Math 102

Name:

Quiz#3B

Serial No.:

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1. Find the numbers b such that the average value of $f(x) = 2 + 6x - 3x^2$ on the interval $[0, b]$ is equal to 3.

2. The region bounded by $y = x^3$, $y = 0$ and $x = 1$ is rotating about $y = 1$. Find the *volume* of the resulted solid.

3. Find $\int \frac{\sin\theta}{\cos^3\theta}\, d\theta$

4. Find the value of $\int_4^9 \frac{\ln y}{\sqrt{y}}\, dy$

5. Find the value of $\int_0^1 \cos(\pi x)\ \cos(4\pi x)\ dx$

6. Evaluate $I = \int\ e^{-\theta} \cos 2\theta\, d\theta$.