

KFUPM SEM I (Term 081) Name: _____ Serial #: _____
MATH 102-3-4 Quiz # 3 ID: #: _____ Sec. #: _____

1. (5-points) The region bounded by $y = e^{-3x^2}$, $y = 0$, $x = 0$, and $x = 1$ is revolved about the y -axis. Find the volume of the solid generated.

2. (10-points) Find the exact value of the definite integral $\int_0^2 x \tan^{-1}\left(\frac{x}{3}\right) dx$.

3. (5-points) Find the set of all numbers b such that the average of the function $f(x) = 18 + 8x - 3x^2$ in the interval $[0, b]$ is equal to 6.

4. (10-points) Evaluate $\int \frac{x^3}{(4-x^2)^{3/2}} dx$.

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1. (5-points) The region bounded by $y = e^{-5x^2}$, $y = 0$, $x = 0$, and $x = 1$ is revolved about the y -axis. Find the volume of the solid generated.

2. (10-points) Find the value of the definite integral $\int_0^3 x \tan^{-1} \left(\frac{x}{2} \right) dx$.

3. (5-points) Find the set of all numbers b such that the average of the function $f(x) = 23 + 6x - 3x^2$ in the interval $[0, b]$ is equal to 5.

4. (10-points) Evaluate $\int \frac{x^3}{(9 - x^2)^{3/2}} dx$.