

Preparing for Class 21

Reading: Review *H-H* Section 4.1; Read *H-H* Section 4.3

Problems: There are quite a few more homework problems assigned to prepare for Class 21 than usual. This is because it is crucial that you spend time now practicing the derivative rules we have developed in the course so far. Monday's class will be devoted to discussing problems from the homework and ones similar to these.

H-H Section 4.1, #17, 20, 21, 43, 46, 49

H-H Section 4.3, #1, 2, 28, 29, 30, 34

H-H Section 4.5, #2, 3, 4, 29, 30, 31, 36, 37, 39 a)b), 40 a)b)

Homework Due: All problems assigned to prepare for Classes 20 and 21 are due at the start of Class 21.

Monday, October 16

Class 21:

Practicing the Rules of Differentiation

We know now a number of rules for differentiating (finding the derivative) of a function. In today's class we will spend some time working with these rules, separately and in combination.

Preparing for Class 22

Reading: *H-H* Sections 1.5, 1.7, 1.8 (This reading should be review for you.)

Problems: *H-H* Section 1.7, #2, 6, 12, 13, 15-17

H-H Section 1.8, #3-8, 37, 41

Wednesday, October 18

Class 22:

The Chain Rule

In today's class we will focus on what is perhaps the most important differentiation rule: the Chain Rule. This rule of differentiation allows us to differentiate "functions of functions," also known as compositions of functions. One consequence will be a formula for the derivative of the natural logarithm function. Another will be an extension of the power rule to non-integer exponents.

Take-Home Quiz on Rules of Differentiation handed out.

Lab 8: A Plethora Of Derivatives

*Preparing for Class 23*Reading: *H-H* Sections 4.4Problems: *H-H* Section 4.4, #1, 4, 7, 8, 9, 21, 22, 23, 25, 34, 36, 43, 45**Friday, October 20***Class 23:***Implicit Differentiation**

Not all functions have rules given explicitly by equations such as $y = f(x)$. We can also find the derivative $f'(x)$ (sometimes denoted by dy/dx) when a function $y = f(x)$ is defined *implicitly* through an equation of the form $G(x, y) = 0$. This process is known as *implicit differentiation*.

Take-Home Quiz on Rules of Differentiation Due at the Start of Class.