HW Quiz A (Nth Term/Geometric/Integral/Comparison Tests)   Name_____

Determine if the series converges or diverges. Show the necessary information to justify your answer.

1. $\displaystyle\sum_{n=1}^{\infty}\frac{3n^2+2n+1}{2n^2+3}$

2. $\displaystyle\sum_{n=0}^{\infty}5\left(\frac{3}{4}\right)^n$

3. $\displaystyle\sum_{n=0}^{\infty}3\left(\frac{5}{2}\right)^n$

Find the interval of convergence of the geometric series, the radius of convergence, and within this interval, the sum of the series as a function of x.

4. $\displaystyle\sum_{n=0}^{\infty}\frac{(x+1)^n}{9^n}$

Determine if the series converges or diverges. Show the necessary information to justify your answer.

5. $\displaystyle\sum_{n=1}^{\infty}\frac{n}{n^3+1}$

6. $\displaystyle\sum_{n=1}^{\infty}\frac{2}{3^n-5}$

7. $\displaystyle\sum_{n=1}^{\infty}\frac{2}{3n+5}$

8. $\displaystyle\sum_{n=1}^{\infty}\frac{3}{n^{2/3}}$