

A projectile is launched from a platform 100 feet off the ground, at an angle of  $35^\circ$  above horizontal. It is going 900 feet per second when launched. Answer the following, giving units with your answers and rounding to the nearest whole number. **Round any times used to the hundredth's place.**

1. How far does the projectile travel horizontally before hitting the ground? (Assume level ground.)
2. What is the maximum height of the projectile (above the ground)?
3. How fast is the projectile going when it hits the ground?
4. At what angle to the ground does the projectile hit?
5. How far does the projectile travel through the air?

**Math 254**      **ASSIGNMENT 7**      **Due on 4/27**

Solve the initial value problem

$$\vec{\mathbf{a}}(t) = \langle 10, 12e^{2t}, 15 \cos 3t \rangle, \quad \vec{\mathbf{r}}(0) = \langle 5, 1, -3 \rangle, \quad \vec{\mathbf{v}}(0) = \langle 2, -4, 1 \rangle$$

Show your work in the manner and layout that has been shown in class a couple times and is shown in the Assignment 5 Solutions posted on the class schedule under 4/26.