Chapter 3 Practice TEST

NO CALCULATOR

1. Find the derivative of
2. Find the derivative of
3. (multiple choice) If , then   
     
   A)   
     
   B)   
     
   C)   
     
   D)   
     
   E)
4. Determine
5. If , then
6. If , then
7. (multiple choice) If , then =  
     
   A) 2 B) C) D) E)
8. (multiple choice) If , then   
     
   A) B) C) D) E)
9. Determine an equation (standard form) of the line normal to the graph of at the point where .
10. Evaluate the following limits:  
      
    a) b)   
      
      
      
    c) d)
11. If , then find an expression for in terms of *y*.
12. Given the following table of values, find the value of when

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

1. Find all values of *x* for which the tangent line to passes through the origin.
2. Let *f* and *g* be differentiable functions, and let *g* be the inverse function of *f*.   
   If and , then determine the value of .
3. A particle has position function , for .  
   a) Where is the particle at the start?  
   b) When is the particle speeding up? Slowing down?  
   c) Determine the total distance travelled in the first 5 seconds.
4. Find the equation of the tangent line to at the point where .