A-Day: Due Tues., Oct 7 (Assigned: 10/3)
B-Day: Due Mon., Oct 8 (Assigned: 10/6)

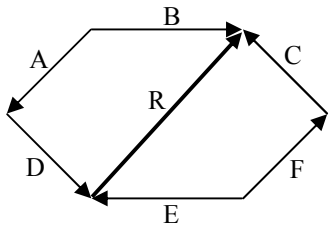
2008 Two Dimensions 6

1. Projectile Motion?
   A. ___ Dropping a helium balloon
   B. ____ Throwing a ball horizontally.
   C. ___ Jumping off of a diving board.
   C. ____ Running on the ground.

2. X or Y direction?
   A. ___ North?
   B. ___ East?
   C. ___ West?
   D. ___ Up?
   E. ___ Down?
   F. ___ Acceleration due to gravity?

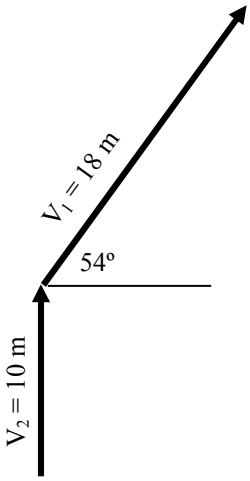
3. A person walks 65 meters at an angle of 22°.
   How far east did they walk?

4. On the diagram at the left, R is the path from the start to the finish.
   Give two ways you could make R with the available vectors.



5. Again, using the vectors on the diagram,
   mathematically add together A + B + F + E + C.

6. Answer the following questions about adding vectors.
   A. How do you calculate X_{total}?
   B. How do you calculate the magnitude of the resultant?
   C. How do you calculate each x-component?
   D. How do you calculate the direction of the resultant?
   E. How do you calculate Y_{total}?
   F. How do you calculate each y-component?



7. Using the diagram at the left, add the two vectors together.
   (-20 points if blank).

8. Projectile Motion questions
   A. In which direction is a projectile at constant motion.
   B. What is the y-direction acceleration a_y for a projectile?
   C. If a projectile is launched from the ground to the ground, Δy =?
   D. If a projectile is launched from the top of a 8 m tall cliff, Δy = ?
   E. What is the x-direction acceleration (a_x)?
   F. If a projectile's Vy is 30 m/s and it comes back to the ground, Vf =?
   G. If a projectile is shot from a cliff to the ground below, will the final y-velocity be the same, greater or less than its initial y-velocity?
   H. An object that rolls off of a desk (or is shot horizontally) has what initial y-velocity?

9. How far a projectile goes in the x-direction is called what?

10. A projectile is shot going 90 m/s at an angle of 35°. Find how far away it lands.
(-20 points for blank.)