

APPM 1350

Name: \_\_\_\_\_

Fall 2021

Quiz 3

09/21/2021

Time Limit: 10 Minutes

Recitation Section: \_\_\_\_\_

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1. A ball is thrown straight up into the air at a time  $t = 0$ . The height of the ball relative to the ground at any point in time is given by the function

$$p(t) = -t^2 + 6t + 7.$$

- (a) (6 points) For  $t > 0$ , find the instantaneous velocity of the object using the limit definition of the derivative.
- (b) (2 points) At what time does the ball first hit the ground?
- (c) (2 points) What is the instantaneous velocity of the ball when it hits the ground in part (b)?