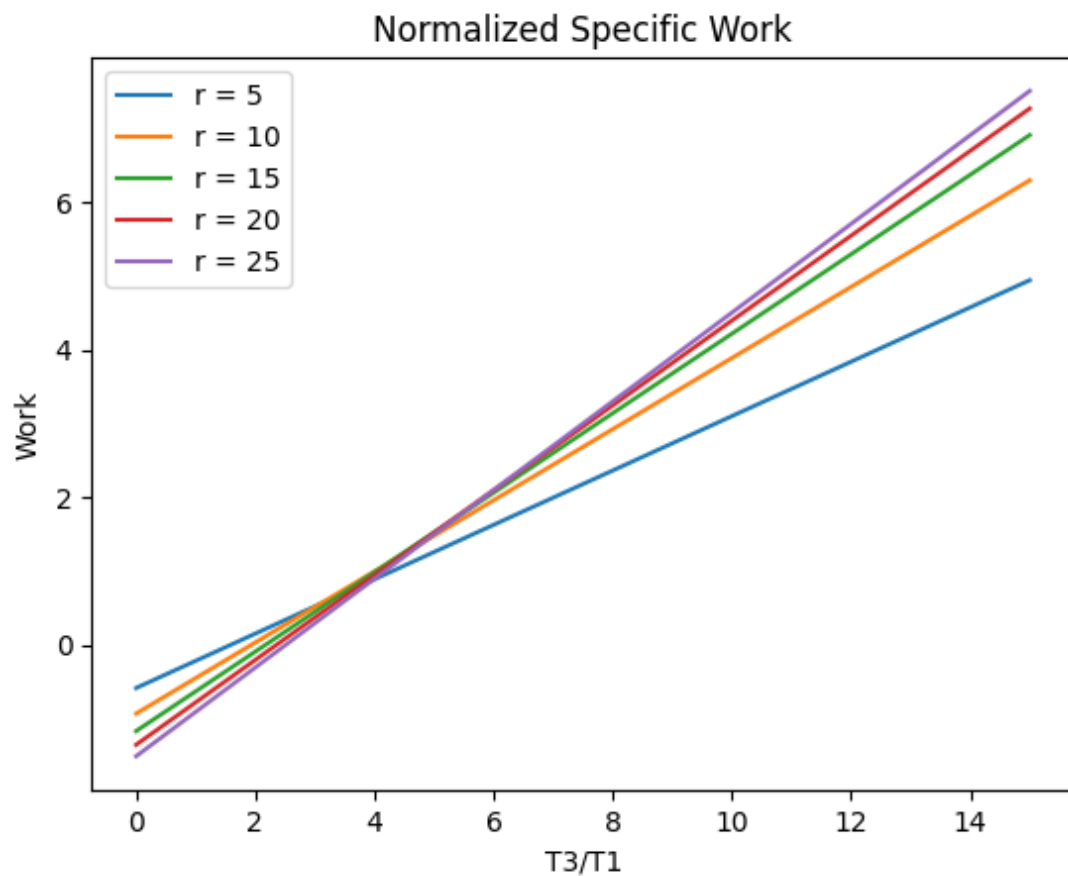1. Create a graphic in a spreadsheet, showing the variaon of the normalized specific work vs pressure rao (r) for different t values (1, 2, 3, 4, and 5). Explain the behavior of the curves based on the technological level of metals. Use: $\gamma = 1.4$ (air).

$$\frac{W_L}{c_p T_{t1}} = t\left[1 - \frac{1}{r^{\frac{\gamma-1}{\gamma}}}\right] - \left[r^{\frac{\gamma-1}{\gamma}} - 1\right]$$

Normalized Specific Work

2. About the text: for a Brayton Cycle, the maximum normalized specific work is obtained when $T_2 = T_4$ (compressor outlet temperature $=$ turbine outlet temperature). Is this true or false?

$$\frac{W_L}{c_p T_{t1}} = t\left[1 - \frac{1}{r^{\frac{\gamma-1}{\gamma}}}\right] - \left[r^{\frac{\gamma-1}{\gamma}} - 1\right] \tag{1}$$

Where: $t = \dfrac{T_{t3}}{T_{t1}}, r^{\frac{\gamma-1}{\gamma}} = \dfrac{T_{t2}}{T_{t1}} = \dfrac{T_{t3}}{T_{t4}}$

$$\frac{W_L}{c_p T_{t1}} = \frac{T_{t3}}{T_{t1}}\left[1 - \frac{T_{t1}}{T_{t2}}\right] - \left[\frac{T_{t2}}{T_{t1}} - 1\right] \tag{2}$$