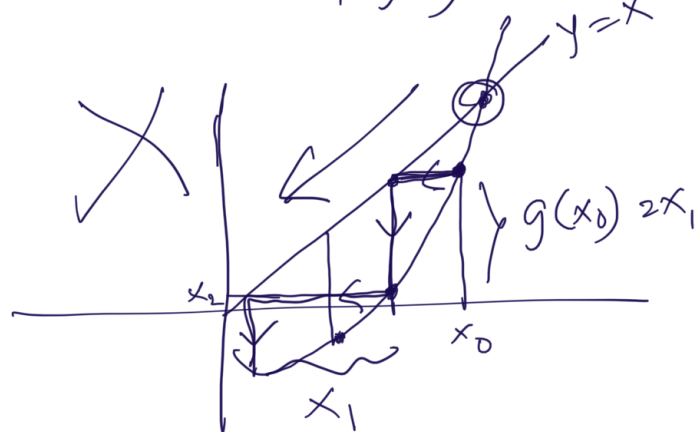
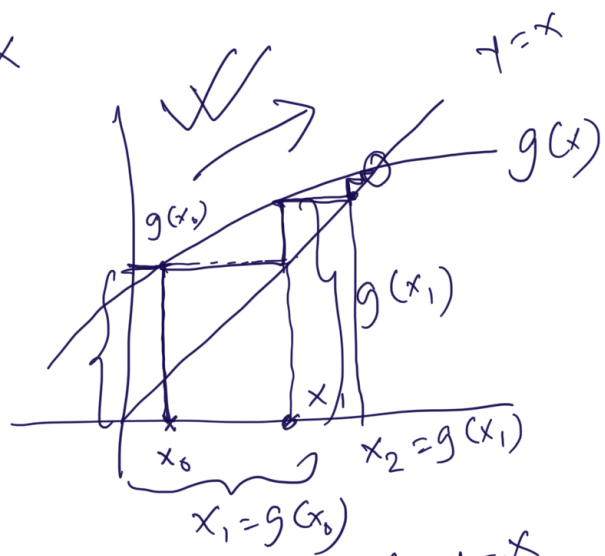


$$\begin{aligned} & \underbrace{f(x)=0}_{\rightarrow x=g(x)} \text{ , for } x \\ & \Rightarrow \underbrace{x \pm f(x)}_{=x} = x \\ & \Rightarrow \underline{g(x)=x} \end{aligned}$$

$$\begin{aligned} x_1 &= g(x_0) \\ x_2 &= g(x_1) \\ x_3 &= g(x_2) \\ & \vdots \end{aligned}$$



$$r = g(r)$$

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

$$e_k = |x_k - r| \quad \text{Error at step } k$$

$$e_{k+1} = |x_{k+1} - r| = |g(x_k) - g(r)|$$

$$= |g'(\xi)(x_k - r)|$$

where ξ is between x_k and r .

Since $g(x_k) - g(r) = g(x_k) - g(r)$, we have:

$$|g(x_k) - g(r)| = |g(x_k) - g(r)|$$