Section 11.8: Power Series and Functions

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Question 1

1/1 pt 0-1 99

Find the interval of convergence for the given power series.

$$\sum_{n=1}^{\infty} \frac{(x-2)^n}{n(-10)^n}$$

The series is convergent

from x = -8 , left end included (enter Y or N): N

to x = 12 , right end included (enter Y or N): Y

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Question 2

1/1 pt 0-1 99

Find all the values of x such that the given series would converge.

$$\sum_{n=1}^{\infty} \frac{(11x)^n}{n^9}$$

The series is convergent

from x = $-\frac{1}{11}$, left end included (enter Y or N): Y

to x = $\frac{1}{11}$, right end included (enter Y or N): Y

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Question 3

1/1 pt 0-1 99

Find all the values of x such that the given series would converge.

$$\sum_{n=1}^{\infty} \frac{(x-10)^n}{10^n}$$

The series is convergent

from x = 0 , left end included (enter Y or N): N

to x = 20 , right end included (enter Y or N): N

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Question 4

1/1 pt 0-1 99

Find all the values of x such that the given series would converge.

$$\sum_{n=1}^{\infty} \frac{(-1)^n x^n}{10^n(n^2+5)}$$

The series is convergent

from $x =$ -10 , left end included (enter Y or N): Y

to $x =$ 10 , right end included (enter Y or N): Y

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✓ Question 5

1/1 pt 1 99

Find all the values of x such that the given series would converge.

$$\sum_{n=1}^{\infty} \frac{(-1)^n 4^n x^n}{(\sqrt{n}+7)}$$

The series is convergent

from $x =$ $-\frac{1}{4}$, left end included (enter Y or N): N

to $x =$ $\frac{1}{4}$, right end included (enter Y or N): Y

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✓ Question 6

1/1 pt 0-1 99

Find all the values of x such that the given series would converge.

$$\sum_{n=1}^{\infty} \frac{(-1)^n (x^n)(n+11)}{(7)^n}$$

The series is convergent

from $x =$ -7 , left end included (enter Y or N): N

to $x =$ 7 , right end included (enter Y or N): N

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✓ Question 7

1/1 pt 0-1 99

Find all the values of x such that the given series would converge.

$$\sum_{n=1}^{\infty} \frac{10^n (x^n)(n+1)}{(n+10)}$$

The series is convergent

from $x =$ $-\frac{1}{10}$, left end included (enter Y or N): N

to $x =$ $\frac{1}{10}$, right end included (enter Y or N): N

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Question 8 1/1 pt 1 96

The function $f(x) = \ln(5 - x)$ is represented as a power series

$f(x) = \sum_{n=0}^{\infty} c_n x^n$.

Find the first few coefficients in the power series.

$c_0 =$ $\ln(5)$

$c_1 =$ $-\frac{1}{5}$

$c_2 =$ $-\frac{1}{50}$

$c_3 =$ $-\frac{1}{375}$

$c_4 =$ $-\frac{1}{2500}$

Find the radius of convergence R of the series.

$R =$ 5 .

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