

Calculus 221, Chapter 11 Summary ~ things you should know

Important concepts:

the n th Taylor polynomial of a function about 0

the n th Taylor polynomial of $f(x)$ at $x = a$

Newton-Raphson Algorithm

infinite series

geometric series

summation notation

integral test

Taylor series expansions for $\frac{1}{1-x}$, e^x , and $\cos x$.

Be able to:

use derivatives to find the n th Taylor polynomial of a function about 0.

use derivatives to find the n th Taylor polynomial of $f(x)$ about $x = a$.

use the Newton-Raphson Algorithm to approximate a zero/root of a function.

find the sum of a geometric series.

write the appropriate geometric series for an application and find its sum.

determine whether an infinite series converges or diverges.

use the integral test to determine whether a series converges or diverges.

manipulate Taylor series expansions using multiplication by a monomial, substitution, differentiation and integration.

Review exercises from the text:

Chapter 11 Review of Fundamental Concepts, 1 – 2, 4 – 10

Chapter 11 Supplementary Exercises, 1 – 16, 19 – 26, 29 – 35, 37 – 40, 43 – 45 (answers to odd-numbered problems are in the back)