Math 4 Honors Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Lesson 6-3 Learning Check Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

In this learning check, you will be assessed on the following concepts:

* *I can use the derivative function to compute derivatives.*
* *I can use the formula for the derivative of a quadratic function.*
* *I can use the derivative function to solve problems.*

**\*\*\*NO CALCULATOR\*\*\***

1.  Find . 2.  Find .

3. *r* = -7/9*s* + 120,300.58 Find . 4.  Find 

5. The height in feet of a kicked football is approximated by . (Time is in seconds.)

1. Find the instaneous velocity at time *t* = 1.
2. At what time does the football reach its maximum height?
3. What is the maximum height reached by the football?

6. *Bonus:* A cubic function has the following formula for its first derivative: .

Determine the *x-*coordinate of its local maximum. Show work and/or explain your reasoning.