530 mL Neon 18°C and 1.04 ATM is mixed with 364 mL of SF$_6$ at 18°C and 0.85 ATM in a 250 mL flask. Calculate the partial pressure of each gas.

Answer:

pV=nRT

R = 0.082 L atm K^{-1} mol^{-1}

n (Ne) = pV/RT

$$n(Ne) = \frac{(1.04 \times 0.53)}{(0.082 \times (18 + 273))} = 0.02 \; mol$$

$$n(SF_6) = \frac{(0.85 \times 0.364)}{(0.082 \times (18 + 273))} = 0.01 \; mol$$

p = nRT/V

$$p(Ne) = \frac{0.02 \times (0.082 \times (18 + 273))}{0.25} = 1.9 \; mol$$

$$p(SF_6) = \frac{0.01 \times (0.082 \times (18 + 273))}{0.25} = 0.95 \; mol$$