Secondary Math 3 Name_____

HW 8-2 Zeros of Polynomials

Period____

State the number of complex zeros for each function.

1) $f(x) = 5x^4 - 8x^3 - 4x^2$

2) $f(x) = 3x^2 - 8x + 4$

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

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

For each function, use FACTORING to find all zeros.

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

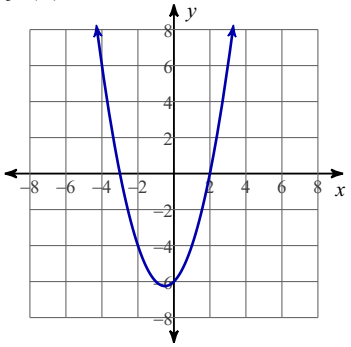
6) $f(x) = x^3 + 2x^2 + x$

7) $f(x) = x^3 + 8x^2 + 16x$

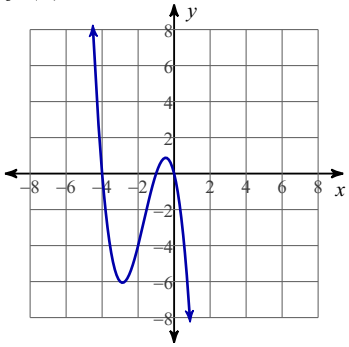
8) $f(x) = x^2 - x$

For each function, use the given graph to find the zeros.

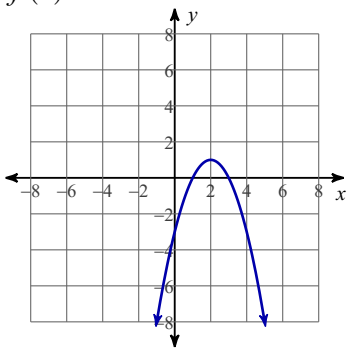
9) $f(x) = x^2 + x - 6$



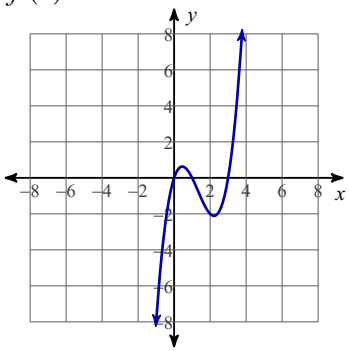
10) $f(x) = -x^3 - 5x^2 - 4x$



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



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



Write a polynomial function in factored form that has the given zeros.

13) 5, −4, 0

14) 5, 1, −5, 0

15) −3, 5, $-\frac{1}{4}$

16) $\frac{5}{4}$, −5, 0

Given one zero for each polynomial, find the remaining zeros.

17) $f(x) = x^3 - 5x^2 + 8x - 4;\ x = 2$

18) $f(x) = x^3 - 3x^2 - 9x - 5;\ x = -1$

19) $f(x) = x^3 + 5x^2 + 7x + 3;\ x = -3$

20) $f(x) = x^3 + 13x^2 - x - 13;\ x = 1$