Additional problems from previous quizzes (Math 201 quiz2)

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1. Let

f(x,y)= .

 At what points (x,y) is the function f continuous? Explain

2. Show that  does not exist

3. Find the first four terms of the binomial series for the function .

4. Decide whether the following limit exists

 

5. Use Maclaurin series to estimate the integral  with an error of magnitude less than 0.001

6. Let  Find 

7. Find  . Explain

 **Circle the correct answer in each of the following problems [ 5 points for each correct answer, -1 point penalty for each wrong answer].**

8. 

1. 1
2. 1/2
3. 0
4. does not exist

 [5 pts.]

9. The surface  is a

(A) elliptic paraboloid (B) elliptic cone (C) circular paraboloid

(D) hyperbolic paraboloid (E) none of the above

10. Consider the function f(x,y) =  . Then

(A) f is discontinuous at (0,0) for all values of k.

(B) f is continuous at (0,0) provided that k=0

(C) f is continuous at (0,0), provided that k=1

(D) f is continuous at (0,0) , provided that k=−1.

1. f is continuous at (0,0) for all values of k.

11. If the equation

 xexy + yezx + zexy =2, determines z as a function of x and y, then 

 at ( 0, 1, 1) is equal to:

1. 0
2. 1
3. 3
4. -3

(e) none of the above

12. Using the Maclaurin series for , the Maclaurin series of  is

(A)  (B)  (C) 

(D)  (E) none of the above

13. =

1. 
2. 1
3. 0
4. -1
5. does not exist

14. Using series, the value of the  is

(A) e (B) -3 (C) 3 (D) 0 (E) none of the above

15. If   , then

 (a) 

 (b) 

 (c) limit 

 (d) limit

1. none of the above.