## Finding Velocity of Soccer Kick

Step 1: In the picture below show the landing location of the ball and the time of flight. Also include the gravitational field of the planet where this ball is going to be kicked from



Step 2: Using the time of flight, find the vertical speed of the ball when it was kicked  $(v_y)$ . Show your work neatly below.

Step 3: Using the time of flight and the horizontal displacement of the ball, find the horizontal speed of the ball when it was kicked ( $v_x$ ). Show your work below.

Step 4: Use your answers from steps 2 and 3, find the velocity of the ball when kicked (total speed and angle). Show your work below. Enter your answer into the program to make sure you did everything correctly.

