

MTH 1126 - Test #1

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Pat Rossi

Name _____

Instructions. Show CLEARLY how you arrive at your answers.

1. Compute: $\int_0^1 (x^3 + 1)^4 x^2 dx =$

2. Use the “ $f - g$ ” method to compute the area bounded by the graphs of $f(x) = x^3$ and $g(x) = x$

3. Suppose that $\int_2^8 (f(x) - g(x)) dx = 9$; $\int_2^8 g(x) dx = 5$; and that $\int_4^2 f(x) dx = 4$. Compute $\int_4^8 f(x) dx$.

4. Compute: $\int \tan(x^2) \sec^2(x^2) x \, dx =$

5. Find the area bounded by the graphs of $f(x) = 1 - x^2$ and $g(x) = -x - 1$. (Partition the proper interval, build the Riemann Sum, derive the appropriate integral.)

6. A region in the x - y plane is bounded by the graphs $y = x^2$ and $y = \sqrt{x}$. Use the Disk Method to compute the volume of the solid of revolution generated by revolving the region about the x -axis. (Partition the proper interval, build the Riemann Sum, derive the appropriate integral.)

7. The graph of $f(x)$ is shown below. Compute $\int_{-3}^3 f(x) dx$.

