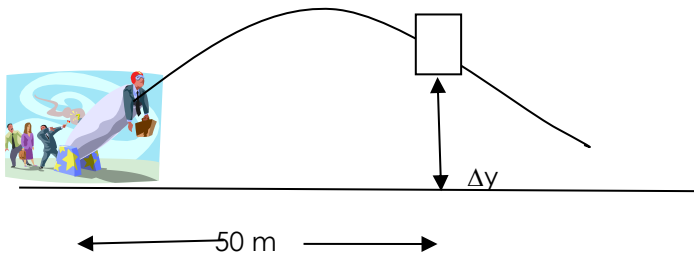


Projectiles Shot at an Angle Level 2

1. A horseshoe player tosses a horseshoe from ground level directly at the stake at an angle of 29° N of E. The horseshoe has a horizontal velocity of 10.8 m/s. (*that's v_x*) What is the maximum height reached by the horseshoe? (1.83 m)

2. Bubba is going to try to jump over 25 cars with his motorcycle. Calculate how fast (velocity) Bubba would need to travel if he is in the air for 3.22 seconds total and he travels 50.6 meters. **Need to solve v_x and v_{iy} first, then use $V^2 = v_x^2 + v_{iy}^2$** (22.2 m/s)

3. A daredevil is shot out of a cannon at 45° N of E with a speed of 25 m/s. A net is positioned at a horizontal distance of 50.0 meters. At what height above the cannon should the net be placed in order to catch the daredevil? *Be careful. This one is a little different.* **1. Find v_x and v_{iy} 2. Use $\Delta x = 50$ m to find time 3. Find Δy** (10.9 m)



Name _____ Hour _____

4. You throw a softball at an unknown angle N of E. If it is in the air for 4 seconds total and travels 50 meters horizontally, calculate the **velocity of the ball in miles per hour** and the **angle it was thrown at N of E**. Yes, you can assume it landed at the same height. (Hint: $v^2 = v_x^2 + v_y^2$) **(52 mph at 57.5° N of E)**



5. A place kicker must kick a football from 36 meters away. When kicked, the speed of the football is 20.0 m/s at 53° N of E. How high will it be off the ground at the crossbar? **(≈ 4 meters)**

