Name:

Date:

# Graded Assignment

## Unit Test, Part 2: Function

Answer the following questions to practice using what you've learned. Write your responses in the space provided, and turn the assignment in to your instructor.

Total score: \_\_\_\_ of 100 points

(Score for Question 1: \_\_\_ of 7 points)

1. One of the tables below contains  values that were generated by a linear function. Determine which table, and then write the equation of the linear function represented by the table.

Table #1

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *x* | 2 | 5 | 8 | 11 | 14 | 17 | 20 |
| *y* | 1 | 3 | 7 | 13 | 21 | 31 | 43 |

Table #2

| *x* | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *y* | 10 | 13 | 18 | 21 | 26 | 29 | 34 |

Table #3

| *x* | 2 | 4 | 6 | 8 | 10 | 12 | 14 |
| --- | --- | --- | --- | --- | --- | --- | --- |
| *y* | 1 | 6 | 11 | 16 | 21 | 26 | 31 |

Answer**:**

(Score for Question 2: \_\_\_ of 9 points)

1. Give an example of each of the following:
2. A function whose domain is  (3 points)
3. An arithmetic sequence (3 points)
4. A system of equations with no solutions (3 points)

Answer:

(Score for Question 3: \_\_\_ of 6 points)

1. For , find:
2.  (3 points)
3.  (3 points)

Answer**:**

(Score for Question 4: \_\_\_ of 6 points)

1. For  and , find:
2.  (3 points)
3.  (3 points)

Answer**:**

(Score for Question 5: \_\_\_ of 9 points)

1. For the sequence given by , answer the following:
2. Find the first five terms. (3 points)
3. Find the sum of the first 25 terms. (3 points)
4. Is this an arithmetic sequence? If so, how can you tell? If not, why not? (3 points)

Answer**:**

(Score for Question 6: \_\_\_ of 7 points)

1. Graph the area bounded by , , , and .

Answer**:**

(Score for Question 7: \_\_\_ of 6 points)

1. For the function defined by:



1. Evaluate . (3 points)
2. Graph . (3 points)

Answer**:**

(Score for Question 8: \_\_\_ of 7 points)

1. Solve the following system of equations algebraically. Verify your solution either graphically or by using matrices.



Answer**:**

(Score for Question 9: \_\_\_ of 7 points)

1. Solve the following system of equations algebraically. Verify your solution either graphically or by using matrices.



Answer**:**

(Score for Question 10: \_\_\_ of 9 points)

1. Given matrices A, B, and C below, perform the indicated operations if possible. If the operation is not possible, explain why.

, 

1. 3A + B (3 points)
2. 2B + C (3 points)
3. CA (3 points)

Answer**:**

(Score for Question 11: \_\_\_ of 6 points)

1. Given the table below, evaluate the following:

| x |  |  |  | 0 | 1 | 2 | 3 | 4 | 5 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 |
|  |  |  |  |  |  |  |  |  |  |

1.  (3 points)
2.  (3 points)

Answer**:**

(Score for Question 12: \_\_\_ of 6 points)

1. Express the following function,  as a composition of two functions f and g.



Answer**:**

(Score for Question 13: \_\_\_ of 15 points)

1. You have a coupon for your favorite clothing store for $25 off any purchase of more than $50. The store is also running a 20%-off sale on its entire inventory. Let x be the original price,  be the price with the $25 coupon applied, and  be the price with the 20% discount applied.
2. Write an expression for . (3 points)
3. Write an expression for . (3 points)
4. What would the expression  represent? (3 points)
5. What would the expression  represent? (3 points)
6. If the store allows you to apply both the 20% discount and the $25-off coupon, does it matter which you apply first? How do you know? (3 points)

Answer: