Ideal gas **u**, **h**, c_p, c_v relationship

Constant Volume Specific Heat Capacity c_v

$$c_v = \frac{du}{dT}$$

Constant Pressure Specific Heat Capacity, c_p

$$c_p = \frac{dh}{dT}$$

$$du = c_v\, dT$$

$$dh = c_p\, dT$$

$$c_p = c_v + R$$

$$\frac{c_p}{c_v} = k = specific\ heat\ ratio$$

$$c_p = \frac{kR}{k-1}$$

$$c_v = \frac{R}{k-1}$$