HW 2

WHICH OF THE FOLLOWING ITERATIONS

① $x_{n+1} = g(x_n)$

WILL HAVE $\{x\} \longrightarrow \alpha$

IF IT DOES CONV.

② GIVE THE ORDER

②a IF LINEAR

GIVE RATE OF LINR CONV.

i.e. THE ASYMPTOTIC CONSTANT

③ IF $g'(\alpha) = 0$

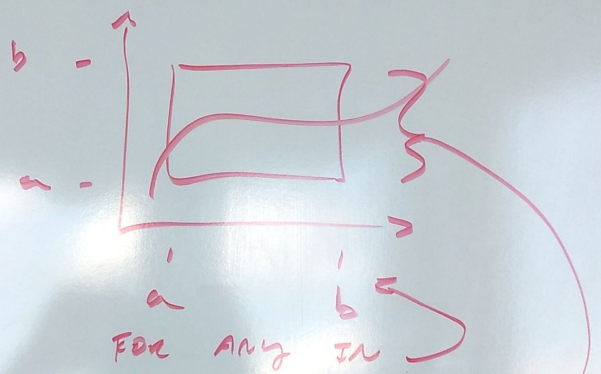
XPND $g(x)$ IN T. POLY ABOUT $x = \alpha$

TO DTRMNE ORDER OF CONV.

② $x_{n+1} = -16 + 6x_n + \frac{12}{x_n} = g(x)$

$\alpha = 2$

DOES $g(x)$ MAP $[a,b]$ INTO $[a,b]$



FOR ANY IN

DO YOU GET SOMETHING IN ?

ASSUME 'SUFFICIENTLY CLOSE'

IS $10^{\pm 1}\alpha \sim$ W/IN

= AN ORDER OF MAG