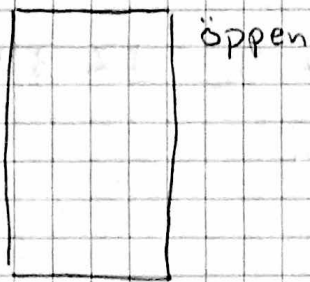
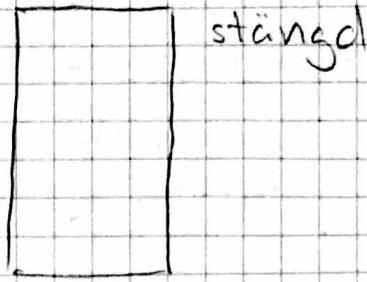


4



öppen



stängd

$$P_1 = 101\,300 \text{ Pa}$$

normalt lufttryck

$$P_2 = ?$$

$$V_1 = V_2 = 350 \text{ liter}$$

$$T_1 = 15^\circ\text{C} = 288 \text{ K}$$

$$+273$$

$$T_2 = -20^\circ\text{C} = 253 \text{ K}$$

$$+273$$

a)

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

samma

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

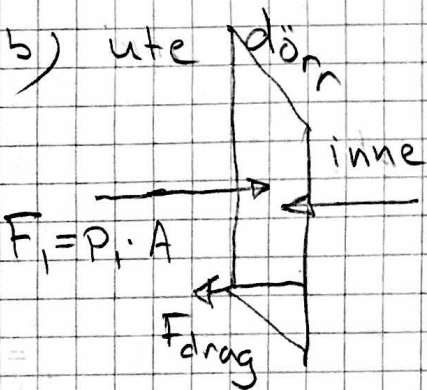
sätt in värdena eller

lös ut P_2

$$P_2 = \frac{P_1 T_2}{T_1} = \frac{101\,300 \cdot 253}{288} \approx \underline{\underline{88\,989 \text{ Pa}}}$$

b) ute

$$A = 1,8 \text{ [m]} \cdot 0,6 \text{ [m]} = 1,08 \text{ m}^2$$



$$F_2 = 88\,989 \cdot 1,08 \approx 96\,108 \text{ [N]}$$

$$F_1 = 101\,300 \cdot 1,08$$

$$= 109\,404 \text{ [N]}$$

Kraftjämvikt \Rightarrow

$$F_2 + F_{\text{drag}} = F_1 \Rightarrow$$

$$F_{\text{drag}} = F_1 - F_2$$

$$= 109\,404 - 96\,108 = 13\,296 \text{ [N]}$$

c) Undertryck

$$P_1 - P_2 = 101\,300 - 88\,989 = 12\,311 \text{ Pa}$$

↑ ↑
normalt tryck i
lufttryck fryg

SVAR: A) 89 kPa
B) 13 kN
C) 12 kPa