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1) $f'(x) = \frac{f(x+h) - f(x)}{h}$ $\quad X_{n+1} = X_n - \frac{f(x)}{f'(X_n)}$

$X_0 = 0,6 \quad f(X_0) = -0,500850213658$

$X_1 = 1,132236 \quad f(X_1) = 0,176510956228$

$X_2 = 0,932880 \quad f(X_2) = -0,099654822615$

$f'(X_0) = 0,941030892851$

$f'(X_1) = 0,887413336124$

$f'(X_2) = 1,472995762463$

$X_1 = 1,132236$

$X_2 = 0,932880$

$X_3 = 1,000534$

2) $\int_0^1 x \cos x \, dx \Rightarrow x \sin x + \cos x \Big|_0^1 \Rightarrow \sin 1 + \cos 1 - \cos 0 = 0,841$

a) $\int_0^1 x \cos x \, dx = \frac{\Delta x (0 + 4 \cdot (0,5) \cdot \cos(0,5) + \cos(1))}{6} = \frac{2.295467}{6}$

$= 0,382577$

b) $n = 2 \quad \frac{\Delta x}{4} [0 + 2 \cdot (0,5) \cos(0,5) + \cos(1)] = \frac{1.417884}{4}$

$= 0,354471$