

$$f(x) = x \sin(x) - 1, \quad a_0 = 0, \quad b_0 = 2 \quad \underline{\text{bisection}} \quad (1)$$

$$f(0) = -1 < 0$$

$$f(2) = 0.818595$$

$$f(x) \text{ for } [0, 2] \text{ calculate } c_0 = \frac{0+2}{2} = 1$$

$$f(1) = -0.158529 < 0$$

$$f(2) = 0.818595 > 0$$

$$[0, 2] \text{ calc.} \Rightarrow [1, 2]$$

$$c_1 = \frac{1+2}{2} = 1.5$$

$$f(c_1 = 1.5) = 0.496242 > 0$$

$$f(1) = -0.158529 < 0$$

$$\Rightarrow [1, 1.5] \text{ calculate } c_2$$

$$c_2 = 1.14157141$$

to solve the equation $x \sin x - 1 = 0$

$$f(x) = x \cdot \sin x - 1 = 0, \quad [0, 2] \text{ bisection}$$

n	a_n	c_n	b_n	$f(c_n)$
0	0	1	2	-0.158529
1	1.0	1.5	2	0.496242
2	1.0	1.25	1.5	0.186231
3	1.0	1.125	1.25	0.015057
4	1.0	1.0625	1.125	-0.071823
5	1.0625	1.0937	1.125	-0.028362
6	1.09375	1.109375	1.125	-0.006643
7	1.109375	1.1171875	1.125	0.004208
8	1.109375	1.11328125	1.1171875	-0.001216