

Set #1 - for Wd Oct. 8

Read HR&K Chapter 1 - particularly Section 1.7
Chapter 2 - Sections 2.1 through 2.3
Appendix H: Vectors (2D and 3D)

Read K&K Chapter 1 - Sections 1.1 through 1.6

From Resnick, Halliday & Krane, Vol. 1 (5th Edition):

Ch. 1 Exercises 32, 33.

Ch. 2 Exercise 10. Problems 1, 2, 3.

1. Indicate the properties of two vectors \vec{a} and \vec{b} such that

a) $\vec{a} + \vec{b} = \vec{c}$ and $a + b = c$ (note: $|\vec{a}| = a$)

b) $\vec{a} + \vec{b} = \vec{a} - \vec{b}$

c) $\vec{a} + \vec{b} = \vec{c}$ and $a^2 + b^2 = c^2$

2. A tourist flies from Washington D.C. to Manila. The latitude and longitude of the two cities are 39° N, 77° W and 15° N, 121° E respectively. The radius of the earth is 6370 Km.

a) Describe the displacement vector.

b) What is its magnitude?

3. You have 200 ft of steel sheet 0.020 in thick and you want to wrap it around a 6.00 in diameter tubing. How many turns of steel will you get? Neglect any air gap effects.