| MA 126-02
§8.1-8.2 | Quiz #4 | *score* | Name: _____
7 July 2000 |

1. Find $\lim\limits_{n \to \infty} \dfrac{(\ln n)^2}{n}$. *(5 points)*

2. Let $\{a_n\}$ be a sequence defined by $a_1 = 1$ and $a_n = a_{n-1} \cdot \dfrac{2n-1}{2n}$. Determine whether or not the sequence $\{a_n\}$ converges and explain. *(5 points)*

3. Determine if the series converges. If it does, find its sum. If not, explain why. *(5 points each)*

(a) $\displaystyle\sum_{n=1}^{\infty} 2\frac{3^n}{4^{n+1}}$

(b) $\displaystyle\sum_{n=1}^{\infty} \frac{n}{\sqrt{n^2+n+1}}$