Math 250 Worksheet 12 - February 16 Name_____
K.A. Pericak-Spector You must show all work!

Determine if the following series are convergent or divergent. If convergent, find it sum.

1. $\sum_{0}^{\infty} \left(\frac{3^n + 2^n}{5^n} \right)$

2. $\sum_{3}^{\infty} \frac{1}{n^2 + 6n + 5}$

3. $\sum_{1}^{\infty} \arccos \frac{1}{n}$

Evaluate the following improper integrals. If the integral does not exist, state why.

4. $\int_1^\infty \frac{\ln x}{x} dx$

5. $\int_1^\infty xe^{-x} dx$