1. Approximate the area under the curve  using Simpson’s Rule with n=4 on the interval [-1, 1].

A.  B.  C.  D.  E. NOTA

1. Find the equation of the line tangent to  at the point .

A.  B.  C.  D.  E. NOTA

1. Find the length of the parametric curve defined by  and  for .

A.  B.  C.  D.  E. NOTA

|  |  |  |  |
| --- | --- | --- | --- |
|  | 0 | 1 | 2 |
|  | 1 | 2 | 3 |
|  | 2 | 2 | 3 |
|  | 3 | 0 | 1 |

1. Let  be a function,  be its differentiable inverse function, and , the product of the two. Using the table to the right, find .

A. 6 B.  C.  D. 4 E. NOTA

1. Evaluate 

A.  B.  C.  D.  E. NOTA

1. Evaluate 

A.  B.  C.  D.  E. NOTA

1. Evaluate 

A.  B.  C.  D.  E. NOTA

1. Find the area enclosed by the polar curve  on the interval [0, 2π].

A.  B.  C.  D.  E. NOTA

1. Find the area of the region bound by the curve , the x-axis with .

A.  B.  C.  D. diverges E. NOTA

1. Let  be the region bounded by , ,  and . Find the y-coordinate of the centroid of .

A.  B.  C.  D.  E. NOTA

1. Find the surface area of the solid of revolution formed when  is revolved about the x-axis on the interval [0,2].

A.  B.  C.  D.  E. NOTA

1. Evaluate 

A. Non integrable B.  C.  D.  E. NOTA

1.  is the Maclaurin Power Series representation of which function?

A.  B.  C.  D.  E. NOTA

1. Evaluate .

A. diverges B.  C.  D.  E. NOTA

1. Consider the function defined by  Which of the following is true at x=0?
2. *f* changes in concavity
3. *f* is decreasing with an increasing slope
4. *f* is decreasing with a decreasing slope
5. *f* has a minimum value at x=0
6. NOTA
7. 

A.  B.  C. 

D.  E. NOTA

1. Find the volume of a solid whose base is the region in quadrant I bounded by  and and has cross-sections perpendicular to the x-axis that are semi-circles.

A.  B.  C.  D.  E. NOTA

1. If  and , find .

A.  B.  C.  D.  E. NOTA

1. Evaluate 

A.  B.  C. 1 D. 2 E. NOTA

1. If  for , find .

A. 1 B. 2 C. 1/2 D. undefined E. NOTA

1. 

A.  B.  C.  D.  E. NOTA

1. For the parametric curve defined by  and , find the equation of the line normal at (*a*, *b*) such that the curve has a vertical tangent at (*a*, *b*), *a*<0 and .

A.  B.  C.  D.  E. NOTA

1. Solve for  given that .

A. 

B. 

C. 

D. 

E. NOTA

1. Find the arc length of the curve given by  and  from t=0 to t=1.

A.  B.  C.  D.  E. NOTA

1. Find the general expression for the slope of the polar curve .

A. 

B. 

C. 

D. 

E. NOTA

1. Approximate the average value of on the interval [0,2] using the trapezoid rule with n=2.

A. 1.5 B.7/2 C. 6 D. 2 E. NOTA

1. The population of an awesome country is modeled by 

in which the variable *t* represents time. What is the carrying capacity of the country?

A. 4024 B. 2012 C. 2013 D.  E. NOTA

1. Find the volume of the solid of revolution formed when the region bound by , , , and  is revolved about the y-axis.

A.  B.  C.  D. e E. NOTA

1. Find the slope of the tangent line to  at .

A. undefined B.  C.  D.  E. NOTA

1. Use the Maclaurin Power Series representations to find the antiderivative of 

A.  B.  C.  D.  E. NOTA