WebAssign
Hw 19 (11.1): Sequences (Homework)

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MA 162 Spring 2012, section 321, Spring 2012
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Current Score : 20 / 20 **Due :** Tuesday, February 28 2012 11:55 PM EST

1. 1.53/1.53 points | Previous Answers SCalcET7 11.1.005.

List the first five terms of the sequence.

$$a_n = \frac{(-1)^{n-1}}{4^n}$$

$a_1 =$ 1/4 ✓
$a_2 =$ -1/16 ✓
$a_3 =$ 1/64 ✓
$a_4 =$ -1/256 ✓
$a_5 =$ 1/1024 ✓

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2. 1.53/1.53 points | Previous Answers SCalcET7 11.1.009.

List the first five terms of the sequence.

$$a_1 = 4, \quad a_{n+1} = 5a_n - 6$$

$a_1 =$ 4 ✓
$a_2 =$ 14 ✓
$a_3 =$ 64 ✓
$a_4 =$ 314 ✓
$a_5 =$ 1564 ✓

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3. 1.53/1.53 points | Previous Answers SCalcET7 11.1.013.MI.

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

$$\left\{\frac{1}{2}, \frac{1}{4}, \frac{1}{6}, \frac{1}{8}, \frac{1}{10}, \ldots\right\}$$

$a_n =$ ✓

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4. 1.53/1.53 points | Previous Answers SCalcET7 11.1.023.

Determine whether the sequence converges or diverges. If it converges, find the limit. (If an answer does not exist, enter DNE.)

$$a_n = 1 - (0.3)^n$$

$\lim_{n \to \infty} a_n =$ ✔

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5. 1.53/1.53 points | Previous Answers SCalcET7 11.1.024.

Determine whether the sequence converges or diverges. If it converges, find the limit. (If an answer does not exist, enter DNE.)

$$a_n = \frac{n^3}{3n^3 + 1}$$

$\lim_{n \to \infty} a_n =$ ✔

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6. 1.53/1.53 points | Previous Answers SCalcET7 11.1.028.MI.

Determine whether the sequence converges or diverges. If it converges, find the limit. (If an answer does not exist, enter DNE.)

$$a_n = \frac{2^{n+3}}{7^n}$$

$\lim_{n \to \infty} a_n =$ ✔

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7. 1.53/1.53 points | Previous Answers SCalcET7 11.1.030.

Determine whether the sequence converges or diverges. If it converges, find the limit. (If an answer does not exist, enter DNE.)

$$a_n = \sqrt{\frac{n+6}{25n+6}}$$

$\lim_{n \to \infty} a_n =$ ✔

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8. 1.53/1.53 points | Previous Answers SCalcET7 11.1.037.

Determine whether the sequence converges or diverges. If it converges, find the limit. (If an answer does not exist, enter DNE.)

$$\left\{\frac{(7n-1)!}{(7n+1)!}\right\}$$

$$\lim_{n\to\infty}\left(\frac{(7n-1)!}{(7n+1)!}\right) = \checkmark$$

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9. 1.53/1.53 points | Previous Answers SCalcET7 11.1.041.

Determine whether the sequence converges or diverges. If it converges, find the limit. (If an answer does not exist, enter DNE.)

$$a_n = n^2e^{-n}$$

$$\lim_{n\to\infty} a_n = \checkmark$$

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10. 1.53/1.53 points | Previous Answers SCalcET7 11.1.045.

Determine whether the sequence converges or diverges. If it converges, find the limit. (If an answer does not exist, enter DNE.)

$$a_n = \frac{n}{3}\sin(3/n)$$

$$\lim_{n\to\infty} a_n = \checkmark$$

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11. 1.53/1.53 points | Previous Answers SCalcET7 11.1.073.

Determine whether the sequence is increasing, decreasing, or not monotonic.

$$a_n = \frac{1}{5n+2}$$

- ○ increasing
- ◉ decreasing
- ○ not monotonic

✔

Is the sequence bounded?

- ◉ bounded
- ○ not bounded

✔

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12. 1.53/1.53 points | Previous Answers SCalcET7 11.1.074.

Determine whether the sequence is increasing, decreasing, or not monotonic.

$$a_n = \frac{2n - 6}{6n + 3}$$

- ◉ increasing
- ○ decreasing
- ○ not monotonic

✔

Is the sequence bounded?

- ◉ bounded
- ○ not bounded

✔

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13. 1.64/1.64 points | Previous Answers SCalcET7 11.1.076.

Determine whether the sequence is increasing, decreasing, or not monotonic.

$$a_n = 5ne^{-5n}$$

- ○ increasing
- ◉ decreasing
- ○ not monotonic

✔

Is the sequence bounded?

- ◉ bounded
- ○ not bounded

✔

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