$

$$\frac{\vec{B}}{2} = 0 \hat{i} + 1.5 \hat{j}$$

$$\vec{A} - \frac{\vec{B}}{2} = -2.6 \hat{i} + 0 \hat{j}$$

$$|\vec{A} - \frac{\vec{B}}{2}| = 2.6 \text{ m}$$