Calculus 221, Chapter 10 Summary ~ things you should know

Important concepts:

differential equations: general and particular solutions

differential equations of the form $y' = ky$

constant solutions of a differential equation

direction fields of a differential equation

separation of variables

first-order linear differential equations, integrating factor

applications involving differential equations

graphs of differential equations, and graphs of their solutions

Euler's Method

Be able to:

find the general solution to s differential equation..

find the particular solution to s differential equation given an initial condition.

recognize and solve an exponential differential equation.

determine whether a function is a particular solution to a given differential equation.

find the constant solutions of a given differential equation.

plot the direction field of a given differential equation.

recognize and solve a separable differential equation.

recognize and solve a first-order linear differential equation.

set up and solve a differential equation for a given application

graph a differential equation on a *yz*-coordinate system.

sketch solutions on a *ty*-coordinate system, using the graph of a differential equation.

sketch solutions on a *ty*-coordinate system, given an application involving a differential equation.

use Euler's Method to approximate a particular solution to a differential equation.

Review exercises from the text:

Chapter 10 Review of Fundamental Concepts, 1 – 8, 12 – 13

Chapter 10 Supplementary Exercises, 1 – 11, 13 – 32 (answers to odd-numbered problems are in the back)