

$$f(y) = \cos(y)$$

Given an initial guess, $y = 0.05$

i	y_i	$y_{i+1} = \cos y_i$	$ABSErr = \left \frac{y_{i+1} - y_i}{y_{i+1}} \right \times 100$
0	0.05	$\cos(0.05) = 0.999996192$	94.9999981
1	0.999996192	$\cos(0.999996192) = 0.9998476953$	0.01519471
2	0.9998476953	$\cos(0.9998476953) = 0.9998477415$	4.7×10^{-6}
3	0.9998477415	$\cos(0.9998477415) = 0.9998477415$	0
4	0.9998477415	$\cos(0.9998477415) = 0.9998477415$	0

i	Relative Error = $\left \frac{y_i - 0.999847742}{0.999847742} \right \times 100$
0	$= \left \frac{0.05 - 0.999847742}{0.999847742} \right \times 100 = -94.999 = 94.999$
1	$= \left \frac{0.999996192 - 0.999847742}{0.999847742} \right \times 100 = 0.01519$
2	$= \left \frac{0.9998477415 - 0.999847742}{0.999847742} \right \times 100 = -5.001 \times 10^{-8} = 5.0001 \times 10^{-8}$
3	$= \left \frac{0.9998477415 - 0.999847742}{0.999847742} \right \times 100 = -5.001 \times 10^{-8} = 5.0001 \times 10^{-8}$
4	$= \left \frac{0.9998477415 - 0.999847742}{0.999847742} \right \times 100 = -5.001 \times 10^{-8} = 5.0001 \times 10^{-8}$

The root of the equation = 0.999847742

No2 $f(z) = e^{-15z} - z + \cos(z)$
 $0 = e^{-15z} - z + \cos(z)$
 $z = e^{-15z} + \cos(z)$

Given an initial guess, $z = 0.1$

i	z_i	$z_{i+1} = e^{-15z_i} + \cos z_i$
0	0.1	$= e^{-15(0.1)} + \cos(0.1) = 1.223128637$
1	1.223128637	$= e^{-15(1.223128637)} + \cos(1.223128637) = 0.9997721589$
2	0.9997721589	$= e^{-15(0.9997721589)} + \cos(0.9997721589) = 0.9998480715$
3	0.9998480715	$= e^{-15(0.9998480715)} + \cos(0.9998480715) = 0.999848048$
4	0.999848048	$= e^{-15(0.999848048)} + \cos(0.999848048) = 0.999848048$

i	$ABSErr = \left \frac{z_{i+1} - z_i}{z_{i+1}} \right \times 100$
0	$= \left \frac{1.223128637 - 0.1}{1.223128637} \right \times 100 = 91.82425$
1	$= \left \frac{0.9997721589 - 1.223128637}{0.9997721589} \right \times 100 = 22.34073$
2	$= \left \frac{0.9998480715 - 0.9997721589}{0.9998480715} \right \times 100 = 0.00759$
3	$= \left \frac{0.999848048 - 0.9998480715}{0.999848048} \right \times 100 = 0$
4	$= \left \frac{0.999848048 - 0.999848048}{0.999848048} \right \times 100 = 0$

The root of the equation = 0.999848048