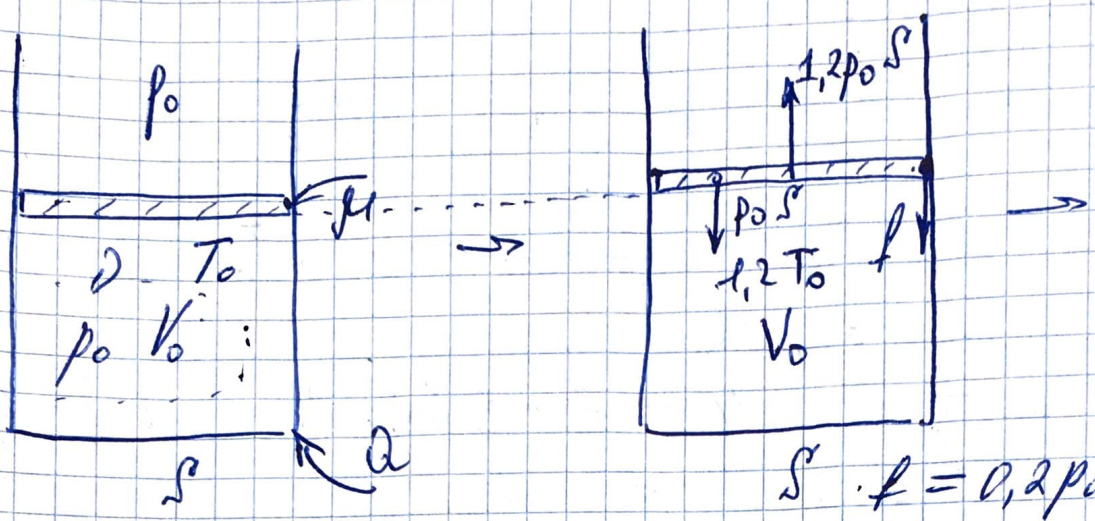
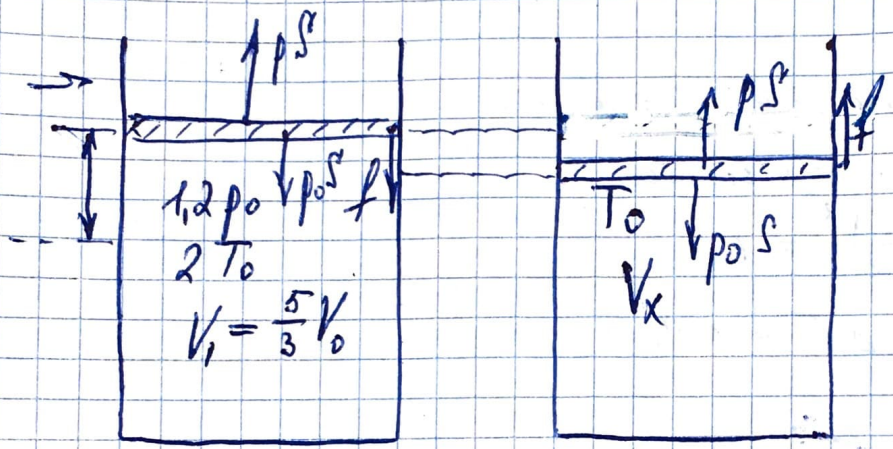
Задача 29



$$S \cdot l = 0,2 p_0 S$$

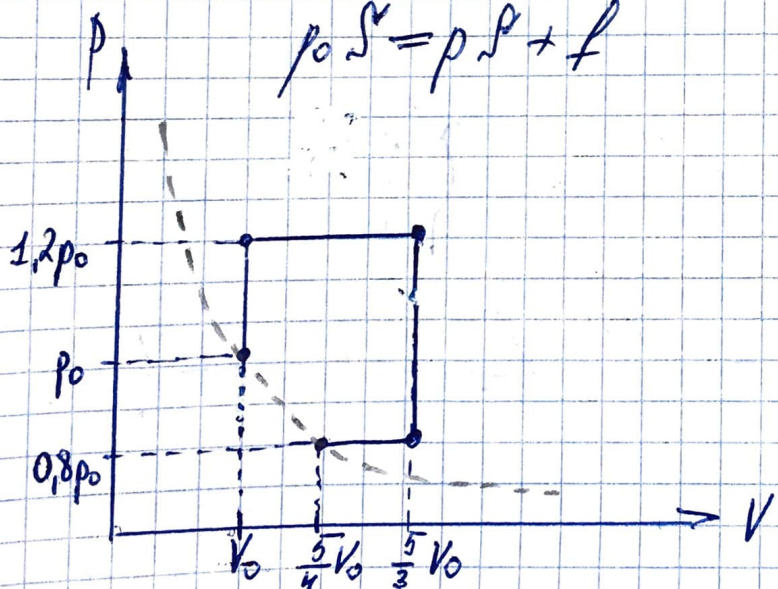


$$p_0 S = pS + f$$

$$0,8 p_0 V_x = \nu R T_0$$

$$p_0 V_0 = \nu R T_0$$

$$V_x = \frac{V_0}{0,8} = \frac{10 V_0}{8} = \frac{5}{4} V_0$$



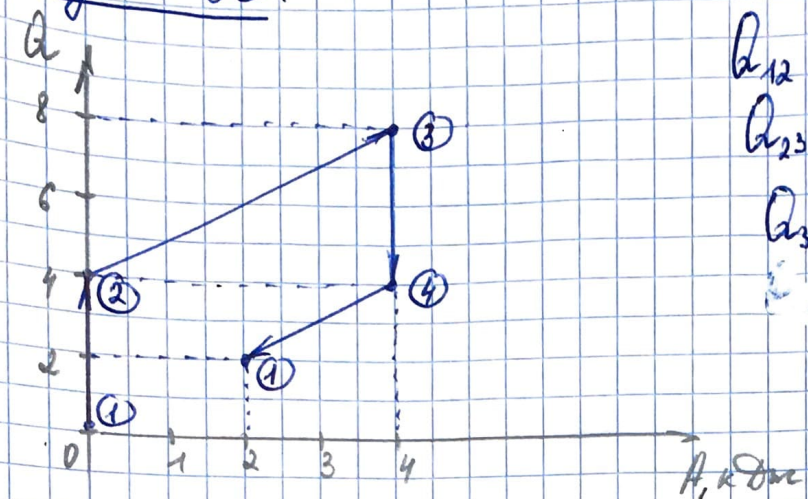
$Q_{12} = C_v \nu 0{,}2 T_0$

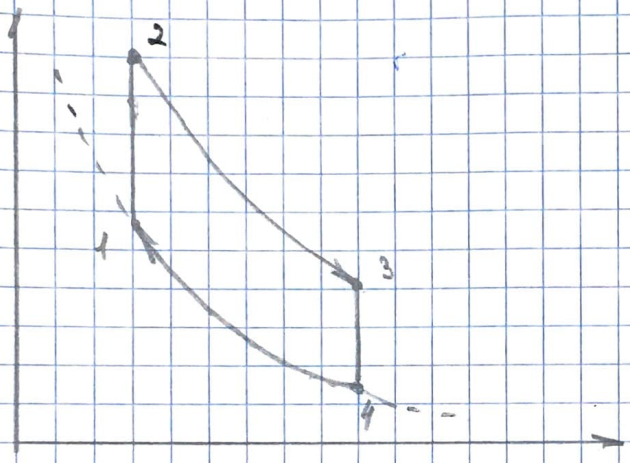
$Q_{23} = C_p \nu 0{,}8 T_0$

$= 2{,}3 \nu R T_0$

$+ \quad Q = \nu R T_0 \left(\frac{i}{2} \cdot 0{,}2 + \frac{i+2}{2} \cdot 0{,}8\right) =$

Задача 30.





$Q_{12} = \Delta U_{12} = \frac{i}{2} \nu R (T_2 - T_1)$

$Q_{23} = A_{23}$

$Q_{34} = \Delta U_{34} = \frac{i}{2} \cdot \nu R (T_1 - T_2)$

$\frac{A_{23}}{A_{41}} = -2$

$\frac{\Delta U_{12}}{\Delta U_{34}} = -1$

$A_{23} = \nu R \cdot T_2 \ln \frac{V_3}{V_2}$

$A_{41} = \nu R T_1 \ln \frac{V_1}{V_4}$

$-2 = \frac{T_2}{T_1} (-1)$

$T_2 = 2 T_1$