MSLC Workshop Series

Math 1151 – Workshop

Indeterminate Forms and L’Hopital’s Rule

# INDETERMINATE FORMS

*What does it mean for a limit’s form to be indeterminate?*

*Which forms are indeterminate?*

Circle the forms which are indeterminate.

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# Determining the Form Exercises:

Write the form of each of the following limits.

1. 2.

3. 4.

5. 6.

7. 8.

9. 10.

11. 12.

13. 14.

# L’HOPITAL’S RULE

L’Hopital’s rule is a way of dealing with indeterminate forms of the type or .

**L’Hopital’s Rule**: If you want to know ,

and IF: #1. both and

- OR -

#2. both and

THEN: .

**Notes: 1. This is NOT the quotient rule for derivatives**

**2. L’Hopital’s Rule give the WRONG answer if #1 or #2 is not satisfied.**

Examples:

# L’Hopital’s Rule Exercises:

Evaluate the following limits, using L’Hopital’s Rule ***if appropriate***

1.

2.

3.

4.

5.

# FORCING A FRACTION

L’Hopital can also help us with the other indeterminate forms if we can **force a fraction**

that yields or .

**Examples**:

1.

2.

3.

# Forcing a Fraction Exercises:

Evaluate the following by applying L’Hopital’s Rule ***if appropriate***.

1. 2.

3. 4.

5. 6.