Bls. 79

6.5.2

$V_1 = 0{,}0200\ m^3$

$P_1 = 101\ kPa$

$T = 5°C + 273 = 278\ K$

V_2 ?

$P_2 = 108\ kPa$

$T_2 = 30°C + 273 = 303\ K$

$$\frac{P_1 \cdot V_1}{T_1} = \frac{P_2 \cdot V_2}{T_2}$$

$$V_2 = \frac{P_1 \cdot V_1}{T_1} \cdot \frac{T_2}{P_2}$$

$$= \frac{101\ kPa \cdot 0{,}02\ m^3 \cdot 303\ K}{278\ K \cdot 108\ kPa}$$

$$= \underline{0{,}0204\ m^3}$$

6.5.3

$P_1 = 305\ kPa$

$T_1 = 15 + 273{,}15 = 288{,}15\ K$

$P_2 = 360\ kPa$

T_2 ?

Rúmmál er óbreytt.

$$T_2 = \frac{P_2}{P_1} \cdot T_1 = \frac{360\ kPa \cdot 288{,}15\ K}{305\ kPa}$$

$T_2 = 340\ K$

$= \underline{67°C}$

6.5.4.

$T_1 = 22°C + 273 = 295{,}15\ K = T_2$

$V_1 = 1\ m^3$

$V_2 = \frac{1}{8} m^3$

P_1 = Staðalþrýstingur $= 101325\ Pa = 1\ atm$

P_2 ?

$$P_2 = \frac{P_1 \cdot V_1}{V_2} = \frac{1\ atm \cdot 1\ m^3}{\frac{1}{8} m^3} = \underline{8\ atm = 810600\ Pa}$$

m^3	dm^3	cm^3	
0	0 0 0	0 0 1	3

$$\frac{P_1 V_1}{T_1} = \frac{P_2 V_2}{T_2}$$

6.5.5 bls. 79

$V_1 = 1{,}3\,cm^3 = 1{,}3 \cdot 10^{-6}\,m^3$

$h = 15\,m$

V_2 ?

$T_1 = T_2$

$P_2 = 1\,atm = 101325\,Pa$

$P_1 = 101325\,Pa + \rho \cdot g \cdot h = 101325\,Pa + 1000\,kg/m^3 \cdot 9{,}8\,m/s^2 \cdot 15\,m$

$= 101325\,Pa + 147000\,Pa$

$= 248325\,Pa$

$V_2 = \frac{P_1 \cdot V_1}{P_2}$

$= \frac{248325\,Pa \cdot 1{,}3 \cdot 10^{-6}\,m^3}{101325\,Pa}$

$= 3{,}186 \cdot 10^{-6}\,m^3$

$\simeq 3{,}19\,cm^3$

m^3	dm^3	cm^3	
0	0 0 0	0 0 3	1 8