

**Math 211**  
**Project 1**  
**Fall 2006**

Name: \_\_\_\_\_  
Date: \_\_\_\_\_

This project is worth 10 points, distributed as indicated. In order to complete this project, you will need to produce a Derive worksheet and use the “embed” command to embed the requested graphs into the worksheet prior to printing the sheet. A completed Derive worksheet is necessary to receive full credit, as becoming familiar with Derive is a goal of this project. Tutorials for Derive and a sample worksheet can be found on the course webpage <http://faculty.evansville.edu/ct55/>. This project is due Monday, October 23.

1. Use Derive to help solve the following problems. [5 pts]

a. Graph the function and its derivative on the same axis. You may use the Derive to compute the derivative in addition to generating the graph.

$$f(x) = \frac{(x - 2)(x + 1)}{x^2 + 1}$$

b. Graph the function  $g(x) = (x^2 + 3x - 2)(x^3 - 4x^2 + x - 5)$  and the line tangent to the curve when  $x = 1$  on the same axis. You may use Derive to find the derivative and evaluate the function and its derivative.

2. Read section 3.3. Complete **two** of the following problems: #14, 20, 30 and 34. [5 pts]