Web**Assign**

Hw 19 (11.1): Sequences (Homework)

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MA 162 Spring 2012, section 321, Spring 2012

Instructor: Jonathan Montano

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.

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

$$a_1 = \boxed{1/4}$$

$$a_2 = -1/16$$

$$a_3 = 1/64$$

$$a_4 = -1/256$$

$$a_5 = 1/1024$$

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2. 1.53/1.53 points | Previous Answers

SCalcET7 11.1.009.

List the first five terms of the sequence.

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

$$a_1 = \boxed{4}$$

$$a_3 = 64$$

$$a_4 = 314$$

$$a_5 = 1564$$

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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.

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

$$a_n = \checkmark$$

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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.)

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

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



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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.)

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

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

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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.)

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

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

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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.)

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

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

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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.)

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

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

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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.)

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

$$\lim a_n = \checkmark$$

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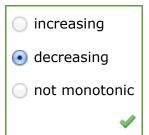
11.1.53/1.53 points | Previous Answers

SCalcET7 11.1.073.

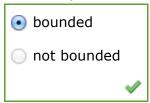
Determine whether the sequence is increasing, decreasing, or not monotonic.

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

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Is the sequence bounded?





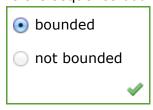
12.1.53/1.53 points | Previous Answers

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?



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SCalcET7 11.1.076.

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

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

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