

October 22, 2004

Show all work for credit.

1.
$$\int \frac{x^2 + 2x - 1}{x^3 - x} dx$$

2.
$$\int_0^2 \frac{x - 3}{2x - 3} dx$$

3. Find the area of the surface obtained by rotating the curve about the x -axis; $9x = y^2 + 18$, $2 \leq x \leq 6$ 4. Find the length of the curve; $x = 5 \sin t$, $y = 5 \cos t$, $0 \leq t \leq \pi$.5. Evaluate the integral or show that it diverges; $\int_0^4 \frac{\ln x}{\sqrt{x}} dx$