Intermediate Algebra B ***Name _____***

Unit 6: Cubic Functions Re-Teach ***Hour 1 2 3 4 5***

6.1 I can graph polynomial functions and demonstrate understanding of the significant features of its graph and their relationship to real-world solutions.

NO CALCULATOR!!!

1. Sketch the end behavior of the following polynomial functions:
   a. $f(x) = -(x-3)(x+2)(x-1)^2$

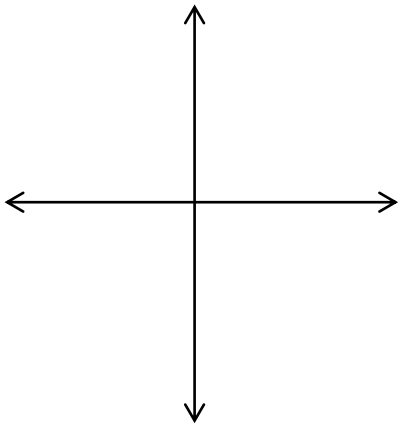
   b. $f(x) = 3x^3 + 2x - 1$

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

2. Identify the significant features of the polynomial function and use them to sketch the graph:

$$f(x) = -x(x-5)(x+7)$$

a. End Behavior sketch:

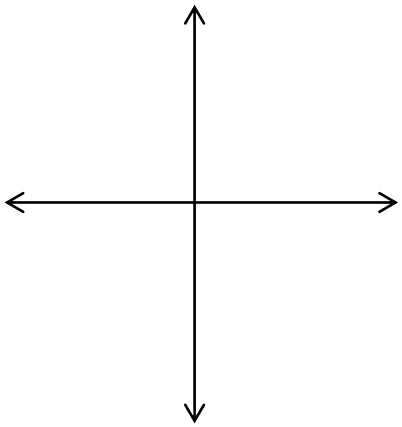


b. x-intercepts and their multiplicity:

3. Identify the significant features of the polynomial function and use them to sketch the graph:

$$f(x) = 2(x+5)^2(x-3)^2$$

a. End Behavior sketch:



b. x-intercepts and their multiplicity:

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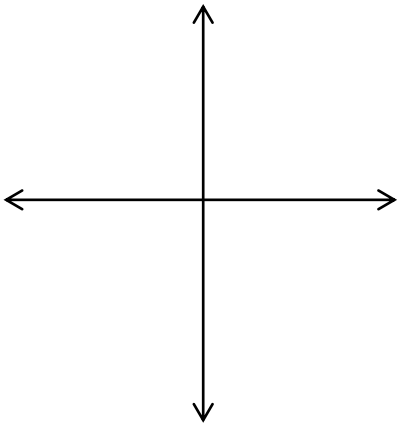
Level 2/3

4. Sketch a graph of the following polynomial:

$f(x) = x^3 + 6x^2 - x - 6$ given that x = -1 is a zero



5. Sketch a graph that meets the following requirements:
   - Roots at x = -7 and 3
   - Both roots have a multiplicity of 2
   - Positive leading coefficient