1. Which of the following series converges?

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

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

(C) $\displaystyle\sum_{n=1}^{\infty} \left(\frac{\pi}{e}\right)^n$

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

(E) $\displaystyle\sum_{n=1}^{\infty} \frac{n-1}{n4^n}$

2. Which of the following series can be used with the Limit Comparison Test to determine whether the series $\displaystyle\sum_{n=1}^{\infty} \frac{5^n}{7^n - n^2}$ diverges or converges?

(A) $\displaystyle\sum_{n=1}^{\infty} \frac{1}{n}$

(B) $\displaystyle\sum_{n=1}^{\infty} \frac{1}{5^n}$

(C) $\displaystyle\sum_{n=1}^{\infty} \frac{1}{7^n}$

(D) $\displaystyle\sum_{n=1}^{\infty} \left(\frac{5}{7}\right)^n$

3. Use the Comparison Test to determine the convergence or divergence of the series $\displaystyle\sum_{n=1}^{\infty} \frac{n-2}{n5^n}$. You must identify the series you are using for comparison.

4. Use the Comparison Test to determine the convergence or divergence of the series $\displaystyle\sum_{n=1}^{\infty} \frac{n}{n^2 + 1}$. You must identify the series you are using for comparison.

5. Determine whether the series $\displaystyle\sum_{n=1}^{\infty} \frac{n5^n}{4n^4 - 3}$ converges or diverges. Identify the test for convergence used.