

Quiz #11, 11/22  
Math 156 (Calculus I), Fall 2023

Problem 1 is worth 4 points, and Problem 2 is worth 6 points, for a total of 10 points. Remember to *show your work* on all problems!

1. The velocity (in meters per second) at time  $t$  (in seconds) of a car moving along a 1-dimensional road is given by the function  $v(t)$ . Write down an expression, in terms of  $v(t)$ , for the distance (in meters) the car travels between time  $t = 2$  seconds and time  $t = 5$  seconds.
2. Compute the following indefinite integrals by using the  $u$ -substitution technique:
  - (a)  $\int x \cdot \cos(x^2) \, dx$
  - (b)  $\int x^2 \cdot e^{x^3+2} \, dx$
  - (c)  $\int \sqrt{5x+3} \, dx$