

Quiz 9

Name:

2017/04/06

This quiz has 2 questions worth 14 points on 2 pages. Try to do as many questions as possible. You can use your calculator.

1. (8 points) Suppose $f(x)$ and $g(x)$ are two continuous and differentiable functions such that $f'(x) = g(x)$ and we have following conditions:

$$\begin{aligned}\int_0^5 f(x)dx &= -2 \\ \int_0^5 g(x)dx &= 15 \\ \int_5^{10} g(x)dx &= 2 \\ f(0) &= 7\end{aligned}$$

Determine each of the following expressions. If insufficient information is given to answer the equation indicate "Insufficient Info."

- (a) (2 points) $\int_0^5 f(0)g(x)dx =$
(b) (2 points) $f(10) - f(0) =$
(c) (2 points) $\int_0^5 |f(x)| dx =$
(d) (2 points) $\int_0^5 \frac{1}{g(x)} dx =$

2. (6 points) Let h be a continuous differentiable function of x . Suppose h is always **increasing**. The following is a table of values of $h(x)$

x	0.8	0.9	1	1.1	1.2	1.3	1.4	1.5
$h(x)$	3	25	26	27	49	52	62	63

- (a) (2 points) Would a left-hand or a right-hand sum give a lower estimate of $\int_{0.8}^1 h(x)dx$? Why?
- (b) (4 points) Using the table above, give upper and lower estimate of $\int_1^{1.5} h(x)dx$