

PreAP: due Mon, Sept 26 (Assigned: Thur., Sept 22)
Reg: due Tues., Sept 27 (Assigned: Fri., Sept 23)

Projectile Motion 2

1. A boat heads due north across a wide river going 10 km/hr. The river's current runs at 4 km/hr at 20° North of east. Find the boat's path and its speed. (Magnitude and direction, folks.)
2. A cow bird is eating ticks 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 tick. 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?
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" given out in class.]
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 it is going is in which direction (x or y)? (So use your equations for that direction.)
 - C. "Find how high" means that the object is at the top of its trajectory. You know $v_f = \underline{\hspace{2cm}}$.
 - 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? Why or why not?
 - C. Why or why not?
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 you get hot due to _____ and you damage which body system?