2.c

$$x_{n+1} = \frac{12}{1 + x_n}, \quad \alpha = 3$$

$$g'(x) = \frac{dg(x)}{dx} = -\frac{12}{(1+x)^2}$$

$$|g'(\alpha)| = \frac{12}{16} \left\{ \begin{array}{l} < 1 \\ \neq 0 \end{array} \right\} \text{ LINEAR CONVERGENCE}$$