**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**September 7th, 2011**

**AP Calculus 1, Mrs. Sulkes**

**Properties of Limits**

Part 1: Given f(x) = x2 - 1 and g(x) = 2x.

1. Find each of the following limits.





1. Evaluate 

1. Evaluate 
2. Evaluate 
3. Evaluate 
4. Evaluate: 
5. Evaluate: 

1. Evaluate . Are there any special conditions?
2. Evaluate: . Are there any special conditions?
3. Evaluate.
4. Evaluate .
5. Evaluate .
6. Evaluate .
7. Evaluate .
8. Evaluate .

Part 2: Study the statements in part 1. There are pairs of statements that are equivalent.

Use these to help you determine which of the following statements are true. For

any two functions f(x) and g(x), where  and 

A.  = .

B.  = .

C. = .

D. = .

E.  = .

F. = .

G. 

H. 

Part 3: Use the following information to evaluate the limits. and .

1.  2. 

3.  4. 

5.  6. 

7. 

True or False?

1. If f(x) > g(x) for all x ≠ a, then .

2. If  then 

3. If f(x) = g(x) for all x ≠ 0, and then 

4. If f(c) = L, then 

5. 

Part 4. Find the limit of each of the following:

1.  (Hint: multiply numerator and denominator by 1 + cos x.)

2. 

3. 

4. 

5. 

6. 

**Assignment: p. 87 #33 – 39 odd and p. 88 #52 – 60 even**