

Name _____

- You have 15 minutes
- No calculators
- Show sufficient work

1. (4 points) Find the average value of the function $f(x) = \tan x \sec^2 x$ on the interval $[\pi/6, \pi/4]$. Simplify your answer.

Let \mathbf{R} be the region bounded by the x -axis and the graph of $y = 5x + 3e^{2x}$ on the interval $[1, 3]$. Set up, but do not evaluate, definite integrals which represent the given quantities. Use proper notation. Each problem is worth 3 points.

(a) The volume of the solid obtained when \mathbf{R} is revolved around the y -axis.

(b) The volume of the solid obtained when \mathbf{R} is revolved around the vertical line $x = 7$.