Name_____ ID: 1

SM3 HW #2-5 (Zeroes & Graphs of Polynomials)

Period____

a) Find the zeroes and their multiplicities
b) Determine the end-behavior,
c) Determine if the graph crosses or kisses at the zero
c) Draw the general shape of the graph.

1) $x(5x + 3)(x - 3) = 0$

2) $x(3x + 4)^2(x + 2) = 0$

3) $-2x^3(5x - 2)(x + 4) = 0$

4) $x(5x + 1)(x + 1) = 0$

5) $y = -3(x - 2)(x - 4)(x + 3)(x - 5)(x + 1)$

6) $y = 2(x - 1)(x + 6)(x - 7)(x + 1)$

Build a table then state the possible number of real and imaginary zeros for each function.

7) $f(x) = x^5 + 2x^4 + 6x^3 + 12x^2 + 8x + 16$

8) $f(x) = x^4 + 7x^2 + 12$

9) $f(x) = x^2 + 8x - 6$

10) $f(x) = x^3 - 3x^2 - 23x + 85$

Write a polynomial function in STANDARD FORM that has the following zeroes.

11) -1, -3, 0

12) -4, 5, -1

13) -4 mult. 2, 2

14) 0, -5, -1

15) 1, $-1 + \sqrt{5}$, $-1 - \sqrt{5}$

16) 5, $\sqrt{3}$, $-\sqrt{3}$

17) -4, $-1 - i$, $-1 + i$

18) 2, $2i$, $-2i$