

Test #6: Chapter 11

Mth 164-280

Name: _____

Important Dates/Times: Turn This Test in By-

Saturday, 11:00AM, 05/01/10 = 10 point bonus

Tuesday, 7:00PM, 05/04/10 = as graded

Wednesday, 10:00AM, 05/05/10 = max(25 point penalty, 0 grade)

Thursday, 10:00AM, 05/06/10 = max(50 point penalty, 0 grade)

Friday, 10:00AM, 05/07/10 = max(75 point penalty, 0 grade)

Any Date Later = 0 grade

Instructions: Print this test from the PDF file on Blackboard. Show all work on these pages. You may use the back of the pages, if necessary. Put only the answers in the answer block(s) if provided.

1. Find the third and fifth terms of the sequence that is defined by:

$$a_n = \frac{(-1)^{n+1}(n+2)!}{3}$$

Solve the expression value. Give the answers as numbers, not expressions.

| | |
|--|------------|
| | Third term |
| | Fifth term |

2. Find the third, fourth, and fifth terms of the sequence defined by the recursive formula:

$$a_1 = -5$$

$$a_2 = 3$$

$$a_n = na_{n-1} + 5a_{n-2}, \text{ for } n \geq 3$$

Solve the expression value. Give the answers as numbers, not expressions.

| | |
|--|-------------|
| | Third term |
| | Fourth term |
| | Fifth term |

3. Classify this sequence as an arithmetic sequence, a geometric sequence, or neither.

$$a_n = 20 - 3n$$

| | |
|--|---------------------|
| | Arithmetic sequence |
| | Geometric sequence |
| | Neither |

4. Classify this sequence as an arithmetic sequence, a geometric sequence, or neither.

$$a_n = \frac{1}{4} \left(-\frac{2}{3} \right)^{n-1}$$

| | |
|--|---------------------|
| | Arithmetic sequence |
| | Geometric sequence |
| | Neither |

5. Classify this sequence as an arithmetic sequence, a geometric sequence, or neither.

$$a_n = \frac{3}{n!}$$

| | |
|--|---------------------|
| | Arithmetic sequence |
| | Geometric sequence |
| | Neither |

6. Write

$$5 - 9 + 13 - 17 + 21 - 25$$

in summation notation.

| |
|---------|
| Answer: |
|---------|

7. Find:

$$\sum_{k=1}^4 (2k^2 + k)$$

Give the answer as a number, not an expression.

| |
|---------|
| Answer: |
|---------|

8. Find

$$\sum_{k=2}^7 (-1)^k (4k - 1)$$

Give the answer as a number, not an expression.

Answer:

9. Find the formula for the n th term of the geometric sequence:

$$96, 48, 24, 12, 6, 3, \frac{3}{2}, \dots$$

Answer:

$$a_n =$$

10. Find the fourth term of a geometric sequence whose first term is 6 and whose fifth term is $30\frac{3}{8}$. Give the answer in lowest terms, not a decimal value. If the answer is not given in lowest terms, it will be counted as incorrect; no partial credit will be given.

Answer:

11. Find the sum of the infinite geometric series:

$$\sum_{n=0}^{\infty} 1800 \left(\frac{1}{3}\right)^n$$

Give the answer as a number.

Answer:

12. Write $0.\overline{148}$ as the quotient of two integers. Give the answer in lowest terms. If the answer is not given in lowest terms, it will be counted as incorrect; no partial credit will be given.

Answer: