$f(y) = \cos y$

$\cos y = 0$

add y to both sides

$\cos y + y = y$

$y_{i+1} = \cos(y_i) + y_i$

1st Iteration $\Rightarrow$ $y_{i+1} = \cos(0.1) + 0.1$

$= 1.05$

2nd $\Rightarrow$ $y_{i+1} = \cos(1.05) + 1.05$

$= 2.05$

3rd $\Rightarrow$ $y_{i+1} = \cos(2.05) + 2.05$

3.05

4th $\Rightarrow$ $y_{i+1} = \cos(3.05) + 3.05$

$= 4.05$

5th $\Rightarrow$ $y_{i+1} = \cos(4.05) + 4.05$

$= 5.05$

$$\text{Error} = \left| \frac{y_{i+1} - y_i}{y_{i+1}} \right| \times 100$$

1st $\Rightarrow$ $\left| \frac{1.05 - 0.05}{1.05} \right| \times 100 = 95.24$

2nd $\Rightarrow$ $\left| \frac{2.05 - 1.05}{2.05} \right| \times 100 = 49.78$

3rd $\Rightarrow$ $\left| \frac{3.05 - 2.05}{3.05} \right| \times 100 = 32.77$

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4th $\Rightarrow \left| \frac{4.05 - 3.05}{4.05} \right| \times 100 = 24.67$

5th $\Rightarrow \left| \frac{5.05 - 4.05}{5.05} \right| \times 100 = 19.77$

Iteration	y	Error	Error
0	0.05	95.24	0
1	1.05	48.78	95.24
2	2.05	32.77	48.78
3	3.05	24.67	32.77
4	4.05	19.77	24.67
5	5.05		19.77

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