

This print-out should have 9 questions. Multiple-choice questions may continue on the next column or page – find all choices before answering.

001 10.0 points

Find the interval of convergence of the series

$$\sum_{n=1}^{\infty} \frac{x^n}{\sqrt{n+3}}.$$

1. interval of cgce = $[-1, 1]$
2. interval of cgce = $(-3, 3]$
3. interval of cgce = $(-1, 1)$
4. interval of cgce = $[-1, 1)$
5. converges only at $x = 0$
6. interval of cgce = $[-3, 3]$

002 10.0 points

Find the radius of convergence, R , and interval of convergence of the power series

$$\sum_{n=1}^{\infty} \sqrt{n} (x-4)^n.$$

1. $R = 1, I = [3, 5]$
2. $R = 4, I = (0, 4]$
3. $R = 1, I = (3, 5)$
4. diverges everywhere
5. $R = 4, I = (-4, 4)$

003 10.0 points

Determine the interval of convergence of the series

$$\sum_{n=1}^{\infty} n^3 (x-4)^n.$$

1. interval convergence = $[3, 5)$
2. interval convergence = $(-5, -3]$
3. interval convergence = $(3, 5)$
4. interval convergence = $(-\infty, \infty)$
5. converges only at $x = 4$
6. interval convergence = $(-5, -3)$

004 10.0 points

Determine the radius of convergence, R , of the series

$$\sum_{n=1}^{\infty} \frac{x^n}{(n+6)!}.$$

1. $R = 6$
2. $R = 0$
3. $R = \infty$
4. $R = 1$
5. $R = \frac{1}{6}$

005 10.0 points

Find the interval of convergence of the series

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

1. interval of cgce = $(-3, 1]$
2. interval of cgce = $[-1, 3]$
3. converges only at $x = 0$
4. interval of cgce = $(-1, 1]$

5. interval of cgce = $[-1, 1)$
6. interval of cgce = $[-1, 1]$
7. interval of cgce = $(-1, 1)$
8. interval of cgce = $(-\infty, \infty)$

006 10.0 points

Determine the interval of convergence of the infinite series

$$\sum_{n=1}^{\infty} \frac{x^n}{4^n n^4}.$$

1. interval convergence = $[-1, 1)$
2. interval convergence = $[-1/4, 1/4)$
3. interval convergence = $[-1, 1]$
4. interval convergence = $[-4, 4)$
5. interval convergence = $[-4, 4]$
6. interval convergence = $[-1/4, 1/4]$
7. converges only at $x = 0$
8. interval convergence = $(-\infty, \infty)$

007 10.0 points

Determine the interval of convergence of the series

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

1. interval convergence = $[3, 7]$
2. interval convergence = $(-2, 5)$
3. interval convergence = $[-2, 5)$
4. interval convergence = $[-2, 5]$
5. interval convergence = $[3, 7)$

6. interval convergence = $(3, 7)$

008 10.0 points

Find the radius of convergence and interval of convergence of the series $\sum_{n=1}^{\infty} \frac{(-4)^n x^n}{\sqrt[3]{n+2}}$

1. diverges everywhere
2. $R = 4, I = (-4, 4]$
3. $R = \frac{1}{4}, I = \left[-\frac{1}{4}, \frac{1}{4}\right)$
4. $R = \frac{1}{4}, I = \left(-\frac{1}{4}, \frac{1}{4}\right)$
5. $R = \frac{1}{4}, I = \left(-\frac{1}{4}, \frac{1}{4}\right]$

009 10.0 points

Determine the radius of convergence, R , of the power series

$$\sum_{n=1}^{\infty} \frac{(-4)^n}{\sqrt[3]{n}} (x + 2)^n.$$

1. $R = \infty$
2. $R = 4$
3. $R = 0$
4. $R = \frac{1}{4}$
5. $R = \frac{1}{2}$
6. $R = 2$