Name_____ Date_____ Period_____

You need to use a graphing calculator or the rational zero test to find one zero or more and then use synthetic division to show x is a solution of the polynomial equation. Use the appropriate technique to find the rest of the zeros (this includes imaginary).

You must show work to receive credit. No decimals in the answers.

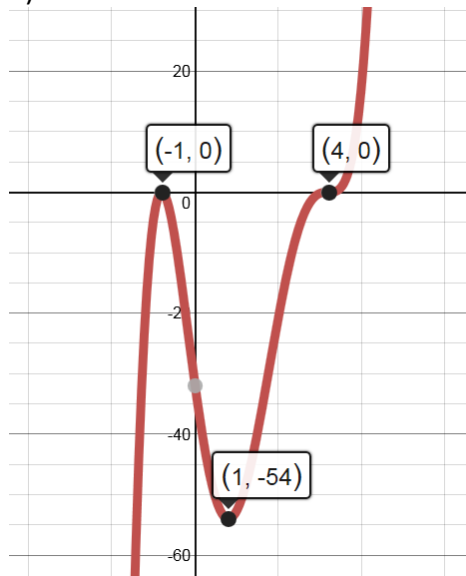|	
1) $f(x) = x^3 + 5x^2 - 2x - 10$	2) $f(x) = 6x^3 - 33x^2 - 78x + 105$
3) $f(x) = x^3 - 2x^2 + 9x - 18$	4) $f(x) = x^5 - 4x^4 + x^3 - 4x^2 - 12x + 48$
5) $f(x) = 3x^4 + 13x^3 - 33x^2 - 85x + 150$	6) $f(x) = 15x^3 - 49x^2 - 151x + 105$

7) $f(x) = x^4 - 1$	8) $f(x) = x^4 + x^3 - 27x^2 + 19x + 6$

Write the equation of the polynomial from the graph
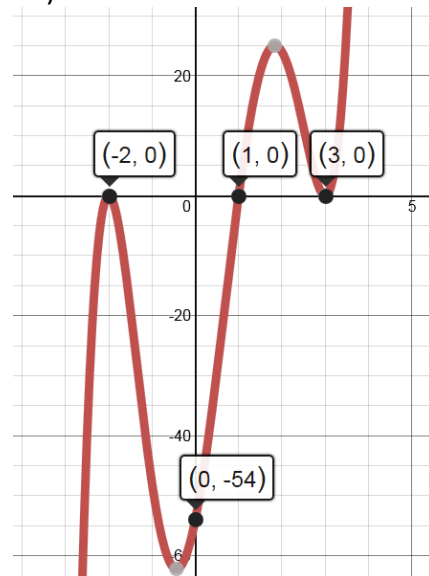
9)	10)
(-1, 0) (4, 0) (1, -54)	(-2, 0) (1, 0) (3, 0) (0, -54)
Equation in factored form:	Equation in factored form:

Write an equation in standard form given the zeros of the polynomial. You must multiply out the factors.
Don't forget about conjugate pairs!

11) $x = 5$, $x = 2i$	12) $x = -4$, $x = 5i$, $x = 1$
Equation in standard form:	Equation in standard form: