Name: _____

# Problem 1

Determine the polytropic index for a process where a fluid goes from an initial state with a pressure 101.325 [kPa] and a volume of 0.5 [m$^3$] to a final state with a pressure of 500 [kPa] and a volume of 0.15 [m$^3$].

# Problem 2

Determine the change in internal energy when air is heated from 298.15 to 600 [K] during a constant volume process.

# Problem 3

Determine the change in internal energy when saturated water vapor is heated from 100 to 150 °C.