

**Class 19:** *Monday, October 17*

**The Algebra and Geometry of Inverse Functions**

Reading: *Smith & Minton* Sections 0.6, 6.2, & 6.7

Algebraic operations often have *inverses* associated with them. You already know about *additive* inverses and *multiplicative* inverses. The inverse of a function  $y = f(x)$  with respect to the operation of *composition of functions* is another function  $g$  with the property that  $g(f(x)) = f(g(x)) = x$ . If a function  $y = f(x)$  has an inverse, the graph of its inverse is the reflection of the graph of  $f$  about the line  $y = x$ .

**Homework 7:** *Smith & Minton* Section 6.2: 20, 24, 35, 36; Section 6.7: 1, 5, 6.

**REMINDER: Project Proposals and Homework 7 due in the Math 114 Course Box by 5:00 pm WEDNESDAY October 19**

**Lab 5:** *Monday October 17 or Tuesday, October 18*

**Related Rates:** In this week's Lab we will explore interesting related rates problems.

In this week's Lab we will also have a **Derivatives gateway** exam.

**Class 20:** *Wednesday, October 19*

**Derivatives of Inverse Functions**

Reading: *Smith & Minton* Sections 6.2 & 6.8

The geometric relationship between the graph of a function and the graph of its inverse implies a corresponding relationship between tangent lines. This fact can be used to relate the derivative of an inverse function to the derivative of the original function. The same result can be derived algebraically using the Chain Rule.

**Homework 8:** *Smith & Minton* Section 6.2: 1, 27, 30; Section 6.8: 6, 12.

**Homework 7 due in the Math 114 Course Box by 5:00 pm Wednesday October 19**

**PROJECT PROPOSALS DUE TODAY by 5:00 pm in the Math 114 Course Box**

**FALL HOLIDAY** *Friday, October 21*

**REMINDER: Exam 2 is Tuesday October 25 7-9pm**