Math 2260 HW #11
Due 10:10 AM Friday, March 30

Reading: Hass §9.3–9.6

Problems: Do the assignment "HW11" on WebWork. In addition, write up solutions to the following problems and hand in your solutions in class on Friday.

1. Does the series
$$\sum_{k=0}^{\infty} \frac{\cos(k\pi)}{5^k}$$
   converge or diverge? If it converges, find its sum, and if it diverges, explain why.

2. Find examples of convergent geometric series $\sum_{k=1}^{\infty} a_k$ and $\sum_{k=1}^{\infty} b_k$ so that

   - $\sum_{k=1}^{\infty} a_k = A$ and $\sum_{k=1}^{\infty} b_k = B$ for some numbers A and B,
   - $\sum_{k=1}^{\infty} a_k b_k$ converges, but
   - $\sum_{k=1}^{\infty} a_k b_k \neq AB$.

3. Does the series
$$\sum_{k=1}^{\infty} \frac{e^k}{1 + e^{2k}}$$
   converge or diverge? Explain your answer.