Name _____

Homework 6
Sections 7.7 & 7.8

Determine whether each of the following integrals converges or diverges by performing the integration, and if it converges, find its value.

1. (5) $\displaystyle\int_2^\infty \frac{1}{4+z^2}\,dz$

2. (5) $\displaystyle\int_{-1}^1 \frac{x^4+1}{x}\,dx$

Determine whether each of the following integrals converges or diverges by comparing it to another integral. Explain your reasoning.

3. (4) $\displaystyle\int_1^\infty \frac{2+\cos\phi}{\phi^2}\,d\phi$

4. (3) $\displaystyle\int_0^\infty \frac{1}{e^z+2}\,dz$

5. (3) $\displaystyle\int_2^\infty \frac{dt}{\sqrt{4+t^2}}$ [*This one may be a bit tricky.*]