KEY

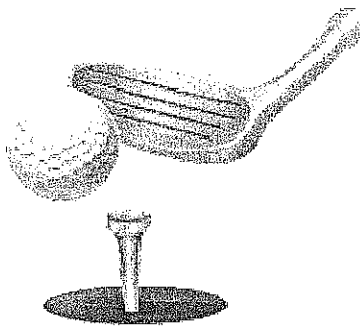$$y = \boxed{-16x^2 + 80x}$$

Applications Day 1 Exit Activity

The height h (in feet) above the ground of a golf ball depends on the time, t (in seconds) it has been in the air.

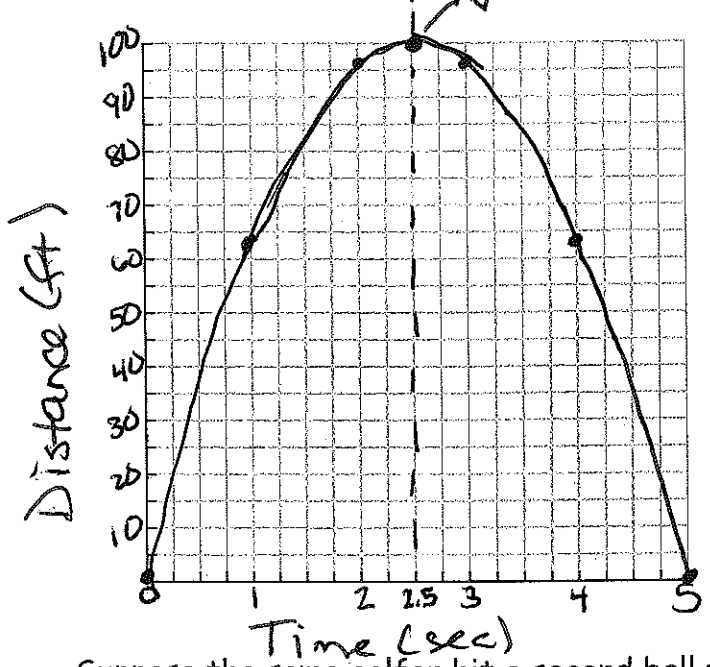Ed hits a shot off the tee that has a height modeled by the velocity function $f(t) = -16t^2 + 80t$.

Create a table of values to represent this function.

State the Axis of Symmetry equation __X = 2.5__

State the vertex point __(2.5, 100)__

The graph opens __down__ and the vertex will be the __maximum__ value in the function.

(sec) time x	(feet) dist y
0	0
1	64
2	96
3	96
4	64
5	0

Sketch the graph:

A - AOS, vertex

How long is the ball in the air? __5 sec__

vertex
What is the maximum height of the ball?
__100 feet__

How long after it is hit does the ball reach its maximum height? __2.5 sec__

What is the height of the ball at 3.5 seconds? Is there another time at which the ball is at this same height?
__84 feet; yes # at 1.5 sec (AOS)__

At approximately what time is the ball 65 feet in the air? __at ≈ 1 & 4 seconds__

Suppose the same golfer hit a second ball from a tee that was elevated 20 feet above the fairway. What effect would that have on the values in your table?

__Every y-value would be 20 feet more__