

Calculus 130, Chapter 3 Summary ~ things you should know

notes by Tim Pilachowski

Important concepts:

limits as x approaches a value a

limits as x approaches infinity

continuity of a function

average rate of change

instantaneous rate of change

slope of a secant line

slope of a tangent line

slope of a curve

first derivative

Be able to:

find $\lim_{x \rightarrow a^-} f(x)$ and $\lim_{x \rightarrow a^+} f(x)$.

determine whether or not a limit exists, and if it does exist, its value.

determine whether or not a function is continuous at a given value of x .

determine whether or not a function is continuous on an open interval.

determine whether or not a function is continuous on a closed interval.

identify values where a given function is discontinuous.

find average rate of change given a function and two x -values.

find instantaneous rate of change given a function and one x -value.

find slope of a secant line given a function and two x -values.

find slope of a tangent line given a function and one x -value.

find slope of a curve given a function and one x -value.

find a first derivative formula using the definition.

find the value of the first derivative given a function and one x -value.

Review exercises from the text:

Chapter 3 Review Exercises (answers to odd-numbered problems are in the back)

5 – 30, 35 – 40, 45, 46, 47, 50