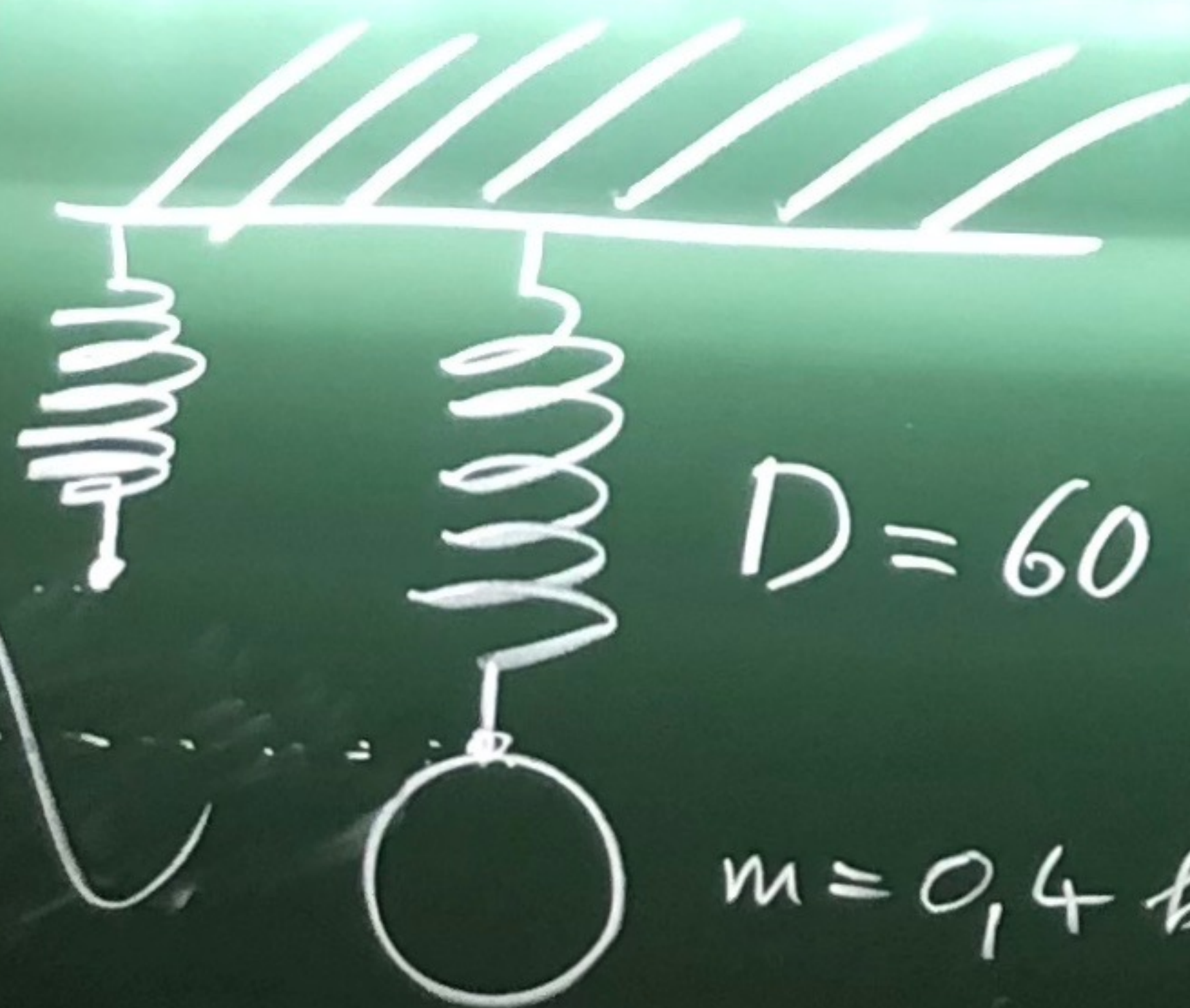
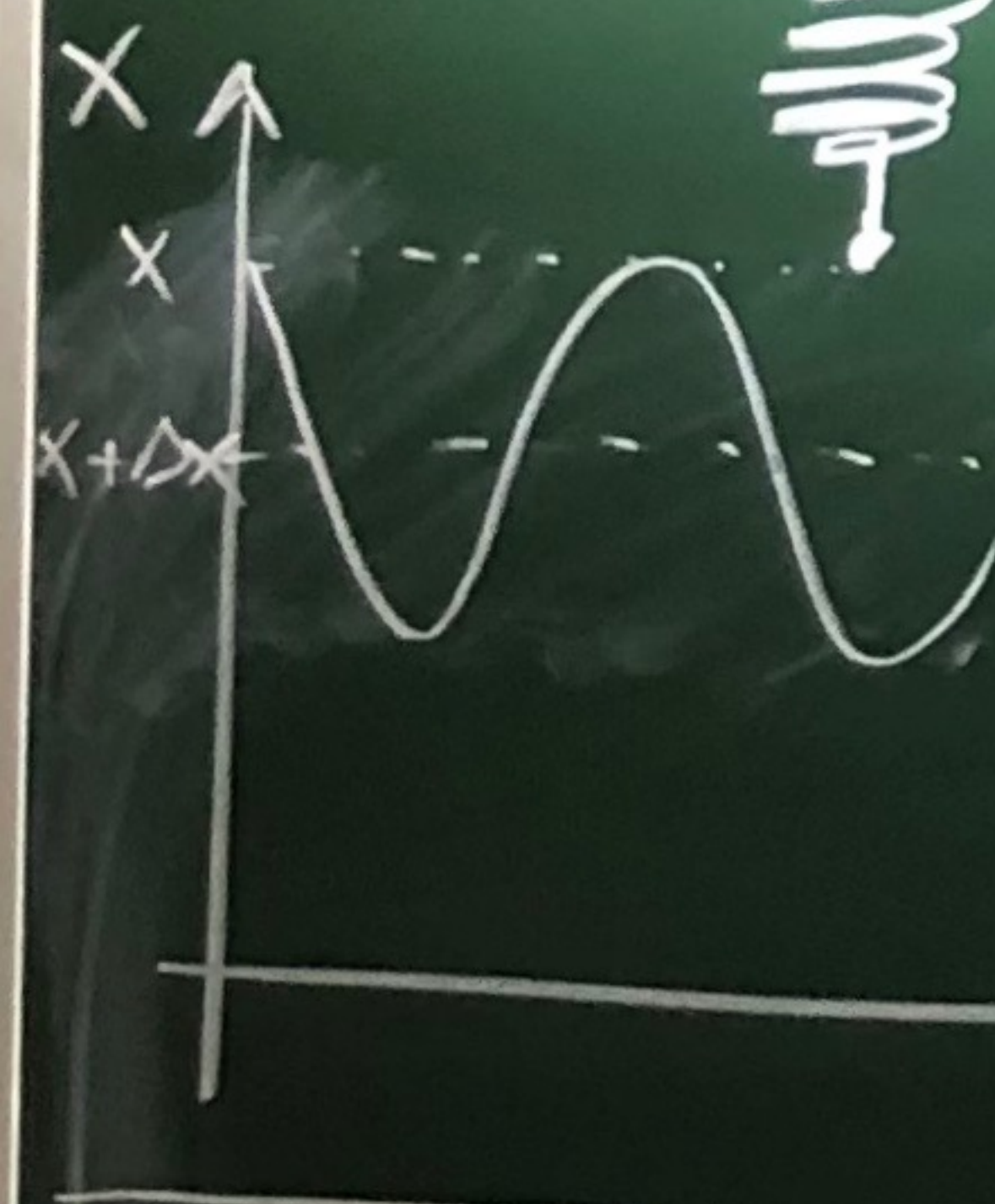


7/15



$D = 60 \frac{N}{m}$

$m = 0,4 \text{ kg}$

a) x (ohne Masse)
 $x + \Delta x$ (mit Masse, in Ruhe)

$D = \frac{\Delta F}{\Delta x} \rightarrow \Delta x = \frac{\Delta F}{D} = \frac{m \cdot g}{D} = \frac{0,4 \text{ kg} \times 9,81 \frac{m}{s^2}}{60 \frac{N}{m}} = 0,0654 \text{ m} = \underline{\underline{6,54 \text{ cm}}}$

$\left(\frac{N}{m}\right) = k \cdot \frac{m}{\Delta x} = m$

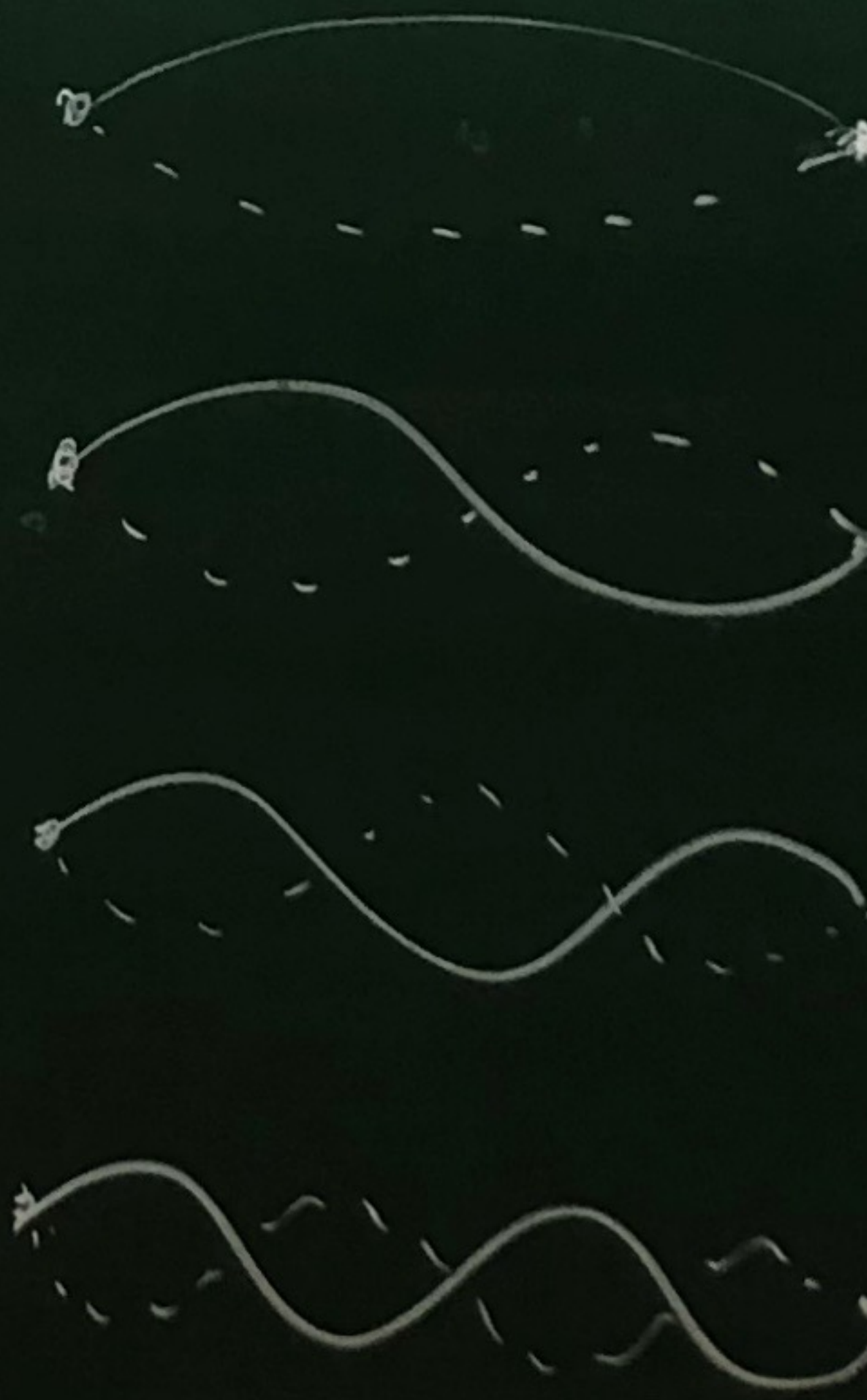
8/5) $\lambda = 252 \text{ nm} = 252 \times 10^{-9} \text{ m}$
 $c = \lambda \cdot f \rightarrow f = \frac{c}{\lambda} = \frac{3 \times 10^8 \frac{m}{s}}{252 \times 10^{-9} \text{ m}} = \underline{\underline{1,19 \times 10^{15} \text{ Hz}}}$
 $c = 3 \times 10^8 \frac{m}{s}$

8/14

$l = 20 \text{ cm}$

40 cm ist
 nur mit

C: 5 cm
 teibar!



$\lambda = l \cdot 2$

$\lambda_0 = l \cdot 2$

$\lambda = l \cdot \frac{2}{2}$

$\lambda_2 = l \cdot \frac{2}{2}$

$\lambda = l \cdot \frac{2}{3}$

$\lambda_3 = l \cdot \frac{2}{3}$

$\lambda = l \cdot \frac{2}{4}$

$\lambda_4 = l \cdot \frac{2}{4}$

$\lambda_4 = l \cdot \frac{2}{4} = \frac{40 \text{ cm}}{2}$

9/12 | $pV = nRT$

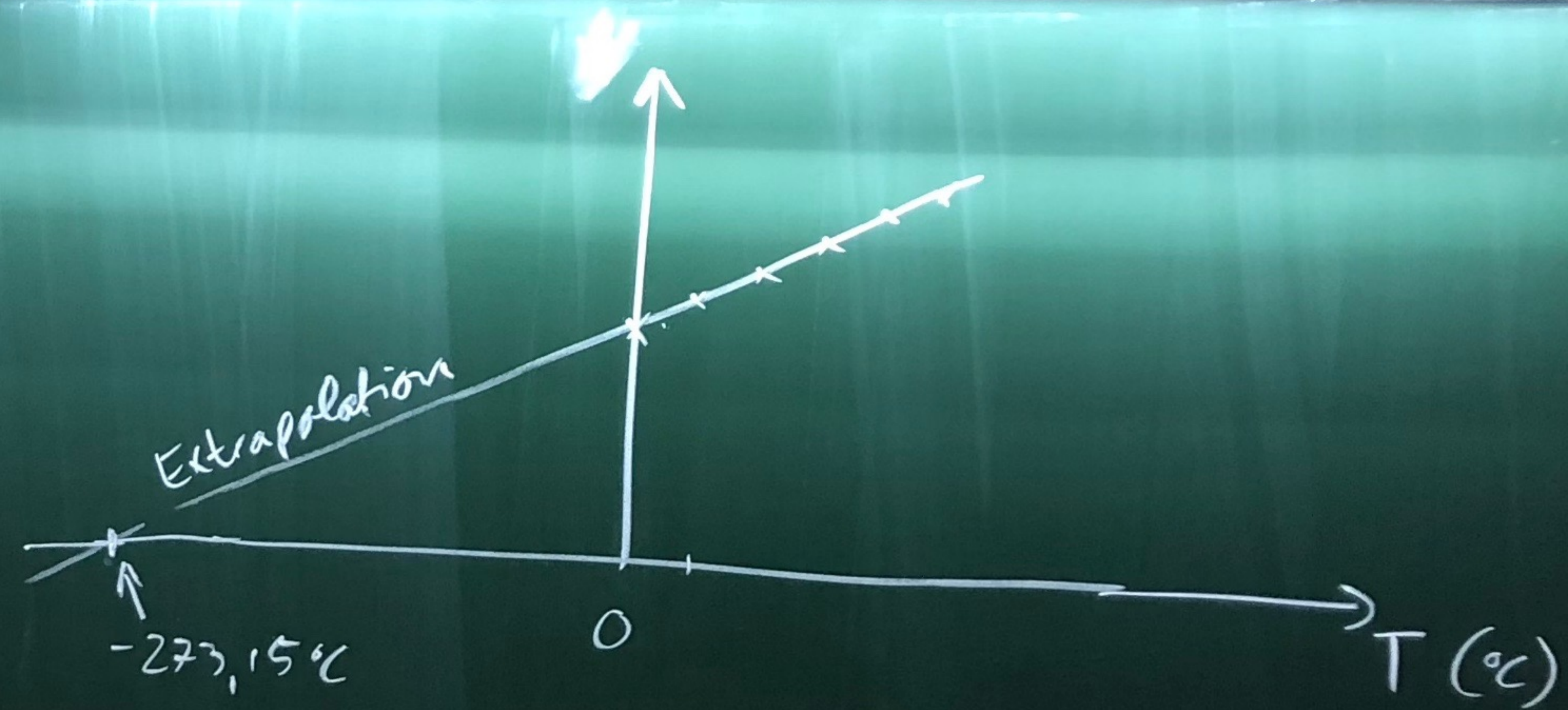
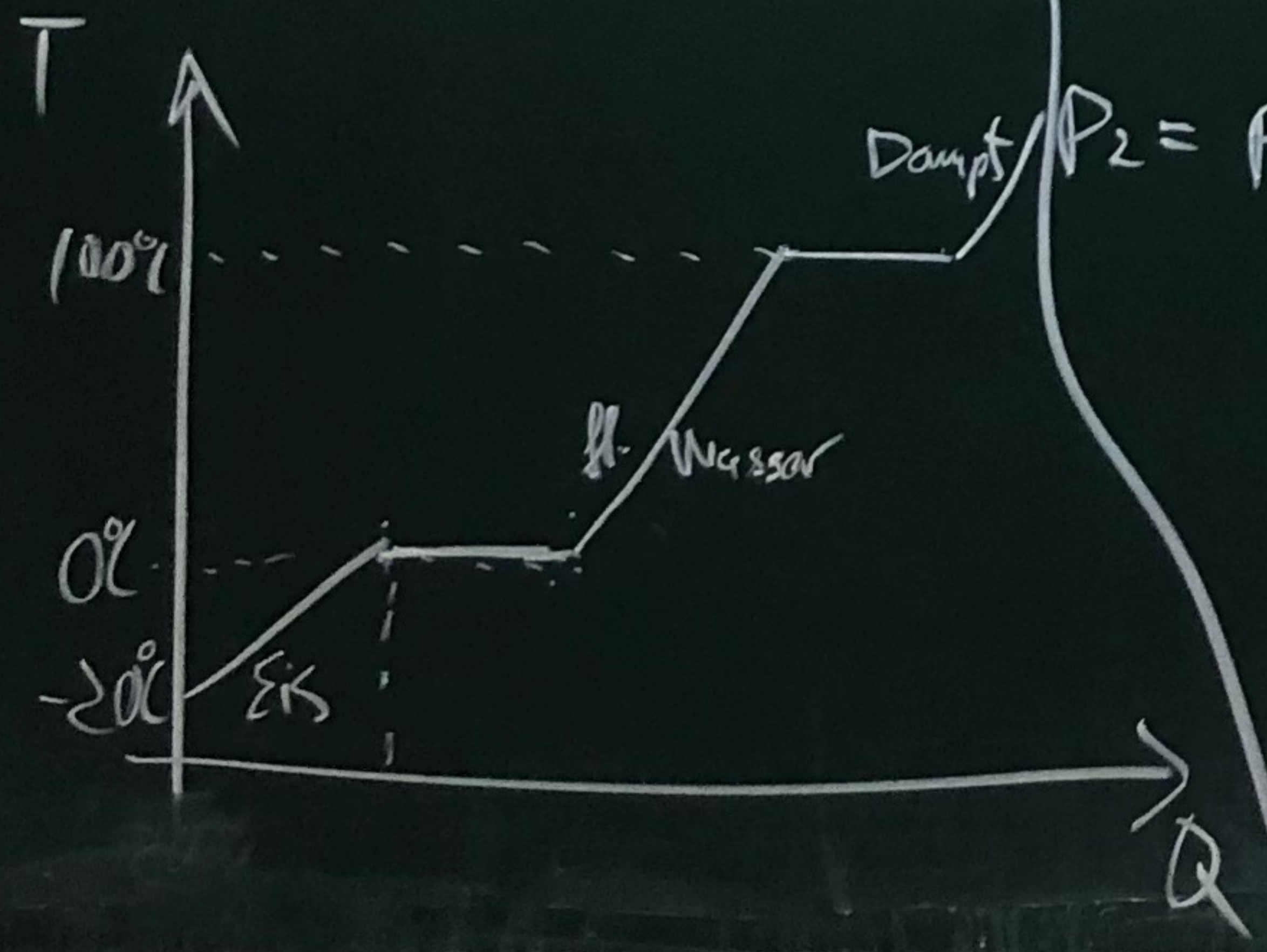
$n = \text{konst.}$ $p \uparrow$
 $V = \text{konst.}$ $T \uparrow$

$\Delta T = (72 - 12)^\circ\text{C} = 60^\circ\text{C} = 60\text{K}$

$p_1 V = n R T_1$
 $p_2 V = n R T_2$
 $\rightarrow \frac{p_1 V}{p_2 V} = \frac{n R T_1}{n R T_2}$

$\frac{p_1}{p_2} = \frac{T_1}{T_2}$
 $p_2 = p_1 \cdot \frac{T_2}{T_1} = 50 \text{ bar} \cdot \frac{(72 + 273)\text{K}}{(12 + 273)\text{K}} = \underline{\underline{60,5 \text{ bar}}}$

Wasser:

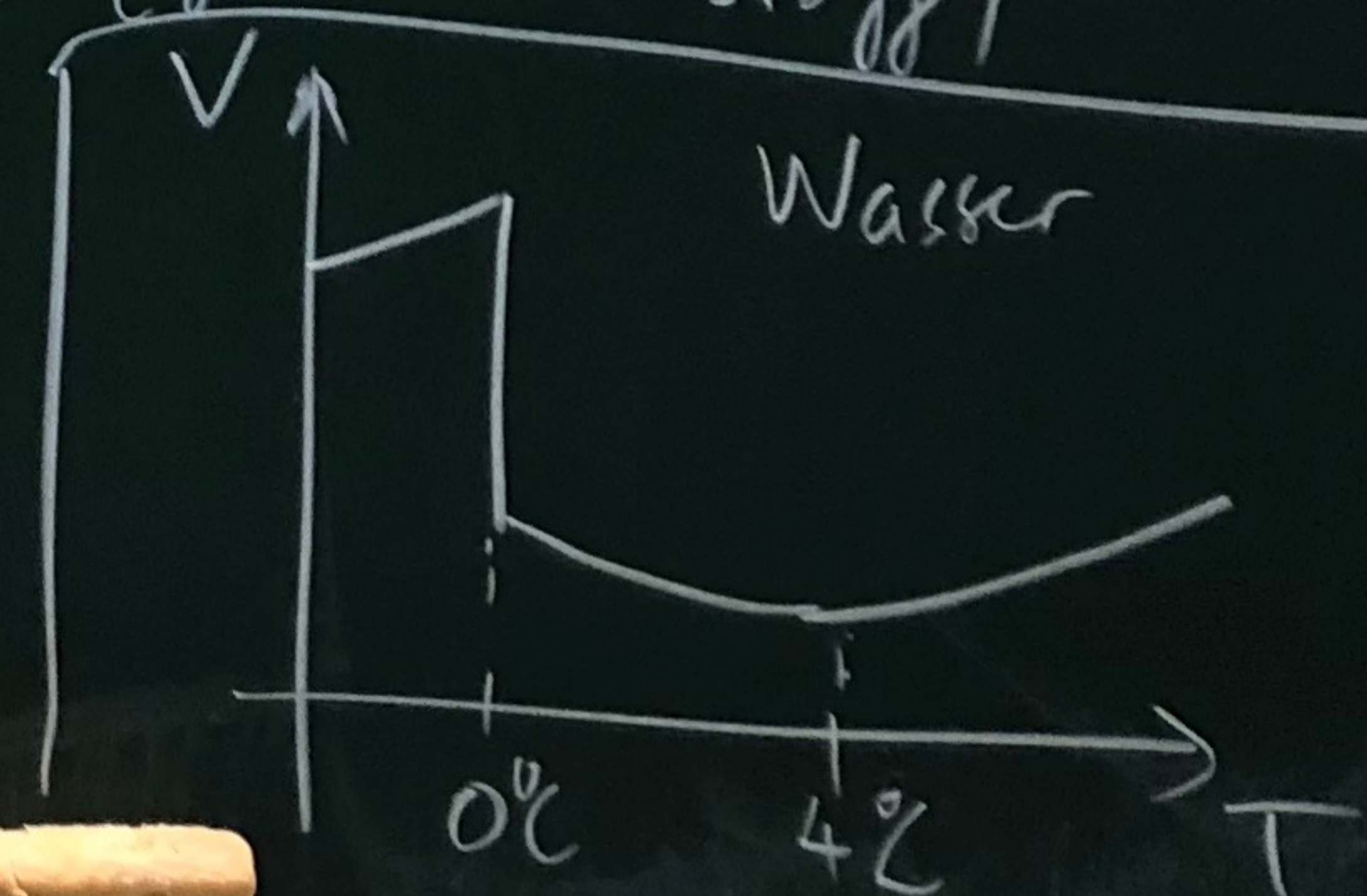


$Q \sim m \cdot \Delta T$ Temperatur & Wärme

$Q = C \cdot \Delta T$ (für einen Gegenstand)

$Q = c \cdot m \cdot \Delta T$ (für einen Stoff)

$c = \frac{C}{m}$



$$F = G \cdot \frac{m_1 \cdot m_2}{r^2}$$

$$|F| = k \cdot \frac{q_1 \cdot q_2}{r^2}$$

$$E = \frac{F}{q_1} = k \cdot \frac{q_2}{r^2}$$

d. Feldstärke ^{Punktformige}

$$E = \frac{F}{q} \quad [E] = \frac{[F]}{[q]} = \frac{N}{C} \quad [q] = C$$

$$U_{2,1} = \frac{W_{el,2,1}}{q} = E \cdot \Delta s$$

$$\varphi = \frac{E_{\text{lage}}}{q}$$

$$W_{el} = F_{el} \cdot \Delta s = E \cdot q \cdot \Delta s$$

$$[U] = \frac{[W]}{[q]} = \frac{J}{C} = V$$

