## Math 143 Quiz 2

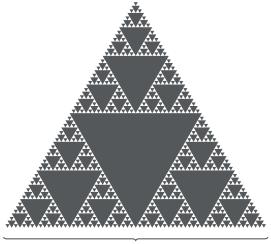
Names: \_\_\_\_\_

**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  $\sum_{n=2}^{\infty} \frac{x^{n+1} + (1+x)^n}{2^n}$  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).



length 1