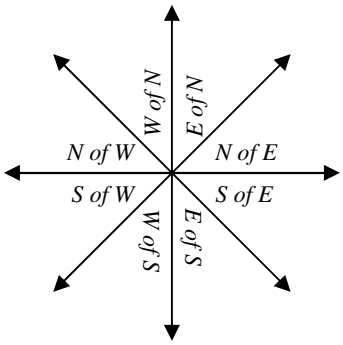
A-Day: due Tues., 10/3 (Assigned 9/29)
B-Day: due Wed., 10/4 (Assigned 10/2)

Two Dimensional Motion 7



1. Add these vectors together: V_1 = 15 m at 65° N of E. V_2 = 30 m E.

2. A cow bird is eating tics off of a cow when it is spooked by a passing car. The bird flies off at 2 m/s at an angle of 20° to the ground. The bird accelerates 1.2 m/s^2 for 4 seconds.
   A. The cow is aided by the removal of the tic. This relationship between the bird and cow is an example of:
   B. Find how much altitude the bird gains.

   C. If the cow is 1.4 meters high, how high is the bird up in the air (total)?

3. A cannon fires a projectile at 30° and 68 m/s. Find how far away the projectile lands (known as its _____).
   [*If you have trouble reference the notes "Projectile Motion Example".]*

4. A ball is thrown from the ground at 25 m/s at 45° to the ground. Find how high up it goes.
   A. Since it is at an angle you must _____ it into its _____.
   B. "How high" is in which direction (x or y)?
   C. "Find how high" means that the object is at the top of its path (trajectory). You know at the top Vy_f = _____.
   D. Using the above hints, find how high it goes.

5. A bullet is fired horizontally from a gun aimed directly at a coconut dropped from a tree 12 meters away. The coconut is at the exact same height as the gun and drops at the exact same time.
   A. Is the coconut an example of a producer or a consumer?
   B. Will the bullet hit the coconut?
   C. Why or why not?

More on back

6. If they object has 22 grams of mass.
   A) Find its density.

   B) Will it sink or float in water?
   C) Why? (The picture may not be water.)

   D) If put into a liquid with a density of 2.86 g/mL would it float?