SM3 Name_____

HW #8-1 (Polynomials)

Period____

a) State the possible rational zeros for each function.
b) Find the 1st zero using synthetic division.
c) Then find the remaining zeroes of the quadratic factor (factor, quad formula, or convert to vertex form)
d) Upload a copy of your work (long or synthetic division) into the CANVAS file upload for this assignment.

1) $f(x) = 5x^3 + 29x^2 + 19x - 5$

2) $f(x) = 5x^3 + 11x^2 + 7x + 1$

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

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

1) Write a polynomial function in factored form that has the given zeros. Assume the vertical stretch factor is '1'.
2) Multiply the linear factors to obtain the standard form polynomial and choose from the options below.
3) Upload a copy of your work (box multiplication) into the CANVAS file upload for this assignment.

5) $\frac{1}{5}$, $\frac{1}{2}$, 0

6) 1, $\frac{5}{3}$, 3, $-\frac{1}{2}$

7) 3 mult. 2, $-\frac{5}{3}$

8) 4, 0, –4, $\frac{2}{3}$

a) Factor the "quadratic form" polynomials using 'm-substitution.
b) Identify the zeros from the optionts below.
c) Upload a copy of your work (factoring) into the CANVAS file upload for this assignment.

9) $f(x) = x^5 - 4x^3 - 5x$

10) $f(x) = x^5 + 5x^3 + 4x$

a) Find the 1st zero
b) Find the quadratic factor using either long or synthetic division.
c) Find all zeros (choose from the list below).
d) Upload a copy of your work into the CANVAS file upload for this assignment.

11) $f(x) = x^3 + 27$

12) $f(x) = x^3 - 8$

Find all roots.

13) $(x + 5)(x^2 - 3)(2x^2 + 1) = 0$

14) $(x - 2)(3x^2 + 8)(x^2 - 2) = 0$

a) Find all zeros using "box factor" (or by grouping if you know that method).
b) Upload a copy of your work into the CANVAS file upload for this assignment.

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

16) $f(x) = x^3 - 2x^2 - 5x + 10$