

MAT 122 – 001
Spring 2008
Review for Test Two
Show all work.

1. Determine $\int \frac{x^3}{(x^4 + 1)^4} dx$.

2. Determine $\int \sin^2 x \cos x dx$.

3. Determine $\int_1^2 (x+1)(x^2 + 2x)^3 dx$.

4. Determine $\int_{-1}^2 \sqrt{5x+6} dx$.

5. Set up a definite integral to find the area between the curves $y = 3x^3 - x^2 - 10x$ and $y = -x^2 + 2x$. You need not do the integration.

6. Set up a definite integral to find the volume generated when the region bounded by $y = 4 - \frac{x^2}{4}$ and $y = 2$ is generated about the x -axis. You need not do the integration.

7. Set up a definite integral to find the volume generated when the region bounded by $y = x^2 + 1$, $y = 0$, $x = 0$, and $x = 1$ is revolved about the y -axis. You need not do the integration.