

Complex Conjugate Root Theorem

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$$f(x) = a_n x^n + a_{n-1} x^{n-1} + \cdots + a_0$$

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$$f(x) = a_n x^n + a_{n-1} x^{n-1} + \cdots + a_0 \quad (a_i \in \mathbb{R},$$

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$$f(x) = a_n x^n + a_{n-1} x^{n-1} + \cdots + a_0 \quad (a_i \in \mathbb{R}, a_n \neq 0)$$

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$$f(x) = a_n x^n + a_{n-1} x^{n-1} + \cdots + a_0 \quad (a_i \in \mathbb{R}, a_n \neq 0)$$

$$f(z) = 0 \Rightarrow f(\bar{z}) = 0$$

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If $f(x)$ is a polynomial

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If $f(x)$ is a polynomial with real coefficients

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If $f(x)$ is a polynomial with real coefficients, and z is a root

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