Advanced Topics in Mathematics NAME
Test Review - Unit 3 Function Analysis

1. Find the slope of the line containing the pair of points: (5, 2) and (, 7)

[A]  [B]  [C]  [D] 

1. Which one of the following is an equation of a line that passes through the point  with a slope of 4?

[A]  [B]  [C]  [D] 

1. Find the slope of the line described: A line **perpendicular** to 

[A]  [B]  [C]  [D] 

1. Find the exact distance between the two ordered pairs  and .

[A]  [B]  [C]  [D] 

1. Find the midpoint of the line segment joining the ordered pairs  and .

[A]  [B]  [C]  [D] 

1. The center of the circle with the following equation is: 

[A]  [B]  ) [C] ( 3) [D] (2, 

1. Which one of the following is the standard form of the equation of the circle whose center is at the point  and whose radius is 4?

[A]  [B] 

[C]  [D] 

1. Which one of the following **does not** define *y* as a function of *x*?

[A]  [B]  [C]  [D] 

1. If  then find .

[A] 19 [B]  [C]  [D] 11

1. If , then find .

[A]  [B]  [C]  [D] 

1. If , then evaluate .

[A]  [B]  [C] 3 [D] 4

1. State the domain of the following function: 

[A]  [B]  [C]  [D] 

1. State the domain of the following function in interval notation: 

[A]  [B]  [C]  [D] 

1. Use the graph below to determine the function’s **range**. Tick marks along the axes represent one unit each.

 *y*

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 [A]  [B] 

 [C]  [D] 

 *x*

1. The graph of  can be obtained by doing which of the following transformations of the graph of ?

[A] reflect about the *x*-axis, stretch by a factor of 3, shift up 5 units.

[B] shift down 5 units, reflect about the *y*-axis, stretch by a factor of 3.

[C] reflect about the *x-*axis, stretch by a factor of 3, shift down 5 units.

[D] reflect about the *x*-axis, shrink by a factor of 3, shift down 5 units.

1. Find the coordinates of the vertex of the parabola: 

[A] (, 5) [B] (3, 5) [C] (3, ) [D] (, )

1. Find the coordinates of the vertex of the parabola: 

[A] (, 5) [B] (, ) [C] (1, ) [D] (1, 5)

1. Match the correct equation with the parabola. Tick marks along the axes represent one unit each.

 *y*

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[A]  [B] 

[C]  [D] 

 *x*

1. Find the *x* and *y* intercepts for the given quadratic function: 

[A]  [B] 

[C]  [D] 

1. The number of spiders, , remaining within a 10-foot radius of their birthplace *t* days after birth is given by the formula: . Find the number of spiders present within this radius 10 days after their birth.

[A] 0 [B] 5 [C] 50 [D] 800











**ANSWERS**

Part 1

1. C
2. D
3. B
4. A
5. A
6. B
7. D
8. D
9. B
10. C
11. D
12. D
13. A
14. D
15. C
16. A
17. B
18. C
19. D
20. C

Part 2

1. A

2. B

3. D

4. C

5. D

11. C

12. B

13. A

16. C

17. A

29. C

30. D

31. C

32. A