

Math 131 - Quiz 6

March 1, 2023

Name _____

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (4 points) A potato is fired upward from a potato gun in such a way that its height in feet after t seconds is given by $s(t) = -16t^2 + 80t + 96$.

(a) Determine the maximum height of the potato.

(b) Determine when the potato hits the ground.

2. (6 points) Suppose that y is implicitly defined as a function of x by the equation

$$x^2 + y^3 = \frac{5}{2}xy.$$

(a) Use implicit differentiation to find dy/dx .

(b) Find an equation for the tangent line at $(2, 1)$.