Name:_____

A	B	C	D	E

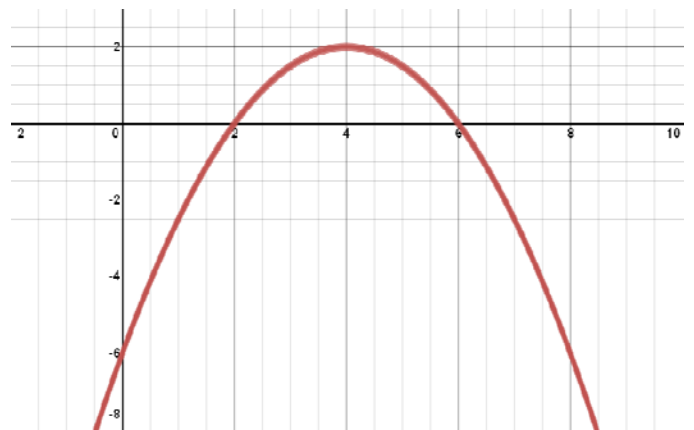| F	G	H	I	J

1. Consider an object moving with **positive** **constant acceleration**.

a) Which of the graphs above could represent the **velocity vs. time** for this object? Briefly explain.

b) Which of the graphs above could represent the **position vs. time** for this object? Briefly explain.

2. Find an equation for the quadratic function shown graphed.

3. A bicycle changes its velocity from 4 m/s to 10 m/s at a constant rate over a distance of 4 m. What is the bike's acceleration?

4. On Planet X, a ball launched straight up from ground level with some initial velocity travels straight up and down returning to its starting position, moving with constant downward acceleration while traveling. Neglecting air resistance, its height (in meters) as a function of time (in seconds) between when it is thrown and when it lands is given by:

$$y = -15t^2 + 60t .$$

a) Write down the initial velocity and the acceleration of the ball. Briefly explain your reasoning.

b) Determine the total travel time (from launch to land) of the ball.

5. A rectangle is drawn so that the width is 4.75 feet shorter than the length. The area of the rectangle is 305 square feet. Find the length of the rectangle.