8b

$$f(x) = H(x) + e(x)$$

$$= H(x) + \frac{(x-x_0)^2 (x-x_1)^2}{(2n+2)!} f^{(2n+2)}(\xi)$$

$$\frac{(x-x_0)^2 (x-x_1)^2}{(2n+2)!} f^{(2n+2)}(\xi) = f(x) - H(x)$$

$$\frac{(x-1)^2 (x-3)^2}{4!} \cdot \frac{2}{\xi^3} = f(x) - H(x)$$

$$\xi(x) = \left[\frac{1}{12} \frac{(x-1)^2 (x-3)^2}{f(x) - H(x)} \right]^{1/3}$$

SAY $a = 1, \ b = 3$

$$1 < \xi(x) < 3$$