

WRITE YOUR NAME:

MAC 2312 WRITTEN HOMEWORK #4

Due Tuesday February 6th, in Canvas

Question 1. Let A be the region bounded by the curves $y = x^2$ and $y = 3x$. Find the volume obtained when the region A is revolved around the line $y = 10$.

Question 2. Let A be the region bounded by the curves $x = y^2$ and $x = 18 - y^2$. Find the volume obtained when the region A is revolved around the line $y = 5$.

Question 3. Find the length of the curve

$$y = 3 \ln x - \frac{x^2}{24}$$

on the interval $[1, 6]$.

Question 4. The portion of the curve $y = \sqrt{1 - x^2}$ between $x = -1/2$ and $x = 1/2$ is revolved around the x -axis. Find the area of the surface generated.