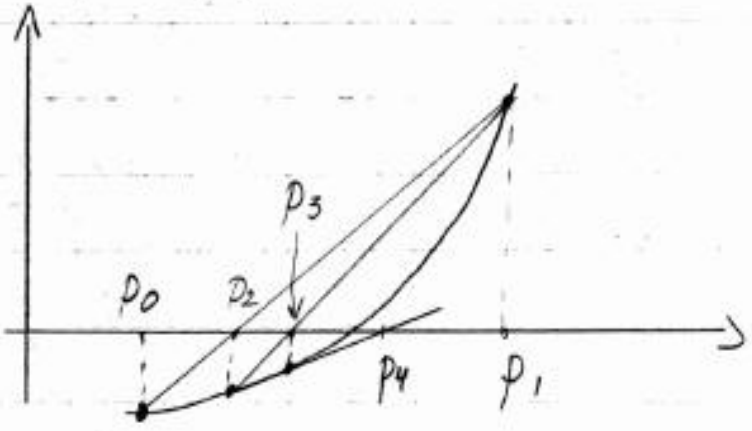
a sequence $\{p_n\}_{n=1}^{\infty}$ converging to p for any $p_0 \in [p-\delta, p+\delta]$.

Ex: give example on last page
Weakness of Newton's method: needs $f'(x)$, which may be difficult to find.

II The Secant method.

The idea of the secant method is to substitute the slope of the tangent line, given by $f'(p_{n-1})$ with the slope of the secant through the points p_{n-2}, p_{n-1}



We take

$$f'(p_{n-1}) \approx \frac{f(p_{n-1}) - f(p_{n-2})}{p_{n-1} - p_{n-2}}$$

Using this approximation in the Newtons formula we get