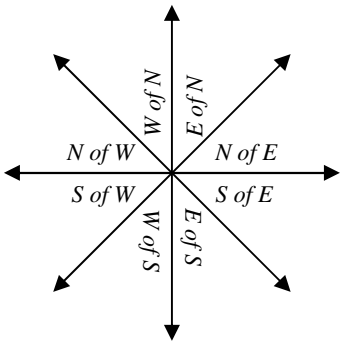
A-Day: due Fri., 9/29 (Assigned 9/27)
B-Day: due Mon., 10/2 (Assigned 9/28)

Two Dimensional Motion 6



1. Add these vectors together: V_1 = 45 m/s at 65° E of N. V2 = 30 m/s at 60° S of E.

2. A bird takes off from the ground to avoid being captured by a fox. When it leaves the ground it is going 1 m/s at an angle of 30° to the ground. It accelerates 0.5 m/s^2 for 5 seconds.
   A) The Symbiotic relationship between the fox and the bird is called:
   B) Treating the bird as linear motion, write the variables for the bird, find a kinematic equation, solve for ***how far*** the bird flies from the ground to the tree. (This is the hypotenuse of a right triangle.)

   C) If the fox continues to pursue the bird (running beneath it) how far does the fox run? (The fox is running horizontally.)

   D) If the bird ends up in a tree, how high up did it land? ("How high" is vertical.)

Projectile Motion:

3. When we threw objects into the air,
   A) which component (x or y) had an acceleration?
   B) What was the x-direction acceleration (a_x)?
   C) What was a_y?
   D) The y-direction is really only what kind of motion?

4. When you throw an object (projectile motion):
   A) Which direction stops the ball, x or y?
   B) Which will go farther a ball thrown from the ground or thrown from the roof?
   C) When you throw an object horizontally why doesn't it go very far?

   D) When you throw an object almost straight up, why doesn't it go very far?

5. Using your Projectile Motion Notes: A cannonball is fired at 40 m/s at 50° to the horizon.
   A) a_y = _____; a_x = _____.
   B) Draw the vector and resolve it into its x and y components. (Find Vx and Vy.)

   C) How long does it takes for the ball to come back to the earth? (Find t.)

   D) Find how far the cannonball will travel from where it was shot (x-displacement).

More on back

6. A pimple shows the _____ system in action. The white puss tells you this system is doing what?

7. When you lay in the sun
   A) you get hot due to what type of thermal transfer?
   B) Which body system do you damage?