

Newton Raphson

```
from sympy import *
x = symbols("x")
def NewtonRaphson(p0, e, n):
    f = parse_expr(expression)
    for i in range(n):
        d = diff(f, x)
        a, b = N(f.subs(x, p0)), N(d.subs(x, p0))
        if not b: return "/0"
        p = p0 - N(a/b)
        error = abs(1 - N(p0/p))
        if not p0 or error < e: return p
        p0 = p
    return "Failed"
```