

# To find the error bound in fixed point iteration method

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If  $g$  satisfies the hypotheses of Theorem 2.4, then bounds for the error involved in using  $p_n$  to approximate  $p$  are given by

$$|p_n - p| \leq k^n \max\{p_0 - a, b - p_0\} \quad (2.5)$$

and

$$|p_n - p| \leq \frac{k^n}{1 - k} |p_1 - p_0|, \quad \text{for all } n \geq 1. \quad (2.6)$$

This corollary states the maximum error bound for the fixed point iteration scheme. It helps to find the number of iterations in this scheme.

There are some questions in tutorial sheets related to this topic.