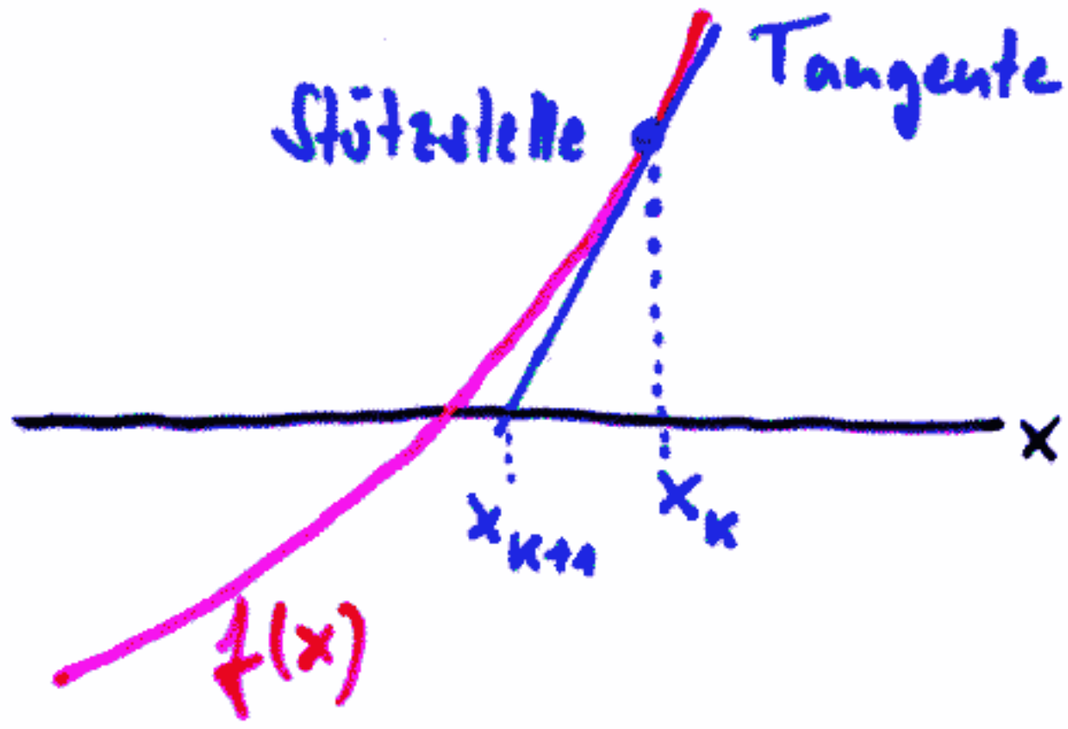
C: Konvergenzanalyse eines Iterationsverfahrens

hier: Newton-Raphson-Methode für Nullstellen



Iterationsvorschrift $x_{k+1} = x_k - \frac{f(x_k)}{f'(x_k)}$

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

$f'(x) = 3x^2$

$x_{k+1} = x_k - \frac{x_k^3 - 1}{3x_k^2}$

$= \frac{2x_k^3 + 1}{3x_k^2}$

Return map

$x_{k+1} = F(x_k)$