Supplementary Homework for Math 43
Due Monday, Wednesday May 15, 2002

S1: Evaluate the integral

$$\int_0^\infty \frac{1}{x^n + 1}\, dx$$

where $n = 2, 3, 4, \ldots$. I suggest you use the contour consisting of the straight line segment from 0 to R, followed by the circular arc from R to $Re^{2\pi i/n}$ followed by the line segment from $Re^{2\pi i/n}$ back to 0.