

Exercise on function handles

1. Use the function `h_v` to plot the enthalpy as a function of temperature in the interval 250 to 286 C for 70 Bars (7e6 Pa). Note that `h_v` require Pascal and K as input, 0 C = 273.15 K!
2. Write a Newton-Raphson to solve for temperature if the enthalpy is 1200 kJ/kg.

Hint:

$$\begin{aligned}f(x) &= f(x_0) + f'(x_0)(x - x_0) \\f(x) &= 0 \quad \rightarrow \\x &= x_0 - \frac{f(x_0)}{f'(x_0)}\end{aligned}$$

Use finite differences to calculate the derivative:

$$f'(x) \approx (f(x + h) - f(x))/h$$

Also, to make it easier, define `f=@(x) h_v(x,7e6)-1200;`

3. Use `fzero` to solve the same problem as in 2.