

### Task#85459

calculate and show solving if the quantity of oxygen occupying a 2.76 litre container at a pressure of 0.825 atmosphere and 300k is reduced by one-half, what is the pressure exerted by the remaining gas.

**Solution:** Temperature of the system(T)=300K

Volume of the system (V)=2.76 lit

Pressure of the system (P)=0.825 atm

Ideal gas law , $PV=nRT$ ,  $n=\frac{PV}{RT}$ ,  $n=\frac{0.825 \times 2.76}{0.082 \times 300}=0.0923$  mol,

If the quantity of gases is reduced to one half of initial amount then, number of moles of gas (n)=0.04615

Final pressure will be  $P=P(\text{initial})/2$  since Temperature and volume of the system is kept constant.  $P(\text{final})=0.4125$ atm,

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