Polynomial Function Graphing (Instructor Version)

*This lab is in two parts and will take one 60 minute class period. Students will work in groups with a suggested group size of 3 to 4.*

**Motivation:** Recognizing the important aspects of graphs of functions is important in the study of calculus. For polynomial functions, recognizing end behavior and finding intercepts is crucial. These are found by looking at the given function in both polynomial and factored forms.

**Objectives:** The goal of this lab is to solidify the students’ understanding of the relationship between a polynomial function and its graph using end behavior and intercepts.

**Activity 1: Polynomial Dominoes**

*This activity will take approximately 45 minutes. Your students will first need to be arranged in groups of 3 to 4. Once in their groups, each group is given a pack of polynomial dominoes. The goal of each group is to match each polynomial graph with its equation end-to-end forming a long “train” of dominoes. Some of the polynomial functions are given in expanded form and some are given in factored form. You should suggest to your students that they may want to write the given polynomial in its alternative form if they need more information about its graph.*

 *It is best if a table or large desk is used by the students to create the polynomial “train.” If desired, an incentive can be used to encourage students to do their best.*

*As groups completes their train and you have checked that their dominoes are matched up correctly, direct the groups to complete activity 2 worksheets working with their group members.*

**Activity 2: Polynomial Worksheet**

This activity will take approximately 15 minutes. Students will work in the same groups as in activity 1 to complete worksheets in which the graph is given and the students will find a function with the given graph. Each students should complete a worksheet.