

(11.6) Ratio and Root Tests

Full Name: \_\_\_\_\_

1. Use the **Ratio Test** or the **Root Test** to determine whether each series converges or diverges.

(a)  $\sum_{n=1}^{\infty} \frac{n^2 + 1}{n2^n}$

(b)  $\sum_{n=0}^{\infty} \frac{3^n}{n!}$

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

(d)  $\sum_{n=0}^{\infty} \left( \frac{2n^2}{3n^2 + n + 10} \right)^n$

(e)  $\sum_{n=0}^{\infty} \left( \frac{n^3 + 1}{2n^2 + 5} \right)^n$

(f)  $\sum_{n=0}^{\infty} \left( \frac{4n^2}{2n^3 + 17} \right)^n$