

# Chapter 1 - Units, Measurements and Vectors

## Physics 206

**Problem 1 – Understanding LO's** This student's exam grade is a 60%.

**Problem 2 – Understanding how to calculate your grade** This student's grade is a 75.53%.

**Problem 3a** Consistent.

**Problem 3b** Not Consistent.

**Problem 3c** Consistent.

**Problem 3d** Not Consistent.

**Problem 4**  $m = 2, n = -2, p = 1$

**Problem 5**  $m = 1/3, n = -1/3, p = 2/3$

**Problem 6**  $m = 1/2, n = -3/2, p = 1/2$

**Problem 7a**  $\vec{C} = -7.29\hat{i} - 22.7\hat{j}$

**Problem 7b**  $C = 23.8$  at  $\theta = 72.2$  degrees south of west

**Problem 8**  $B = 28.0$  m

**Problem 9a**  $|\vec{A} \times \vec{B}| = 4.80$

**Problem 9b**  $\theta = 24.6$  or  $155.4$  degrees

**Problem 9c**  $\vec{A} \cdot \vec{B} = \pm 8.03$

**Problem 10**  $\theta = 123$  degrees

**Problem 11**

(a)  $\vec{A} \times \vec{B} = -14\hat{i} + 8\hat{j} + 20\hat{k}$

$$\vec{A} \cdot \vec{B} = 35$$

(b)  $\vec{C} \times \vec{A} = -42\hat{i} + 24\hat{j} + 5\hat{k}$

$$\vec{C} \cdot \vec{A} = -25$$

(c)  $\vec{D} \times \vec{B} = -42\hat{i} + 24\hat{j} + 60\hat{k}$

$$\vec{D} \cdot \vec{B} = -11$$

(d)  $\vec{C} \times \vec{D} = -30\hat{i} + 80\hat{j} + 35\hat{k}$

$$\vec{C} \cdot \vec{D} = 33$$