

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

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Chapter 11 Test

For problems 1-10 find if the series converges or diverges. All answers must include the test used and any work to show that the test works.

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

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

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

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

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

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

$$7) \quad \sum_{n=1}^{\infty} (-1)^n \cos \frac{1}{n^2}$$

$$8) \quad \sum_{n=1}^{\infty} \frac{\sin 2n}{1+2^n}$$



$$9) \quad \sum_{n=1}^{\infty} \frac{n^2-1}{n^3+1}$$

$$10) \quad \sum_{n=1}^{\infty} \frac{3^{n+1}}{(n+1)!}$$