Math 2326 - Introduction to Abstract Mathematics
Assignment 36 - Due Friday, April 25

**Problem 119:** Show that if $|r| < 1$, then $\sum_{n=1}^{\infty} r^n$ converges. Also find its limit.

**Problem 120:** Show that if $\lim x_n = a$, then $\lim |x_n| = |a|$. Give a counter-example showing the converse is not true if $a \neq 0$.

**Problem 121:** Let $x_n \geq 0$ and $\lim x_n = 0$. For each $n$, define $y_n = \min \{x_1, x_2, \ldots, x_n\}$. Show that $\lim y_n = 0$. 