Usual values $\varepsilon y := 0$ $\varepsilon x := 10^{-15}$ $\delta x := 10^{-7}$

function $F(x) := \left| x \cdot \text{BesselJ}(1, x) - 1.01 \cdot \text{BesselJ}(0, x) \right.$

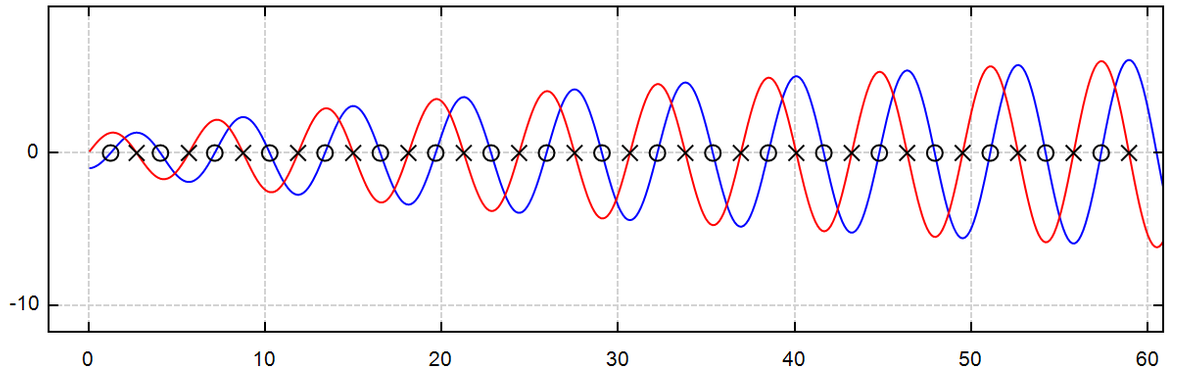
derivative $f(x) := \left| ndiff_1(F, x, \delta x) \right.$

interval $[a\ b] := [0\ 60]$

sub intervals $N := 100$ $X := a + \frac{b-a}{N} \cdot [0..N]$ $n := 0$ $m := 0$

for $k \in [1..N]$
 if $\text{sign}\left(F\left(X_k\right)\right) \cdot \text{sign}\left(F\left(X_{k+1}\right)\right) < 0$
  $xo_{n := n+1} := Bis\left(F, X_k, X_{k+1}, \varepsilon y, \varepsilon x\right)$

for $k \in [1..N]$
 if $\text{sign}\left(f\left(X_k\right)\right) \cdot \text{sign}\left(f\left(X_{k+1}\right)\right) < 0$
  $uo_{m := m+1} := Bis\left(f, X_k, X_{k+1}, \varepsilon y, \varepsilon x\right)$



$\left\{ \begin{array}{l} F(x) \\ f(x) \\ \text{augment}\left(xo, \overrightarrow{F(xo)}, \text{"o"}\right) \\ \text{augment}\left(uo, \overrightarrow{f(uo)}, \text{"x"}\right) \end{array} \right.$

Alvaro

appVersion(4) = "1.0.8253.4763"