

NAME: _____

PIN: _____

This quiz is

due at the beginning of recitation on Monday October 26.

Instructions: For each problem, you are given a series. For each problem, check the appropriate box to indicate whether the given series is absolutely convergent, conditionally convergent, or divergent. Also indicate your reasoning in the space provided below the given series. Specifically specify which test(s) you are using. Show all your work (e.g., if you need to check that something is continuous and it is obviously continuous, indicate that one needs to check continuity but it is obviously continuous). A correctly checked box without appropriate explanation will receive no points. There are 6 problems on this quiz.

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

absolutely convergent

conditionally convergent

divergent

-
2. $\sum_{n=1}^{\infty} \frac{n!}{(-5)^n}$
- absolutely convergent
- conditionally convergent
- divergent

Hint: $(-5)^n = [(-1)(5)]^n = (-1)^n 5^n$.

3. $\sum_{n=1}^{\infty} \frac{(-5)^n}{n!}$

absolutely convergent

conditionally convergent

divergent

$$4. \sum_{n=1}^{\infty} \frac{(7n)^n}{(5n+3)^n}$$

 absolutely convergent conditionally convergent divergent

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

absolutely convergent

conditionally convergent

divergent

-
6. $\sum_{n=1}^{\infty} \frac{2^{3n+1}}{n^n}$
- absolutely convergent
- conditionally convergent
- divergent