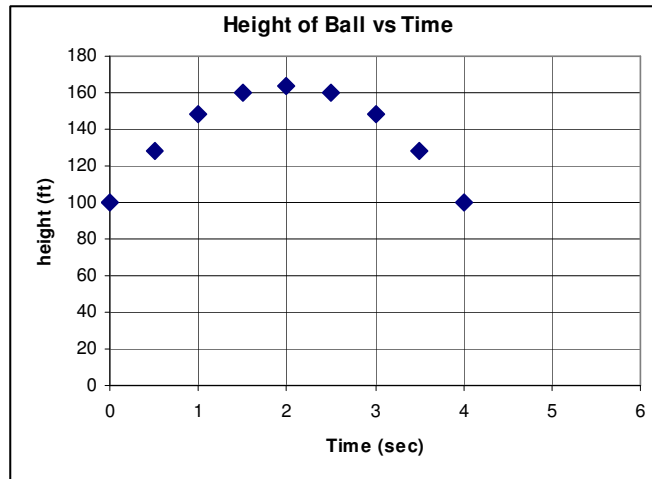


Some Function Concepts

Suppose the height, in feet, above ground of a ball in the first 4 seconds after being launched upward off the top of a building is given by the data in the following table. The relationship between the ball's height above the ground and the time elapsed since it was launched is communicated by the following table, graph, and rule.

time (sec)	ball's height (ft)
0	100
0.5	128
1	148
1.5	160
2	164
2.5	160
3	148
3.5	128
4	100



Suppose we let t = the number of seconds since the ball was launched, and $h(t)$ = the ball's height, in feet, t seconds after the ball was launched. In this case verify that $h(t) = 100 + 64t - 16t^2$.

Use the table, graph and rule to aid you in answering the following questions:

- When do you think the ball will hit the ground?
- What do you think will be the ball's maximum height above the ground?
- About how tall is the building from which the ball was launched?