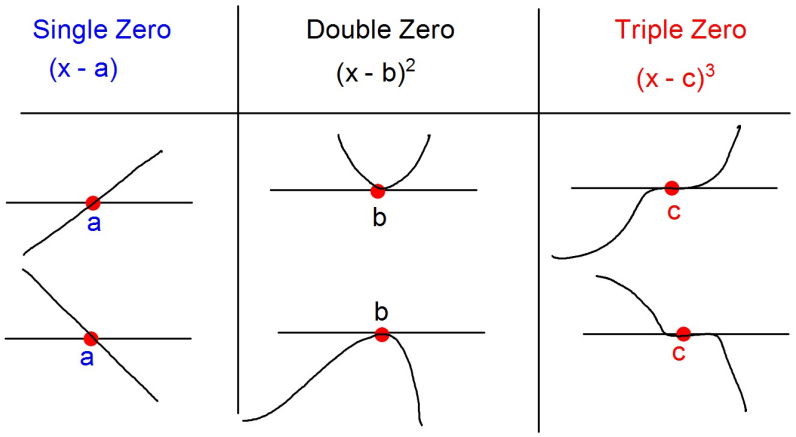
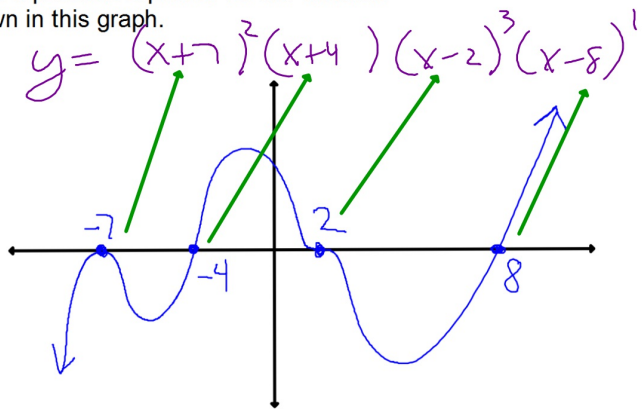
Shapes of Zeros:



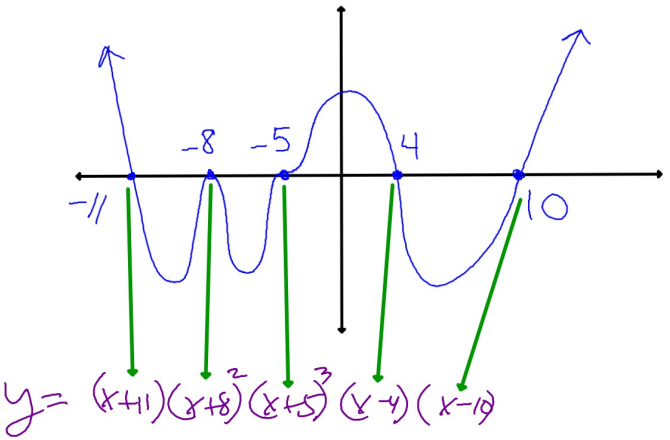
Sketch a graph of a polynomial:

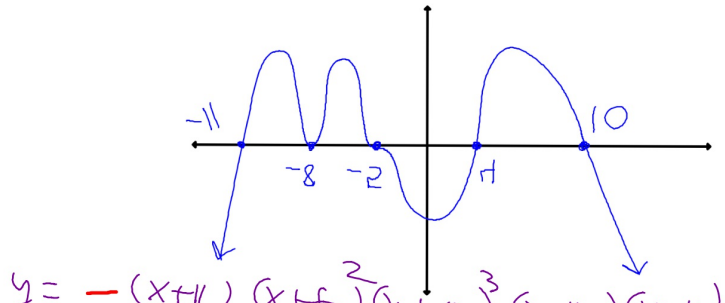
1. Find the Degree and LC
2. Determine End Behavior
3. Find zeros and what kind
4. Place dots on the x-axis for the zeros.
5. Connect Left End to Right End making sure the shape of each zero is correct.

Write a possible equation for the function shown in this graph.



shown in this graph.



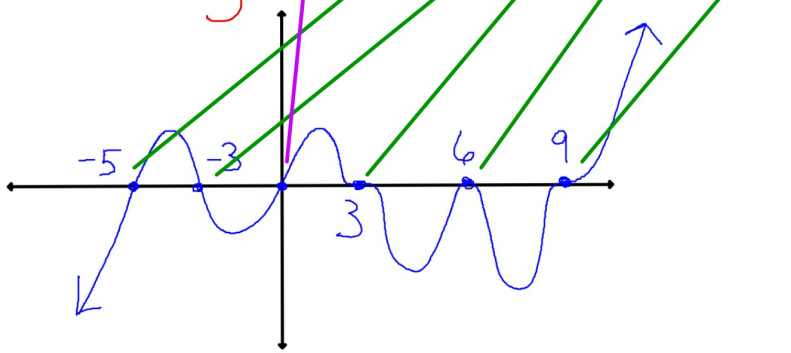


$y = -(x+11)(x+8)^2(x+2)^3(x-4)(x-10)$

If you were to just flip the whole graph upside down the zeros and their shapes wouldn't change. You would have to change the sign on the Leading Coefficient of the Polynomial. The easiest way to do this is to put a negative sign in front of the first term.

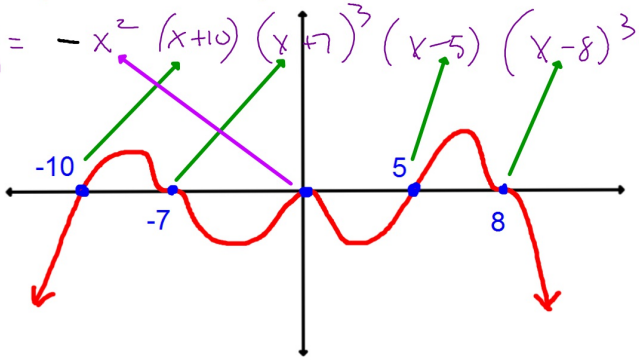
Write a possible equation for the function shown in this graph.

$y = x(x+5)(x+3)(x-3)^3(x-6)^2(x-9)^3$



Write a possible equation of this Polynomial:

$y = -x^2(x+10)(x+7)^3(x-5)(x-8)^3$



Because the end behavior indicates this is a negative even function and all the factors have positive leading coefficients you need to introduce a negative. The easiest way to do this is to put a negative in front of the first term, thus creating a negative leading coefficient.