Physics 11H/12 – Projectiles in 2-D Practice Problem

Name: _____ Block: _____

A golf player hits a ball, giving an initial speed of 30.0 m/s, at an angle of 40.0° above the horizontal. The golf course is on a hill, so when the ball hits the ground on its way down from its flight, it lands on the hill 5.00 m above the height from which it was launched.

1. Draw a sketch of the situation. Show the sign conventions (horizontal and vertical).

2. Complete the chart listing the information given in the question statement. In cases where a variable is unknown, fill in the space with a question mark «?" (at this stage, do not calculate the unknowns - this is where you just state the info given in the question statement)

Horizontal components (x)	Vertical components (y)
v_x =	v_{iy} =
d_x =	v_{fy} =
t =	Δd_y =
	a_y =
	t =

3. To what maximum height does the ball fly before falling down?

4. Determine the speed of the ball when it is at its maximum height.

5. How much time passes between the instant after the ball is hit by the golfer and the instant before it lands on the ground?

6. Determine the Range of the ball.

7. Determine the velocity of the ball the instant before it hits the ground (velocity and direction)