

## Homework 4

Section 7.7  
Due: 2-25-15

Determine whether the following improper integrals converge or diverge. You **must justify your conclusion** to receive credit!

1.  $\int_1^{\infty} \frac{1}{x(1+e^x)} dx$

2.  $\int_1^{\infty} \frac{\sqrt{x+1}}{x^2} dx$

3.  $\int_0^{\pi} \frac{\sin x}{\sqrt{\pi-x}} dx$

4.  $\int_0^{\infty} \frac{1}{\sqrt{x^6+1}} dx$

5.  $\int_3^{\infty} \frac{1}{2+\cos(x)+\ln(x)} dx$

6.  $\int_0^5 \frac{1}{\sqrt{x^5+x^3}} dx$

7.  $\int_0^5 \frac{x}{\sqrt{x^5+x^3}} dx$