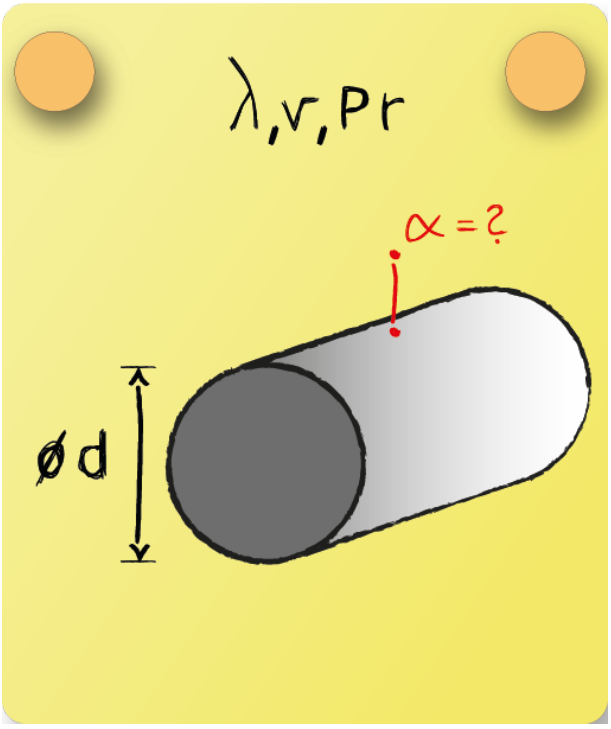
Heat Transfer Correlation: Task 16



The image describes a cylinder of diameter d and a constant temperature T_W which stays stationary in a non-moving ideal gas of temperature T_F.

1 HTC.20: $\overline{Nu_d} = 0.53(Gr_d Pr)^{1/4}$ for $10^4 < G_d Pr < 10^9$ with $\beta = \frac{1}{T_\infty} = \frac{1}{T_F}$ (ideal gas)

2 Results: $Gr_d = 4.23 \cdot 10^6$ $\overline{Nu_d} = 22.1$ $\overline{\alpha} = 5.67$

3 **Important:** Use temperatures in Kelvin!