```
 1: import sympy as sp
 2: # finite difference
 3: def diff_with_pert(f, xval, pert=0.01):
 4:     global x
 5:     delta_x = pert
 6:     return (f.subs(x, xval + delta_x) - f.subs(x, xval)) / (delta_x)
 7: x = sp.symbols('x')
 8: y = x**4
 9: dydx = y.diff()
10: analytic_ys = [dydx.subs(x, i) for i in my_range()]
11: # ...
12: for pert in np.array([0.01, 0.1, 0.15]):
13:     dydx_finite = diff_with_pert(y, x, pert=pert)
14:     # ...
15:
```