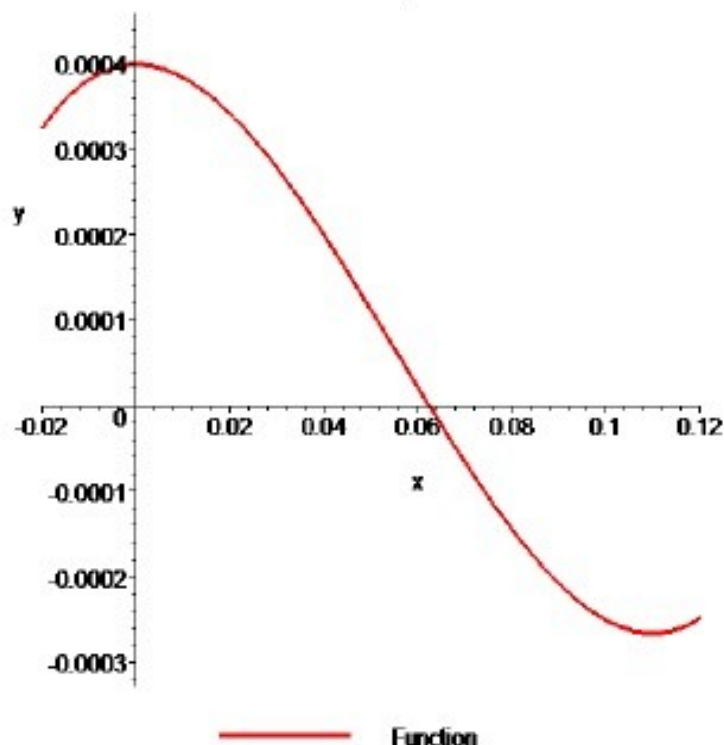




# Graph of function $f(x)$

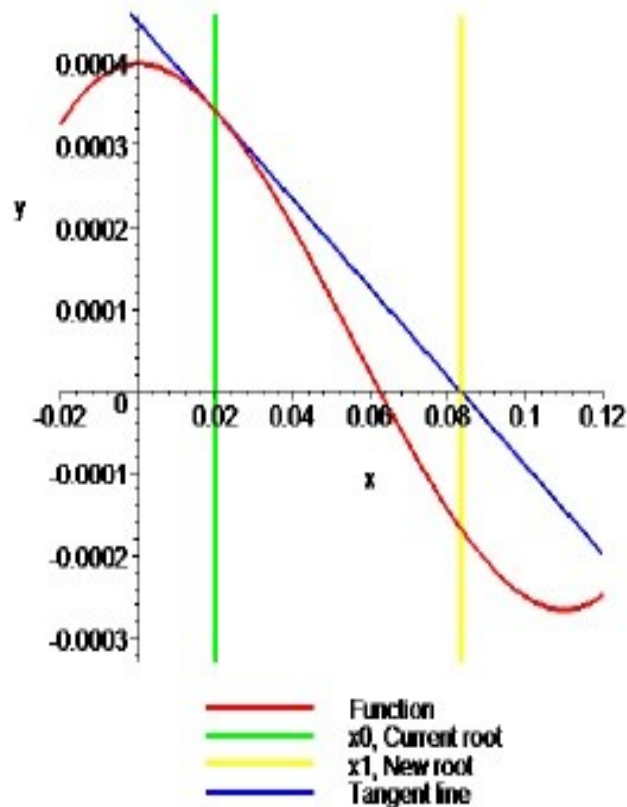
$$f(x) = x^3 - 0.165x^2 + 3.993 \times 10^{-4}$$

Entered function on given interval



# Iteration #1

Entered function on given interval with current and next root  
and tangent line of the curve at the current root



$$x_0 = 0.02$$

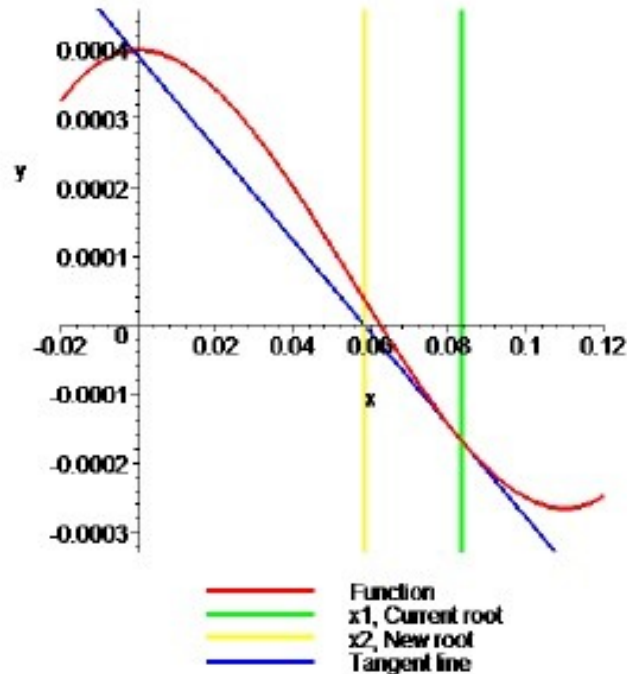
$$x_1 = x_0 - \frac{f(x_0)}{f'(x_0)}$$

$$x_1 = 0.02 - \frac{3.413 \times 10^{-4}}{-5.4 \times 10^{-3}}$$
$$= 0.08320$$

$$|\epsilon_a| = 75.96\%$$

## Iteration #2

Entered function on given interval with current and next root  
and tangent line of the curve at the current root



$$x_1 = 0.08320$$

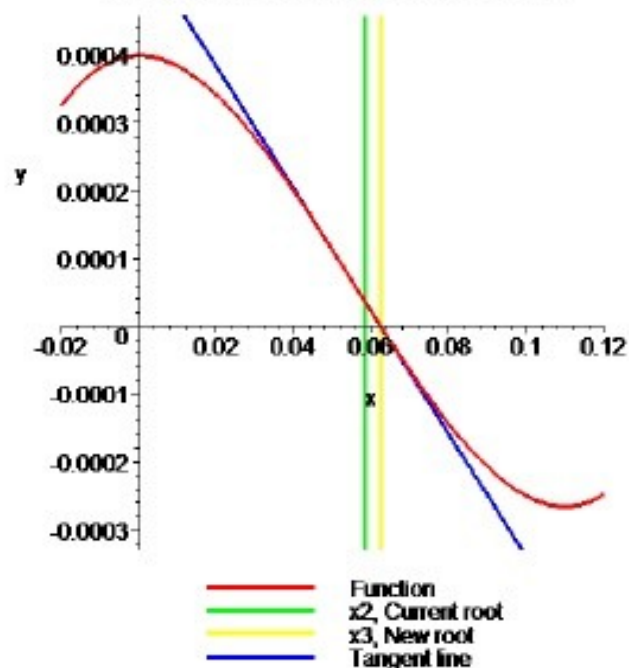
$$x_2 = x_1 - \frac{f(x_1)}{f'(x_1)}$$

$$x_2 = 0.08320 - \frac{-1.670 \times 10^{-4}}{-6.689 \times 10^{-3}}$$
$$= 0.05824$$

$$|\epsilon_a| = 42.86\%$$

# Iteration #3

Entered function on given interval with current and next root  
and tangent line of the curve at the current root



$$x_2 = 0.05824$$

$$x_3 = x_2 - \frac{f(x_2)}{f'(x_2)}$$

$$= 0.05284 - \frac{3.717 \times 10^{-5}}{-9.043 \times 10^{-3}}$$

$$= 0.06235$$

$$|\epsilon_a| = 6.592\%$$



# Advantages

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- Converges fast, if it converges
- Requires only one guess