Physik - Seminar 2

1.
$$geg.:$$
 $(v_{ins})^2 = \int_0^2 v^2 (v) dv$

$$E(x) := \int_0^2 e^{-\alpha v^2} dv = \sqrt{\frac{\pi}{\alpha}}$$

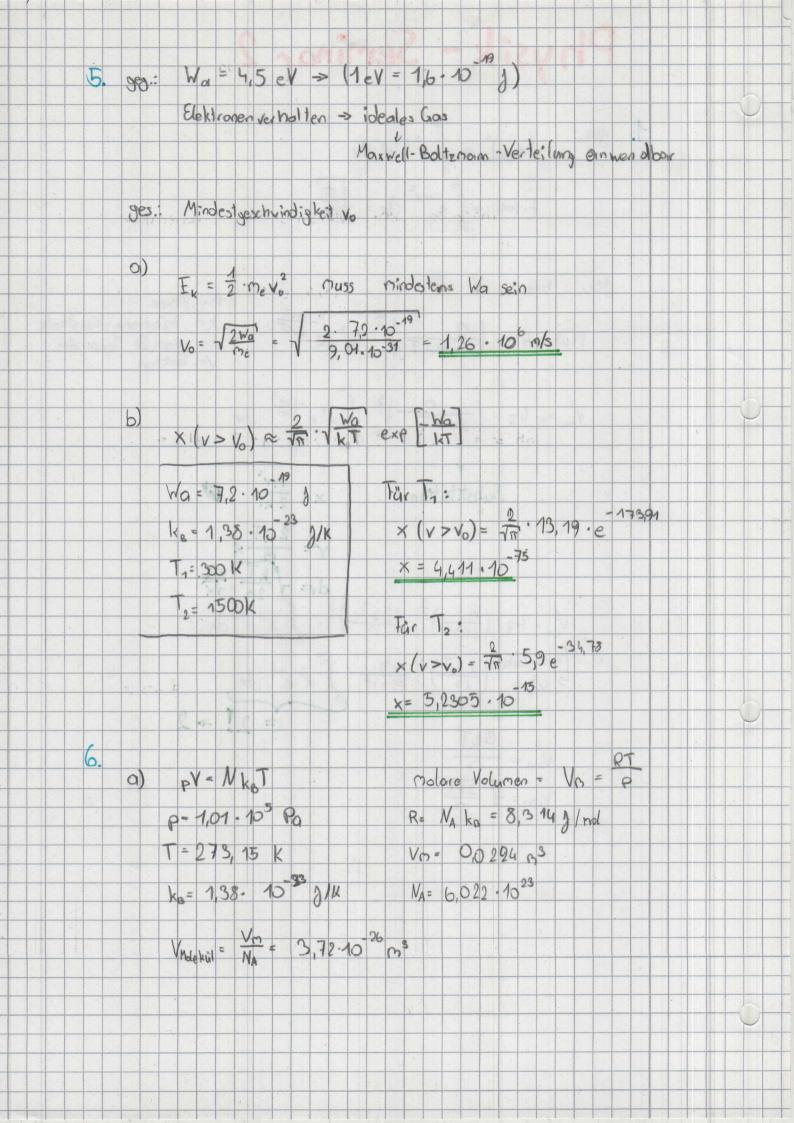
ges.. V_{rms}

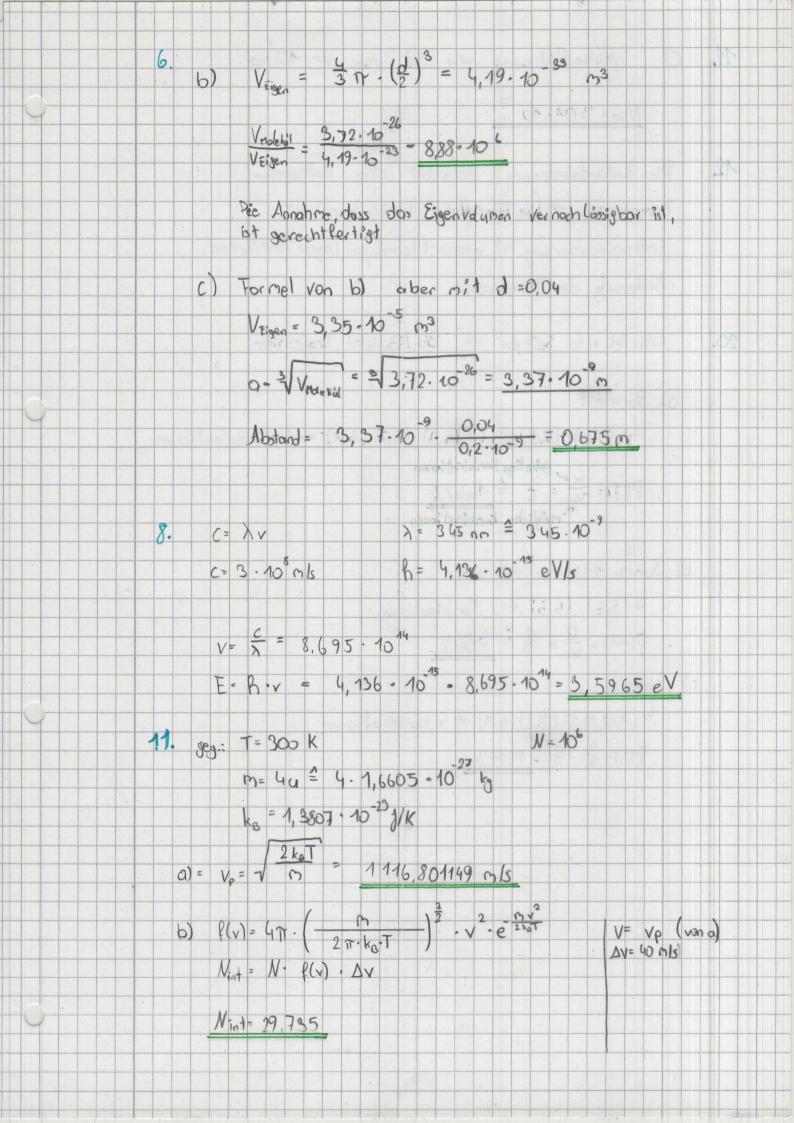
$$f(v) = 4 \pi \cdot \left(\frac{m}{2 \pi k T}\right)^{\frac{3}{2}} v^{2} e^{-\frac{mv^{2}}{2kT}} k = \frac{m}{2 \pi k T} \frac{m}{\sqrt{e}} \frac{m}{2 \pi k T} v^{2} e^{-\frac{mv^{2}}{2kT}} v^{2} e^{-\frac{mv^{2}}{2kT$$

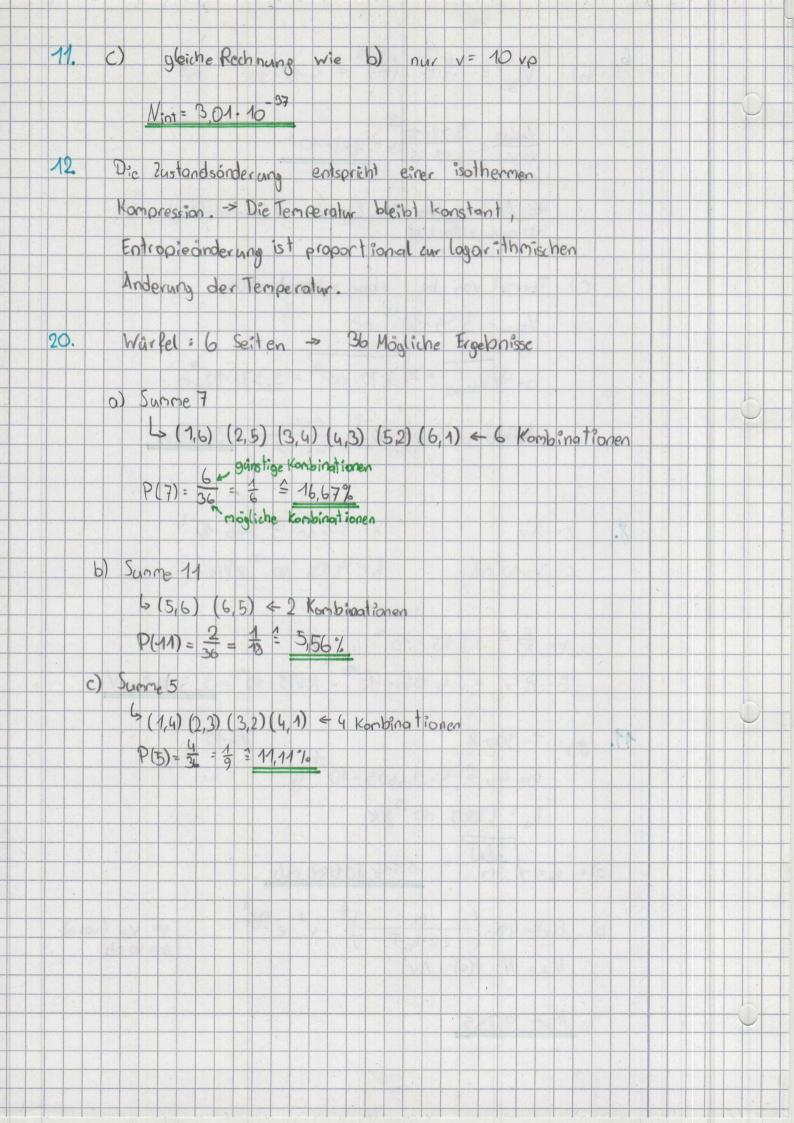
Substitution
$$x = \frac{mv^2}{2kT}$$
 $v^2 = \frac{2kT}{2m}$
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$$V_{CDS} = \frac{3kT}{CS}$$

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23. a)
$$\lambda = \frac{1}{\sqrt{2}} \frac{1}{\sqrt{2}$$

AT= T1-T2: 20K

b) N= P = 17,92