

MTH 1126 - Test #1A
SPRING 2006

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Name _____

Instructions. Show CLEARLY how you arrive at your answers.

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

2. Use the “ $f - g$ ” method to compute the area bounded by the graphs of $f(x) = x^2 - 5$ and $g(x) = 2x - 2$

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

4. Compute: $\int \sin(x^3) \cos(x^3) x^2 dx =$

5. Find the area bounded by the graphs of $f(x) = x^2$ and $g(x) = \sqrt{x}$. (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 $y = x^3$ and $y = x^2$. Use the Disk Method to compute the volume of the solid of revolution generated by revolving the region about the line $x = -1$. (Partition the proper interval, build the Riemann Sum, derive the appropriate integral.)

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

