Name: _____ Date: _____

Chapter 11 Review Test

For problems 1-7 find is the series converges or diverges

1) $\sum_{n=1}^{\infty} \frac{n-1}{n^3+1}$

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

3) $\sum_{n=2}^{\infty} \frac{1}{n\sqrt{\ln n}}$

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

5) $\sum_{n=1}^{\infty} \frac{\sqrt{n^4+1}}{n^3+n}$

6) $\sum_{n=2}^{\infty} \frac{(-1)^{n-1}}{\sqrt{n}-1}$

7) $\sum_{n=1}^{\infty} \frac{\sin 2n}{1+2^n}$

8) $\sum_{n=1}^{\infty} \frac{n^2-1}{n^3+1}$

9) Find the radius and interval of convergence for the following problem:

$$\sum_{n=1}^{\infty} \frac{(-1)^n}{(2n-1)2^n} (x-1)^n$$

10) Evaluate the indefinite integral as an infinite series:

$$\int x^2 \sin(x^2)\, dx$$