Math 143 Quiz 2

Names: _____

1. Use an integral to determine the values of p for which $\sum_{n=2}^{\infty} \frac{1}{n(\ln n)^p}$ converges.

2. Suppose that $a_n > 0$ and suppose the sequence $\sum_{n=0}^{\infty} a_n$ converges. Does $\sum_{n=0}^{\infty} a_n^2$ converge? Why?

3. Find the values of x for which $\displaystyle\sum_{n=2}^{\infty} \frac{x^{n+1}+(1+x)^n}{2^n}$ converges. Then find the exact value when it does.

4. Find the shaded area in the figure below (there are an infinite number of triangles).