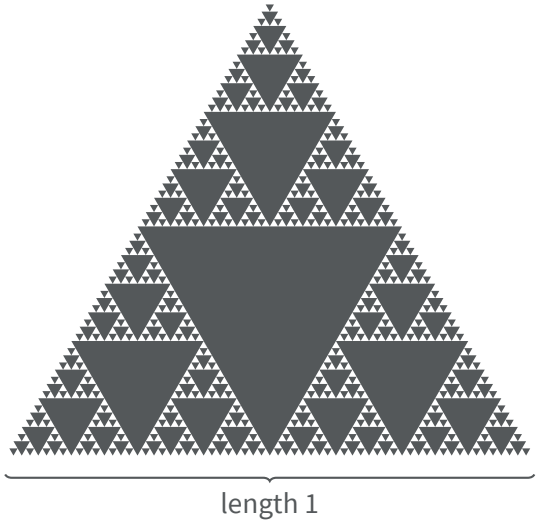
Math 143 Quiz 1

Names: _____

1. Find the degree n Taylor polynomial for $\frac{1}{x}$ at $x = 2$. (Write the answer using Sigma notation.)

2. Find the degree 3 Taylor poly at $x = 0$ for the function $f(x)$ that satisfies $f(0) = 1$ and $f'(x) = f(x)^2 + x$.

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



4 (Bonus!). (Only attempt if all other exercises are correct!) Find the Taylor series at $x = 0$ for $(1+x)^r$ where r is arbitrary. (Write the answer using Sigma notation.)