

HW Quiz B (Nth Term/Geometric/Integral/Comparison Tests) Name \_\_\_\_\_

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

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

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

3. 
$$\sum_{n=0}^{\infty} 3\left(\frac{1}{2}\right)^n$$

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

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

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

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

6. 
$$\sum_{n=1}^{\infty} \frac{1}{2^n + 1}$$

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

8. 
$$\sum_{n=1}^{\infty} \frac{2}{n^{4/3}}$$