

Section 11.1 - Sequences and Series

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✓ Question 1

✓ 1/1 pt ↺ 1 ↻ 99

For the sequence defined by:

$$a_1 = 3$$

$$a_{n+1} = \frac{2}{a_n} + 2$$

Find:

$$a_2 =$$

$$\frac{8}{3}$$

$$a_3 =$$

$$\frac{11}{4}$$

$$a_4 =$$

$$\frac{30}{11}$$

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✓ Question 2

✓ 1/1 pt ↺ 1 ↻ 99

Find a formula for the general term a_n of the sequence assuming the pattern of the first few terms continues.

$$\{5, 8, 11, 14, 17, \dots\}$$

Assume the first term is a_1

$$a_n =$$

$$2 + 3n$$

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✓ Question 3

✓ 1/1 pt ↺ 1 ↻ 99

For the sequence $a_n = a_{n-1} + a_{n-2}$ and $a_1 = 5, a_2 = 6$,

its first term is

5

its second term is

6

its third term is

11

its fourth term is

17

its fifth term is

28

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✓ Question 4

✓ 1/1 pt ↺ 1 ↻ 99

Find the limit of the sequence as n approaches infinity:

$$a_n = \frac{9n - 1}{8n + 6}$$

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✓ Question 5

✓ 1/1 pt ↻ 1 ⇌ 99

Find the limit of the sequence $a_n = \frac{(\cos n)}{4^n}$.

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✓ Question 6

✓ 1/1 pt ↻ 0-1 ⇌ 99

Given the sequence $a_n = \frac{2^n}{5^n}$:

This sequence is ✓

This sequence is ✓

Does this sequence converge or diverge? ✓

If the sequence does converge, to what value? If it diverges, enter DNE

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✓ Question 7

✓ 1/1 pt ↻ 1 ⇌ 99

Given the sequence $a_n = \frac{n^6}{n^5}$:

This sequence is ✓

This sequence is ✓

Does this sequence converge or diverge? ✓

If the sequence does converge, to what value? If it diverges, enter DNE

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✓ Question 8

✓ 1/1 pt ↻ 0-1 ⇌ 99

Given the sequence $a_n = \frac{\sin(4n)}{n^2 + 3}$:

This sequence is ✓

This sequence is ✓

Does this sequence converge or diverge? ✓

If the sequence does converge, to what value? If it diverges, enter **DNE**

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✓ **Question 9**

✓ 1/1 pt ↺ 0-1 ↻ 99

Given the sequence $a_n = \frac{6n^3 + 4}{n^3 + 5}$:

This sequence is ✓

This sequence is ✓

Does this sequence converge or diverge? ✓

If the sequence does converge, to what value? If it diverges, enter **DNE**

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