Some Title

And Maybe a Subtitle

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Contents

A Title

Contents of the slide

Roots of $f^n(x)$

$$f(x) = (x-\gamma)^2 + \gamma + m$$

- The roots of $f(x)$ are $\gamma \pm \sqrt{-m-\gamma}$
- If β is a root of $f^n(x)$, then $\gamma \pm \sqrt{\beta - m - \gamma}$ are roots of $f^{n+1}(x)$

Observation

For $n > 0$, the roots of $f^n(x)$ are, with n radicals:

$$\gamma \pm \sqrt{-m \pm \sqrt{-m \pm \sqrt{-m \pm \dots \sqrt{-m-\gamma}}}}$$

Roots of $f^n(x)$

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For notational convenience, we define the map $\beta : \Sigma^* \to \mathbb{C}$ where

$$\beta_\epsilon = -\gamma$$
$$\beta_{0s} = \sqrt{-m + \beta_s}$$
$$\beta_{1s} = -\sqrt{-m + \beta_s}$$

For $n > 0$, the roots of $f^n(x)$ are exactly $\{ \gamma + \beta_s \mid s \in \Sigma^n \}$.