



Newton's Method

INPUT initial approximation p_0 ; tolerance TOL; maximum number of iterations N_0 .

OUTPUT approximate solution p or message of failure.

STEP1 Set $i = 1$.

STEP2 While $i \leq N_0$ do STEPs 3-6

STEP3 Set $p = p_0 - f(p_0)/f'(p_0)$.

STEP4 If $|p - p_0| < \text{TOL}$ then
 OUTPUT (p);
 STOP.

STEP5 Set $i = i + 1$.

STEP6 Set $p_0 = p$.

STEP7 OUTPUT('The method failed');
 STOP.