**Practice Exercises:**

For each function in **exercises 1 to 4**, find its companion derivative function. Then answer these three questions about each: (Round as needed to 2 decimal places)

1. What is ? b) What is ?

c) What is the derivative at ?

**Exercise 1:** and

**Exercise 2**: and

**Exercise 3:** and

**Exercise 4:** and

**Exercise 5:** A ball is thrown upward, and its height is given by the equation

A graph of a line

Description automatically generated . A graph of the function is shown as well, with points graphed. y is in meters; x is in seconds.

Find .

What is the velocity (derivative) of the ball at the points that are labeled?

x = 0 x = 0.5

x = 1 x = 2

x = 2.776 x = 4

x = 5

Describe what is happening with the ball. What is the initial velocity? What is happening to the velocity before the ball reaches its maximum height? What is the velocity at the maximum height? On its way back down, what is happening to the velocity?