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

L’Hopital’s Rule

Suppose f and g are differentiable and. We want to determine the .

If we have an indeterminate form (either  or ), then



L’Hopital’s Rule states that the limit of a quotient of functions is equal to the limit of the quotient of their derivatives, provided that the limit is an indeterminate form.

Examples:

1.  2. 

3.  4. 

5.  6. 

7.  8. 

9.  10. 

11.  12. 

Other indeterminate forms:

    

When in these forms, we try to re-write the limit as a fraction which yields the indeterminate form  or  so that we may use L’Hopital’s Rule.

Examples:

1. 

2. 

3. 

4. 

5. 

Note: The following forms are determinate:

   