

Math 108H (Quiz 8)

Name _____.

Show all work (no calculator)

1. (5+5=10 points)

(a) Find an integral in simplified form that gives the length of the curve $y = f(x) = \sin(x^2)$, $0 \leq x \leq \pi$.

(b) Find an integral in simplified form that gives the surface area of the surface of revolution obtained by rotating the curve $y = f(x) = e^{3x}$, $1 \leq x \leq 4$, about the x -axis.

2. (10 points) A rope hangs from the top of a building to the ground and the building is 60 feet tall. If the rope weighs 10 pounds, how much work does Larry do if he pulls the rope to the top of the building.