

1. (1 pt) 9.7, Example 3

Find the formula the sum of the series

$$S(x) = 1 + (x-4)^2 + \frac{(x-4)^4}{2!} + \frac{(x-4)^6}{3!} + \frac{(x-4)^8}{4!} + \cdots + \frac{(x-4)^{2n}}{n!} + \cdots$$

Answer(s) submitted:

(incorrect)

2. (1 pt) 9.7, Example 4

Find the formula of the DERIVATIVE of the sum of the series

$$S(x) = 1 + (x-3)^3 + \frac{(x-3)^6}{2!} + \frac{(x-3)^9}{3!} + \frac{(x-3)^{12}}{4!} + \cdots + \frac{(x-3)^{3n}}{n!} + \cdots$$

Answer(s) submitted:

(incorrect)

3. (1 pt) 9.7, Example 5

Multiply and divide the power series for $\ln(1+2x)$ by that for e^x .

$$\ln(1+2x) = 2x - \frac{2^2 x^2}{2} + \frac{2^3 x^3}{3} - \frac{2^4 x^4}{4} + \cdots$$

$$e^x = 1 + x + \frac{x^2}{2} + \frac{x^3}{6} + \frac{x^4}{24} + \cdots$$

$$\ln(1+2x) \cdot e^x = \text{_____} + \text{_____} x + \text{_____} x^2 + \text{_____} x^3 + \cdots$$

$$\ln(1+2x)/e^x = \text{_____} + \text{_____} x + \text{_____} x^2 + \text{_____} x^3 + \cdots$$

Answer(s) submitted:

(incorrect)

4. (1 pt) 9.7, Example 6 Find the power series for $e^{\tan^{-1} 2x}$.

$$e^u = 1 + u + \frac{u^2}{2} + \frac{u^3}{6} + \frac{u^4}{24} + \cdots$$

$$\tan^{-1} 2x = 2x - \frac{2^3 x^3}{3} + \frac{2^5 x^5}{5} - \frac{2^7 x^7}{7} + \cdots$$

$$e^{\tan^{-1} 2x} = \text{_____} + \text{_____} x + \text{_____} x^2 + \text{_____} x^3 + \cdots$$

Answer(s) submitted:

(incorrect)

5. (1 pt) 9.8, Example 1

Find the Maclaurin series for $\sin 2x$.

$$\sin 2x = \text{_____} x + \text{_____} x^3 + \text{_____} x^5 + \text{_____} x^7 + \cdots$$

What is the set of convergence for the above series?

Answer(s) submitted:

(incorrect)

6. (1 pt) 9.8, Example 2

Find the Maclaurin series for $\cos 4x$.

$$\cos 4x = \text{_____} + \text{_____} x^2 + \text{_____} x^4 + \text{_____} x^6 + \cdots$$

What is the set of convergence for the above series?

Answer(s) submitted: