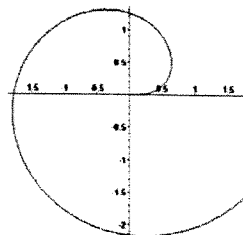


vAPK
Exam 2
2004-12-15

1. Determine the integral $\int x^2 \ln(x) dx$.

2. Determine the area of the domain bounded by the polar curve

$$r^2 = \theta, 0 \leq \theta \leq \frac{\pi}{2}, \text{ and the positive } y\text{-axis.}$$



3. The curve $y = x^3$, $0 \leq x \leq 1$, rotates about the x-axis. Determine the area of the surface of rotation.

4. Determine $\sum_{k=1}^{\infty} \frac{1}{k(k+1)}$.