

Language of Mathematics Assignment 1

Limits

Learning Objectives

- Develop an intuitive understanding of the nature of limits.
- Able to calculate the limit of a function.
- Can explain and use various techniques for calculating the limit of a function.
- Able to explain the mathematical concept of a limit in a well-organized and well written report.

Grading rubric for report

Criteria	5 pts	2 pts	1pt or 0pts
Learning Objectives	Clearly shows the learning objectives and topic is thoroughly covered.	Not all learning objectives are achieved and/or topic is not thoroughly covered.	None of the learning objectives are achieved and/or shows a misunderstanding of the topic.
Report quality	Well-organized, well written, displays original thought, ideas follow and relate to each other in a logical way.	Not well written and/or contains a few grammatical or spelling errors, but shows original thought and ideas follow and relate to each other in a logical way.	Shows very little information, and contains many grammatical or spelling errors. Little effort made, looks like it was prepared night before or copied from the Internet or another student. Not well written, ideas do not follow in a logical way.

Report

Answer the following questions in your report. Your report should be more than a few sentences but less than a page. Do not restate definitions in the textbook. Use your own words.

- How are one-sided and two-sided limits related? How can the relationship be used to determine the existence or nonexistence of a limit?
- Describe in your own words a technique for evaluating each of the following (and find the exact limit if it exists):

$$\lim_{x \rightarrow 2} \frac{x^4 - 1}{x - 1}$$

$$\lim_{x \rightarrow 1} \frac{x^4 - 1}{x - 1}$$

Submission

Your instructor will give you details on submitting your report.