SECANT METHOD

Algorithm 1 A Pseudocode for Secant Method

INPUT $f, a, b, nmax, \delta_1, \delta_2$
integer $n, nmax,$ **real** $a, b, fa, fb, \delta_1, \delta_2, d$
external function f
$fa \leftarrow f(a)$
$fb \leftarrow f(b)$
if $|fb| < |fa|$ **then**
  $a \leftrightarrow b$
  $fa \leftrightarrow fb$
end if
OUTPUT $0, a, fa$
OUTPUT $1, b, fb$
for $2 \leq k \leq nmax$ **do**
  if $|fb| < |fa|$ **then**
    $a \leftrightarrow b$
    $fa \leftrightarrow fb$
  end if
  $d \leftarrow (b - a)/(fb - fa)$
  $b \leftarrow a$
  $fb \leftarrow fa$
  $d \leftarrow d \cdot fa$
  $a \leftarrow a - d$
  $fa \leftarrow f(a)$
  OUTPUT n, a, fa
  if $|d| < \delta_1$ **or** $|fa| < \delta_2$ **then**
    OUTPUT "converge"
    RETURN
  end if
end for