Name _____ Hour _____

Practice Test for Projectile Motion
**Make sure to use the GUE

1. You are flying horizontally in a plane at 230 **km/hr** at 1,340 meters above the ground. You are trying to drop a box of supplies to a person below. How far in front of him should you drop the box? (Units!)

2. The cat is back! He had some serious injuries, but he is O.K. and ready to fly again! The cat is now at the circus with his cannon. He wants to impress his feline friends so he is going to launch himself across the arena with a velocity of 21 m/s at 25° N of E.. What was his maximum height?

3. A quarterback throws a pass towards a receiver who is 22 yards away. Calculate the **velocity** and the **angle** of the throw if it is in the air for 2.4 seconds total. (1 yard = 0.9144 m)

4. A snowboarder leaves a jump 15 m/s at 35° N of E. At what height should he place the ramp in order for him to land horizontally 14 meters away?

Δy

14 m
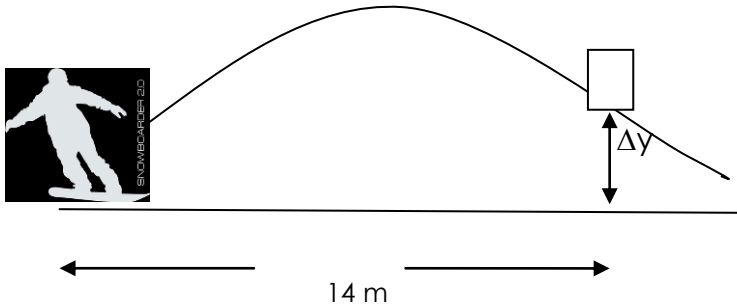
5. You shoot a potato gun at 16 m/s at 53° N of E off of the edge of a cliff that is 27 meters high. With what speed will it hit the ground in **miles per hour**?
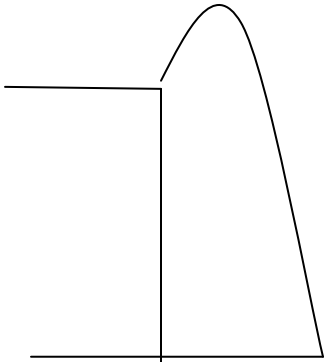
Other things to know:
1. What happens to the horizontal AND vertical velocity during the flight of a horizontal projectile?

2. What happens to the horizontal AND vertical velocity during the flight of an angled projectile?

3. What are the variables and units of the following? Horizontal distance, vertical distance, height, horizontal velocity, final vertical velocity.

4. What is the difference between Δy and Viy? Which one can be solved for using trig?

*After you have done all you can, get a copy of Mrs. B.'s key and correct anything that is wrong in a different color.

If you want another problem like #5, change the angle to 70° and resolve it. (ans: 61.5 mph.)