

$$p \approx \bar{x} - \frac{f(\bar{x})}{f'(\bar{x})}$$

Newton's method: Given  $p_0$ -initial approx.

$$p_n = p_{n-1} - \frac{f(p_{n-1})}{f'(p_{n-1})} \quad \text{for } n \geq 1$$

a) Note: Newton's method is an iteration method

where 
$$p_n = g(p_{n-1})$$

$$g(p_{n-1}) = p_{n-1} - \frac{f(p_{n-1})}{f'(p_{n-1})}$$

b) Note: Newton's method cannot continue if  $f'(p_{n-1}) = 0$  for some  $p_{n-1}$

2) Geometric interpretation of Newton's method

