DATE: _____

Radius of Convergence M/C Practice

1. Which of the following statements are true about the series $\sum_{n=1}^{\infty} \frac{n^2+1}{n^5-n^2\sqrt{3}}$?

I. This series converges because $\lim_{n\to\infty} \frac{n^2+1}{n^5-n^2\sqrt{3}} = 0$.

II. This series converges by the Ratio Test.

(A) I only

(B) II only

(C) Both I and II

(D) Neither I nor II

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2. Which of the following series converge?

I. $\sum_{n=0}^{\infty} \frac{5n}{2n+1}$

II. $\sum_{n=1}^{\infty} \frac{e^n}{n}$

III. $\sum_{n=0}^{\infty} \frac{e^n+1}{e^n}$

(A) I only

(B) II only

(C) I and II only

(D) I and III only

(E) I, II, and III only

3. The radius of convergence for the series $\sum_{n=0}^{\infty} \frac{n^2(x-10)^n}{10^n}$ is

(A) 1

(B) $\frac{1}{10}$

(C) 10

(D) $\frac{n}{10}$

(E) ∞

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4. The radius of convergence for the series $\sum_{n=0}^{\infty} \frac{(x-3)^n}{n!}$ is

(A) 0

(B) 1

(C) $\frac{1}{n!}$

(D) $n!$

(E) ∞

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5. The radius of convergence for the series $\sum_{n=0}^{\infty} \frac{(x-5)^n}{\sqrt{n}}$ is

(A) 0

(B) 1

(C) $\frac{1}{n!}$

(D) $n!$

(E) ∞