Untitled

February 7, 2023

1

1.1

```
-------------------------------------------------------------------------------
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| H |  1.0  |  2.0  |  3.0  |  4.0  |  5.0  |  6.0  |  7.0  |  8.0  |  9.0  |
10.0  |
-------------------------------------------------------------------------------
-----
| M |  1.0  |  3.0  |  5.0  |  7.0  |  9.0  | 11.0  | 13.0  | 15.0  | 17.0  |
19.0  |
-------------------------------------------------------------------------------
-----
```
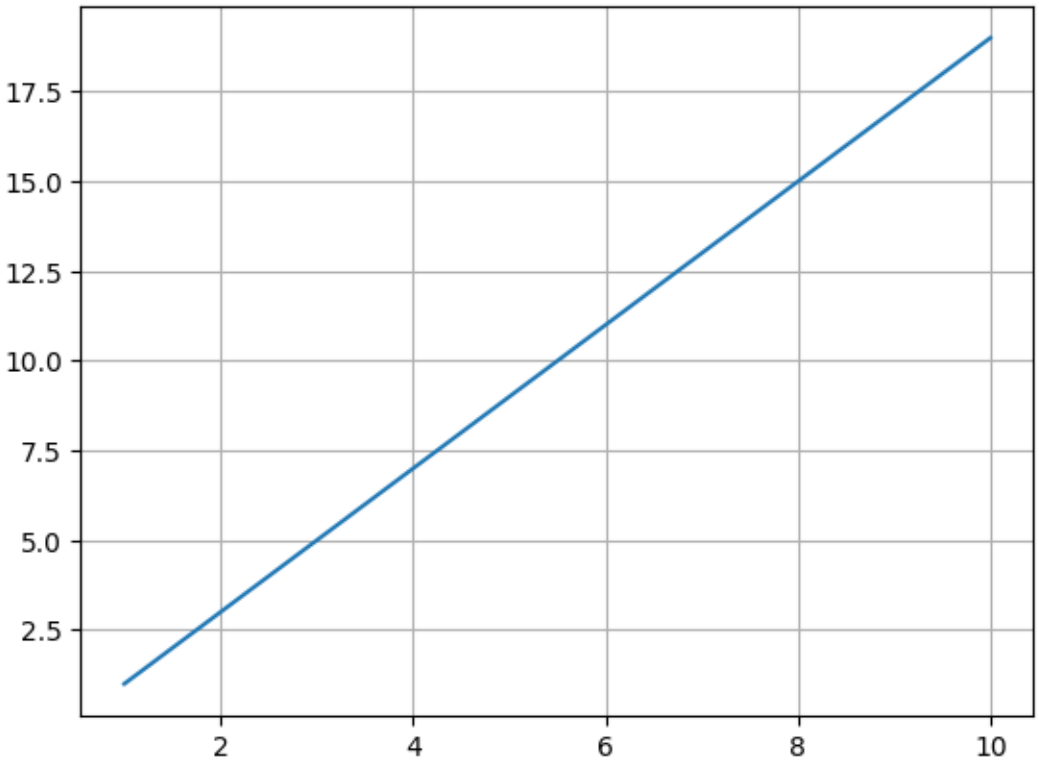

T: 280



$$M_L = \rho \sum_{k=1}^{I} \mu_k p_k L(\frac{\mu_0 \mu_k H}{k_B T})$$

: * ρ - * I - , * $p_k = \frac{\rho_k}{\rho}$ - k- * $L(z) = \coth z - \frac{1}{z}$ - * μ_0 - * k_B - * T -

. :

```
: 293 K
mu: 1e-19  ²
H: 100  /
ro: 100000000000000000000 1/ ^3
```

:

H	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1
M	0.05263	0.15789	0.26316	0.36842	0.47368	0.57895	0.68421	0.78947	0.89474	1.0

```
M: 19.0  /
```

, - , - :

$$\tilde{M_L} = \frac{\rho_* \mu_*}{M_*} \tilde{\rho} \sum_{k=1}^{I} p_k \tilde{\mu_k} L(\frac{\mu_0 \mu_* H_*}{k_B T} \tilde{\mu_k} \tilde{H})$$

: * $a = \frac{\rho_* \mu_*}{M_*}$ * $b = \frac{\mu_0 \mu_* H_*}{k_B T}$

:

$$\tilde{M_L} = a \tilde{\rho} \sum_{k=1}^{I} p_k \tilde{\mu_k} L(b \tilde{\mu_k} \tilde{H})$$

$\mu_0 = 1.256637 * 10^{-6}$ H/A^2

$k_B = 1.380649 * 10^{-23}$ /

```
a  b:
a: 52.63157894736842
b: 0.003250637407273163
```