**AP Calculus AB Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**3.5 – 3.9 TEST REVIEW Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Hour\_\_\_\_\_\_\_**

**3.5- Derivatives of Trigonometric Functions\*\***

**3.6- Chain Rule**

**3.7- Implicit Differentiation**

**3.8- Derivatives of Inverse Trigonometric Functions\*\***

**3.9- Derivatives of exponential and logarithmic Functions\*\***

**\*\*These sections involve formulas/rules that should be memorized!!!\*\***

1. **Find the average rate of change of the function over the interval [1, 3] and find the instantaneous rate of change of the function at *x = 4*:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *x* | *f(x)* | *f ’(x)* | *g(x)* | *g’(x)* |
| 2 | 3 | -2 | 4 | 1 |
| 4 | 2 | 3 | 2 | 4 |



**Use the table above to find the *derivatives* of following:**

1. at
2. at
3. at
4. at
5. **How many times does the particle change direction in the interval 0 < t < 4 if velocity is given by v(t) = (t+4)cos(2t)? When does the particle change direction? Justify your answer.**

**Find the acceleration of the particle as a function of time, t.**

1. **Know how to determine if a piecewise function is differentiable (find the correct value for c):**
2. **Find for the following functions:**
3. **Find the derivative using logarithmic differentiation:**
4. **Find the slope of the curve at the indicated point using implicit differentiation:**
   1. at (3, 2)
   2. at (2, 1)
5. **Find the second derivative of the function using implicit differentiation:**
6. **Find the slope of the line tangent to the curve at the indicated point:**
   1. ,
   2. ,