Arriving at a Certain Height Problem

Step 1: In the picture below give the values of all the variables for your problem including the gravitational field of the planet where this ball is going to be kicked from. Also draw in the dotted line where you are going to be finding the times to arrive at that height



Step 2: Make a velocity triangle out of the ball's velocity and fill in the two numbers that you know. Use this to find the x and y components of the velocity. Show your work neatly below.



Step 3: Develop a quadratic equation starting with the formula $\Delta y = v_i t + \frac{1}{2}at^2$. Show your work below.

Step 4: Use the quadratic formula to find the two moments when the soccer ball is the given height above the ground. Show your work below. Enter your answer into the program to make sure you did everything correctly.