

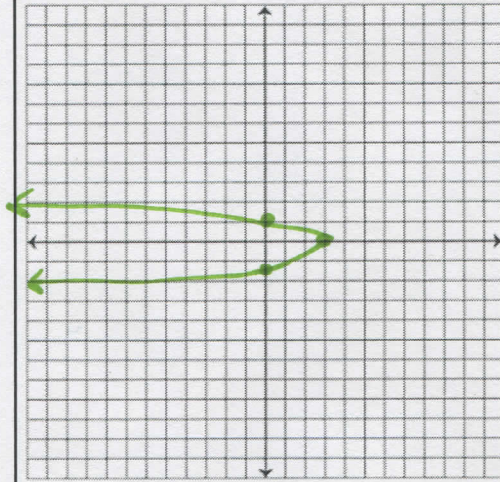
OBJECTIVE 1: Graphing Polynomial Functions

STEPS:

1. Identify degree (largest exponent), odd/even degree, LC (positive or negative), End behavior, & y-intercept: (always the constant in standard form without the variable)
2. Solve for the roots/zeros/solutions/x-intercepts
3. Determine when the graph is increasing or decreasing (describing what the range "y" does using the domain "x")
(max & min on calc. 2nd Trace 3 or 4)
4. Connect the dots with a sketch and add arrows (x-intercepts, y-intercept, max/mins)

a) $f(x) = x^4 + x^2 - 3$

Degree: **4**
 Even/Odd: **Even**
 LC: **1**
 Pos/Neg: **Pos**
 y-int: **(0, -3)**
 roots: **-1.5, 1**
 Name: **Quartic Trinomial**



b) $f(x) = 4 - x^3$

Degree: **3**
 Even/Odd: **Odd**
 LC: **-1**
 Pos/Neg: **Neg**
 y-int: **(0, 4)**
 roots: **1.5**
 Name: **Cubic Binomial**



c) $f(x) = x^3 - x^2 + x - 1$

Degree: 3

Even/Odd: Odd

LC: 1

Pos/Neg: Pos

y-int: (0, -1)

roots: 1

Name:

Cubic Polynomial



d) $f(x) = x^3 + x^2 - 4x + 2$

Degree: 3

Even/Odd: Odd

LC: 1

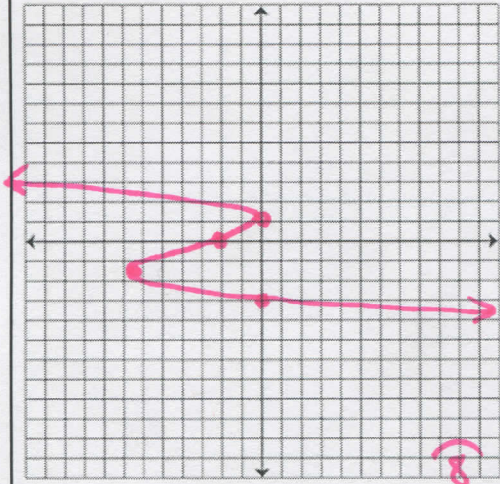
Pos/Neg: Pos

y-int: (0, 2)

roots: -3, 1

Name:

Cubic Polynomial
 Inc: $(-\infty, -1.535) \cup (1, \infty)$
 Dec: $(-1.535, 1)$



e) $f(x) = -x^4 - x^3 + 2x^2 - x - 3$

Degree: 4

Even/Odd: Even

LC: -1

Pos/Neg: Pos

y-int: (0, -3)

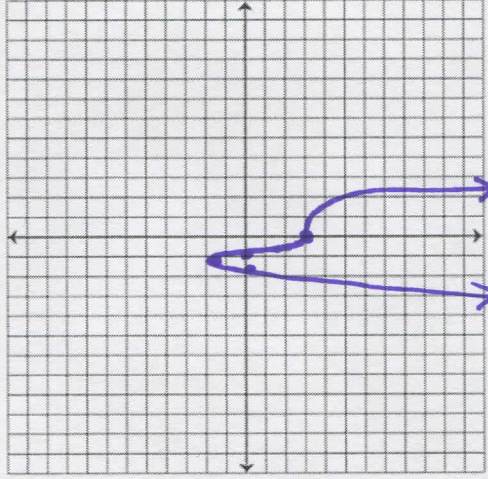
roots: -1, -1.5

Name:

Quartic Polynomial

Inc: $(-\infty, -1.518)$

Dec: $(-1.518, 0) \cup (0, \infty)$



Zoom in
 Box around the y-intercept

Still need help with: