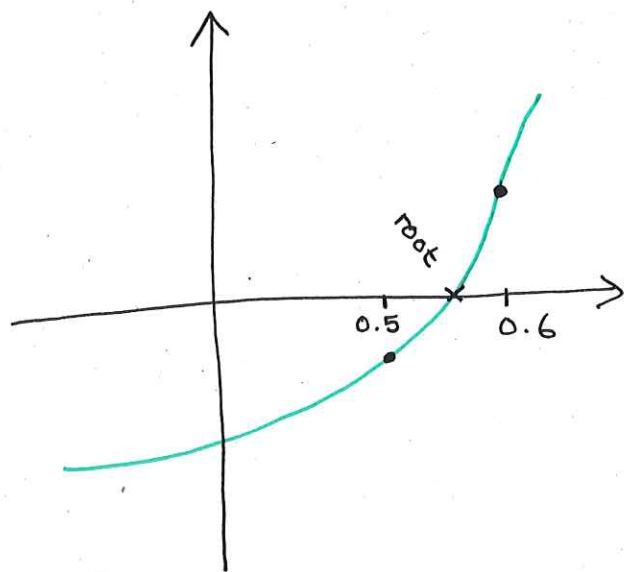


— SHOW A ROOT IS BETWEEN x VALUES



$$f(0.5) = - \text{value}$$

$$f(0.6) = + \text{value}$$

change of sign
 $\therefore$ it is a root

— SHOW A ROOT IS CORRECT TO GIVEN d.p.

$$\text{root } \alpha = 2.307$$

check either side of 2.307

$$f(2.3065) = - \text{value}$$

$$f(2.3075) = + \text{value}$$

change of sign $\therefore$ it is a root

$$2.3065 < \alpha < 2.3075$$

- ITERATION

Use the previous answer to help you get the next

$$x_{n+1} = 2x_n + 4$$

$$x_1 = 3$$

$$x_2 = 2x_1 + 4 = 2(3) + 4 = 10$$

$$x_3 = 2x_2 + 4 = 2(10) + 4 = 24$$

$$x_4 = 2x_3 + 4 = 2(24) + 4 = 52$$

- NEWTON RAPHSON PROCESS

$$x_{n+1} = x_n - \frac{f(x_n)}{f'(x_n)}$$

Example

$$f(x) = x^2$$

$$x_{n+1} = x_n - \frac{(x_n)^2}{2(x_n)}$$