MISSOURI S&T

A Root-Finding Problem

- You are given a routine that returns the pressure (p) of a gas in thermodynamic equilibrium as a function of density (rho) and internal energy (e).

- Form of the routine: press(rho,e)

- However, you know rho and p and need to compute the energy, e. How do you do it?

Secant Method will do well

- Define $f(e_k)$=p-press(rho,e_k)=0
- rho and p are known.
- Guess two starting values for e.
- Apply the Secant method.