Problem: Find the root of the equation $x^3 + 3x - 5$

Solution:

$a = 1, \quad b = 2$

$f(a) = f(1) = -1, \quad f(b) = f(2) = 9.$

$\therefore f(a) * f(b) = -9 < 0$

$\therefore c = b - (f(b) * (b - a)) / (f(b) - f(a))$

$= 1.1$

Now, $f(a) = -1, \quad f(c) = f(1.1) = -0.369$

$f(a) * f(c) = 0.369$

$\therefore a = c$

$a = 1.1$

$\therefore$ the interval now reduced to $[1, 2]$ to $[1.1, 2]$

Iteration	a	b	function (c)
1	1	2	-0.369
2	1.1	2	-0.129797521
3	1.35446686	2	-0.44868050928
4	1.14773797	2	$-0.015415586 39$
5	1.15196509	2	$-0.00528529 8$
6	1.15345774	2	-0.00180778835
7	1.15391265	2	-0.00062023148
8	1.15408284	2	-0.00021245288
9	1.15414132	2	$-7.275190177 \times 10^{-5}$
10	1.54161097	2	$-2.49160382 2 \times 10^{-5}$
	$\therefore$ Root =	1.541 (approximately)	