$$\alpha(\varepsilon) = \alpha(0) + \varepsilon\alpha'(0)$$

z Taylorra

$\alpha(\varepsilon)$ jest pierwiastkiem F_ε więc

$$f(\alpha(\varepsilon)) + \varepsilon g(\alpha(\varepsilon)) = 0$$

Zróżniczkujmy powyższe równanie (po ε)

$$0 = f'(\alpha(\varepsilon))\alpha'(\varepsilon) + g(\alpha(\varepsilon)) + \varepsilon g'(\alpha(\varepsilon))\alpha'(\varepsilon)$$

Podstawmy $\varepsilon = 0$

$$f'(\alpha(0))\alpha'(0) + g(\alpha(0)) = 0$$

Czyli

$$\alpha'(0) = -\frac{g(\alpha(0))}{f'(\alpha(0))}$$

W naszym prypadku

$$\alpha'(0) = -\frac{4096}{-36} = 114$$

Czyli

$$\alpha(\varepsilon) \approx 4 + 114\varepsilon$$