Take-Home Quiz 5

Math 133 Section 22

Due Monday, May 15

For each of the following series, determine whether or not the series is absolutely convergent, conditionally convergent, or divergent. Be sure to mention which tests you are using, and to describe how you applied the test.

Problem 1. (1 point).

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

Problem 2. (2 points).

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

Problem 3. (2 points).

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

Problem 4. (2 points).

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

Find the convergence set for each of the following power series. Be sure to show your work.

Problem 5. (2 points).

$$\sum_{n=0}^{\infty} \frac{2^n \cdot x^n}{n!}.$$

Problem 6. (2 points).

$$\sum_{n=0}^{\infty} \frac{x^{2n}}{4^n}.$$

Problem 7. (2 points).

$$\sum_{n=0}^{\infty} (x+3)^n.$$

Problem 8. (2 points).

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