

KFUPM SEM II (Term 052) Name: _____ Serial #: _____

MATH 102-4 Quiz # 1 ID: #: _____

1. (3-points) Evaluate $\int \frac{\sin(1 + 5e^{-x})}{e^x} dx$.

2. (3-points) Evaluate $\int \frac{3x^3 + 3x + 5}{x^2 + 1} dx$.

3. (5-points) Solve the initial-value problem

$$\frac{dy}{dx} = \frac{5x^2}{\sqrt{1-2x^3}}, \quad y\left(\sqrt[3]{-\frac{3}{2}}\right) = \frac{2}{3}.$$

4. (4-points) Find the area under the curve $f(x) = 12 - x^3$ from $x = 0$ to $x = 2$, with x_k^* as the right endpoint of each subinterval. $\left[\text{Hint: } \sum_{k=1}^n k^3 = \left[\frac{n(n+1)}{2} \right]^2 \right]$.

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MATH 102-8 Quiz # 1 ID: #: _____

1. (3-points) Evaluate $\int \frac{\cos(1 - 4e^{-x})}{e^x} dx$.

2. (3-points) Evaluate $\int \frac{3 + 5x + 5x^3}{1 + x^2} dx$.

3. (5-points) Solve the initial-value problem

$$\frac{dy}{dx} = \frac{3x^2}{\sqrt{1-5x^3}}, \quad y\left(\sqrt[3]{-\frac{3}{5}}\right) = \frac{5}{3}.$$

4. (4-points) Find the area under the curve $f(x) = 14 - x^3$ from $x = 0$ to $x = 2$, with x_k^* as the right endpoint of each subinterval. $\left[\text{Hint: } \sum_{k=1}^n k^3 = \left[\frac{n(n+1)}{2} \right]^2 \right]$.