Homework 13
Math 162Q - Fall 2002
Due Wednesday December 11, 2002

§11.6 #4, 6, 8, 12, 24, 29.
§11.7 #5, 8, 10, 12, 14, 24, 28.
§11.8 #8, 12, 14, 16, 22.

Quest Problem:
It is a fact that
\[
\sum_{n=1}^{\infty} \frac{1}{n^4} = \frac{\pi^4}{90}.
\]
You can think of this as the sum of \(\frac{1}{n^4}\) over all positive integers \(n\).

a) What is the sum of \(\frac{1}{n^4}\) over all positive even integers \(n\)?

b) What is the sum of \(\frac{1}{n^4}\) over all positive odd integers \(n\)?