

Graphing Polynomials Class Work

✎ **Objective:** *You will be able to sketch graphs of polynomials.*

★ **Turn & Talk:** What are some aspects of a polynomial that can help you determine certain points on its graph?

* To sketch graphs of polynomial functions, we will need to identify the following aspects:

- _____
- _____ (if reasonable)
- If the function is positive (above the x-axis) or negative (below the x-axis) between each pair of roots: Test points to do so!
- End behavior: Determined by the leading coefficient and degree of the polynomial

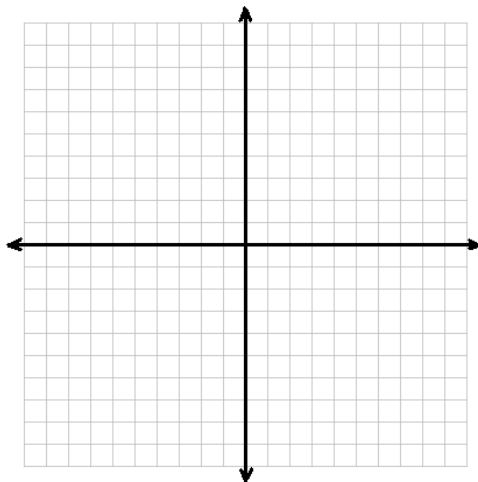
If the leading coefficient is **positive**:


- ~ **even** degree: both ends of the graph point up
- ~ **odd** degree: left side points down and right side points up

If the leading coefficient is **negative**:

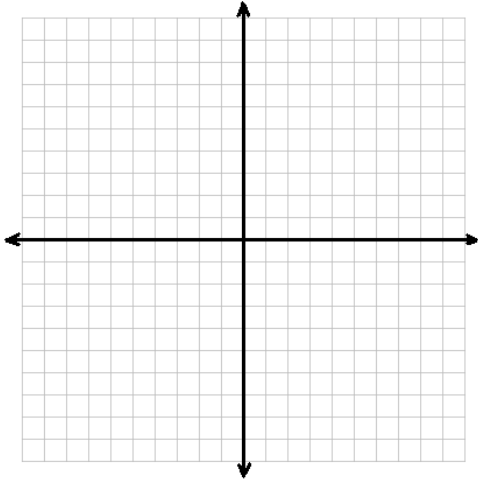
- ~ **even** degree: both ends of the graph point down
- ~ **odd** degree: left side points up and right side points down

***Example:** Sketch a graph of the function $y = -x^3 - 2x^2 + x + 2$

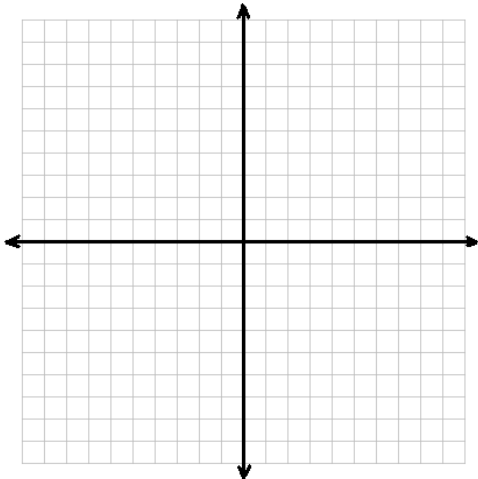


 Practice: Sketch a graph of each function.

1. $f(x) = x^3 + x^2 - 8x - 12$



2. $y = 2x^4 - 5x^3 - 11x^2 + 20x + 12$



Name: _____ Date: _____ **Unit 6 Class Work**

Recap:

List the important aspects of sketching graphs of polynomial functions.