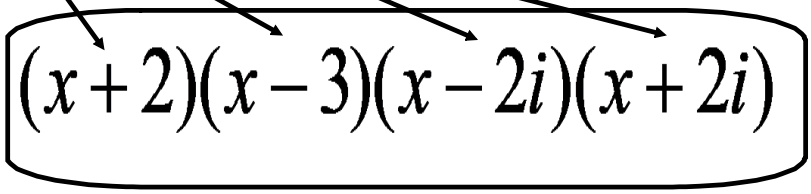
Pre-Calc 2.5b Notes

Fundamental Theorem of Algebra Part II

Recall If x = 4 is a zero, then (x - 4) is the factor

If x = 1+2i is a zero, then 1-2i is also a zero

Recall Write the linear factorization for the given zeros: -2, 3, 2i



Example 1: Find a polynomial function with real coefficients that has the given zeros.

3, 4i, -4i

Example 2: Write a polynomial function that has the given information.

Degree: 4 Zeros: 1, 4, √3i Solution point: f(0)= -6

Example 3: Use the given zero to find all the zeros of the function.

$f(x) = 4x^3 + 23x^2 + 34x - 10$ zero: -3 + i

Example 4: Use a graphing utility to find the real zeros of the function, and then use the real zeros to find the exact values of the imaginary roots.

$f(x) = x^3 + 4x^2 + 14x + 20$

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