

Lenovo

Введите здесь текст для поиска



Tsunami

$N^{\frac{0}{13}}$

$$u_H = 2,9$$

$$I_H = 2,2$$

$$N_H = 1500$$

$$M = 0,048$$

$$K_H = 7,2$$

$$M_H = 0,03$$

$$P_{+} = 1$$

$$I_{\text{ан}} = I_H - I_{\text{ан}} = I_H - \frac{u_H}{P_{\text{ан}}} = 2,2 - \frac{2,9}{0,03} = 2,2 - 96,67 = -94,47$$

$$P_{2H} = M_H \cdot N_H = 0,03 \cdot 1500 = 45$$

$$P_{1H} = I_H \cdot u_H = 2,2 \cdot 2,9 = 6,38$$

$$P_{+} = I_H^2 \cdot N_H = 2,2^2 \cdot 1500 = 7,4 \cdot 1500 = 11100$$

$$N3 \quad U_{ном} = 24 \text{ В} \quad I_{ном} = 2 \text{ А} \quad n_{ном} = 1000 \frac{\text{об}}{\text{мин.}}$$

$$M_{ном} = 4,8 \cdot 10^{-2} \quad r_a = 1,2 \text{ Ом}$$

$$\eta = 700 \frac{\text{об}}{\text{мин}}$$

$$r_g = ?$$

$$n_{ном} = \left[n_e = \frac{U_{ном} - I_a(r_a)}{C_E \Phi} \right] \quad \times$$

$$n_u = \frac{U_{ном} - I_a(r_a + r_g)}{C_E \Phi}$$

$$n_u = \frac{n_{ном} \cdot [U_{ном} - I_a(r_a + r_g)]}{[U_{ном} - I_a(r_a)]} \quad \Rightarrow$$

$$\Rightarrow r_g =$$

$$C_E \Phi = \frac{U_n - I_{аном}(R_a)}{n_n}$$

$$C_M \Phi = \frac{M_n}{I_{ан.}}$$

$$\eta = \frac{U_n}{C_E \Phi} - \frac{\frac{M_n}{I_{ан.}}(R_a + R_g)}{C_M C_E \Phi^2}$$

$$\Rightarrow R_g = \dots$$

$$n_{xx} = \frac{U_n}{C_E \Phi}$$

№4

$$n = \frac{U}{\alpha} - \frac{r_a M}{\alpha \beta}$$

$$\alpha = 0,04$$

$$\beta = 0,023$$

$$r_a = 1,1 \quad U_{224}$$

$$M = 4,8 \cdot 10^{-2}$$

$$n_{\text{гашение}} = (\quad)$$

$$n_{xx1} = \dots$$

$$n_{xx2} = \dots$$

$$n_{\text{нон}} = \frac{U}{0,7\alpha} - \frac{r_a M}{\alpha \beta (0,7)^2}$$

№10

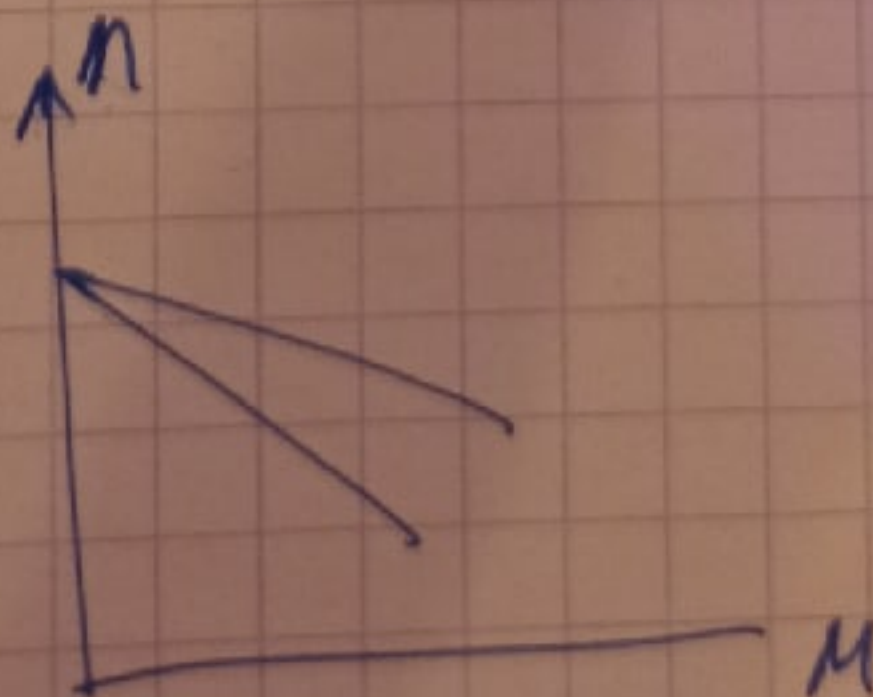
$$U_{\text{ном}} = 224 \quad I_{\text{ном}} = 2,16 \quad n_{\text{ном}} = 1500$$

$$M_{\text{ном}} = 4,9 \cdot 10^{-2}, \quad r_a = 1,15. \quad r_g = 4 \text{ Ом}$$

$$R_g = \frac{U_H - I_H R_a}{n_H} \quad C_E \Phi = \frac{U_H - I_H R_a}{n_H}$$

$$C_M \Phi = \frac{M_H}{I_a}$$

$$n_g = \frac{U_H}{C_E \Phi} - \frac{M_H (r_a + r_g)}{C_M \Phi \cdot C_E \Phi^2} = \dots$$



1

$$n = 25 \cdot U - 1250 \cdot M \quad U = 12 \text{ B}$$

$$M = 4,9 \cdot 10^{-2}$$

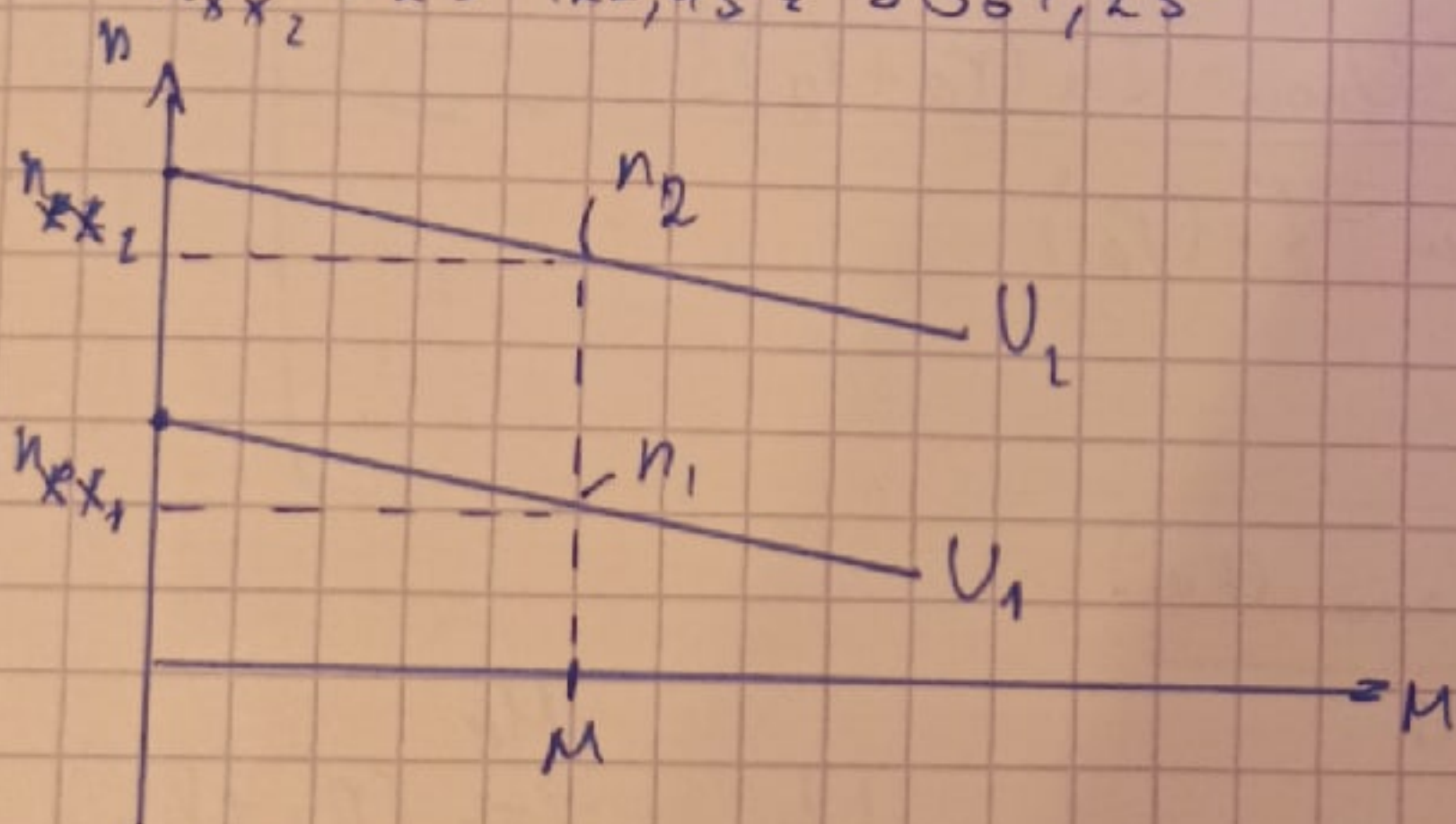
$$n_{xx} = 25 U = 300 \frac{\text{об}}{\text{мин.}}$$

$$n_1 = 25 U - 1250 M = 238,75 \frac{\text{об}}{\text{мин.}}$$

$$3000 = 25 U_2 - 1250 M$$

$$U_2 = \frac{3000 + 1250 \cdot M}{25} = 122,45 \text{ B}$$

$$n_{xx2} = 25 \cdot 122,45 = 3061,25$$



2

$$n = \frac{U}{0,04} - 1250 M$$

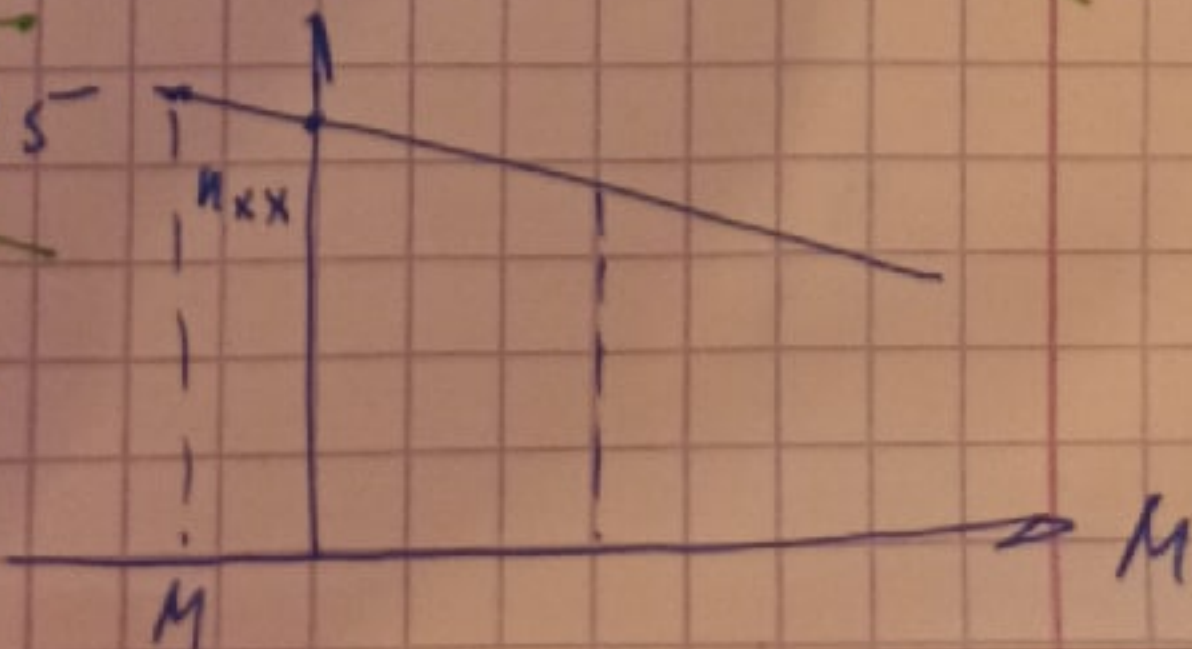
$$1500 = \frac{U}{0,04} + 1250 \cdot 4,9 \cdot 10^{-2}$$

$$57,55$$

$$U = (1500 - 1250 \cdot 4,9 \cdot 10^{-2}) \cdot 0,04 = 62,45 \text{ B}$$

$$n_{xx} = \frac{62,45}{0,04} = 1561,25$$

$$n_{xx} = \frac{57,55}{0,04} = 1438,75$$



Задача:

N 6

$M = M_{\text{ф}}$

Механическая

характеристика:

Φ, π, τ

$$n = \frac{\Phi}{a} - \frac{(V_x + V_z) \cdot M}{a \cdot B}$$

$$a = 0,04$$

$$B = 0,023$$

$$n = 1000 [\text{об/мин}]$$

$$M = 4,8 \cdot 10^2 [\text{Н.м}]$$

$$V_x = 1,75 [\text{Q.м}]$$

$$u = 24 [\text{Б}]$$

$V_z = ?$

Решение:

$$n = \frac{\Phi}{a} - \frac{(V_x + V_z) \cdot M}{a \cdot B}$$

$$-V_x + \frac{(n \cdot a - \Phi) \cdot (a \cdot B)}{M} = V_z$$

или

$$n = \frac{u \cdot B - V_x M + V_z M}{a \cdot B}$$

$$n a \cdot B = u \cdot B - V_x M + V_z M$$

$$n a \cdot B - u \cdot B + V_x M = -V_z M$$

$$\frac{u \cdot B - n a \cdot B - V_x M}{M} = V_z$$

$$\text{Подставляем: } \frac{24 \cdot 0,023 - 1000 \cdot 0,04 \cdot 0,023 - 1,75 \cdot 4,8 \cdot 10^2}{4,8 \cdot 10^2} \text{ ①}$$

$$\text{①} = -7,75$$

$$\text{Ответ: } V_z = 7,75 [\text{Q.м}]$$

Nº 9

$$P = 50 \text{ [W]}$$

$$I = 2 \text{ [A]}$$

$$r_A = 7,5 \text{ [}\Omega\text{]}$$

$$E = ? \quad \eta = ?$$

$$E = 25 - 3 = 22$$

$$E = U - I \cdot r_A \Rightarrow U = 20$$

$$I_H = \frac{P_H}{U_H} = \frac{50}{20} = 2,5$$

$$P_H = \frac{P}{\eta}$$

$$E = 22$$

$$\eta = 0,88 = \frac{22}{25} = \frac{44}{50}$$

Nº 8

$$E = 12 - 2 \cdot 7,5 = 8$$

$$\alpha = C_E \cdot \phi = \frac{E}{n} = \frac{8}{1000} = 0,008$$

$$\beta = C_M \cdot \phi = \frac{M}{I} = \frac{9048}{2} = 0,024$$

$$n = \frac{U}{\alpha} - \frac{M \cdot (r_A + r_B)}{\alpha \cdot \beta}$$

$$n = \frac{12}{0,008} - \frac{0,048 \cdot 7,5}{0,024 \cdot 0,008} = 746,25$$

$$\begin{aligned} r_A &= 7,5 \\ U &= U_H = 24 = 12 \\ I &= 2 \\ n &= 1000 \\ M &= M_H = 9048 \\ n &= ? \end{aligned}$$

$$U_H = 24$$

$$I_H = 2$$

$$n_H = 1200$$

$$M_H = 9,81 \cdot 10^2$$

$$r_H = 7,1$$

$$r_g = ?$$

Nº 7

Задача:
Вычислить номинальный момент $M = M_H$

$$U = E + I_H (r_H + r_{gH})$$

$$E = U_H - I_H \cdot r_H = 24 - 2,2 = 21,8 \text{ В},$$

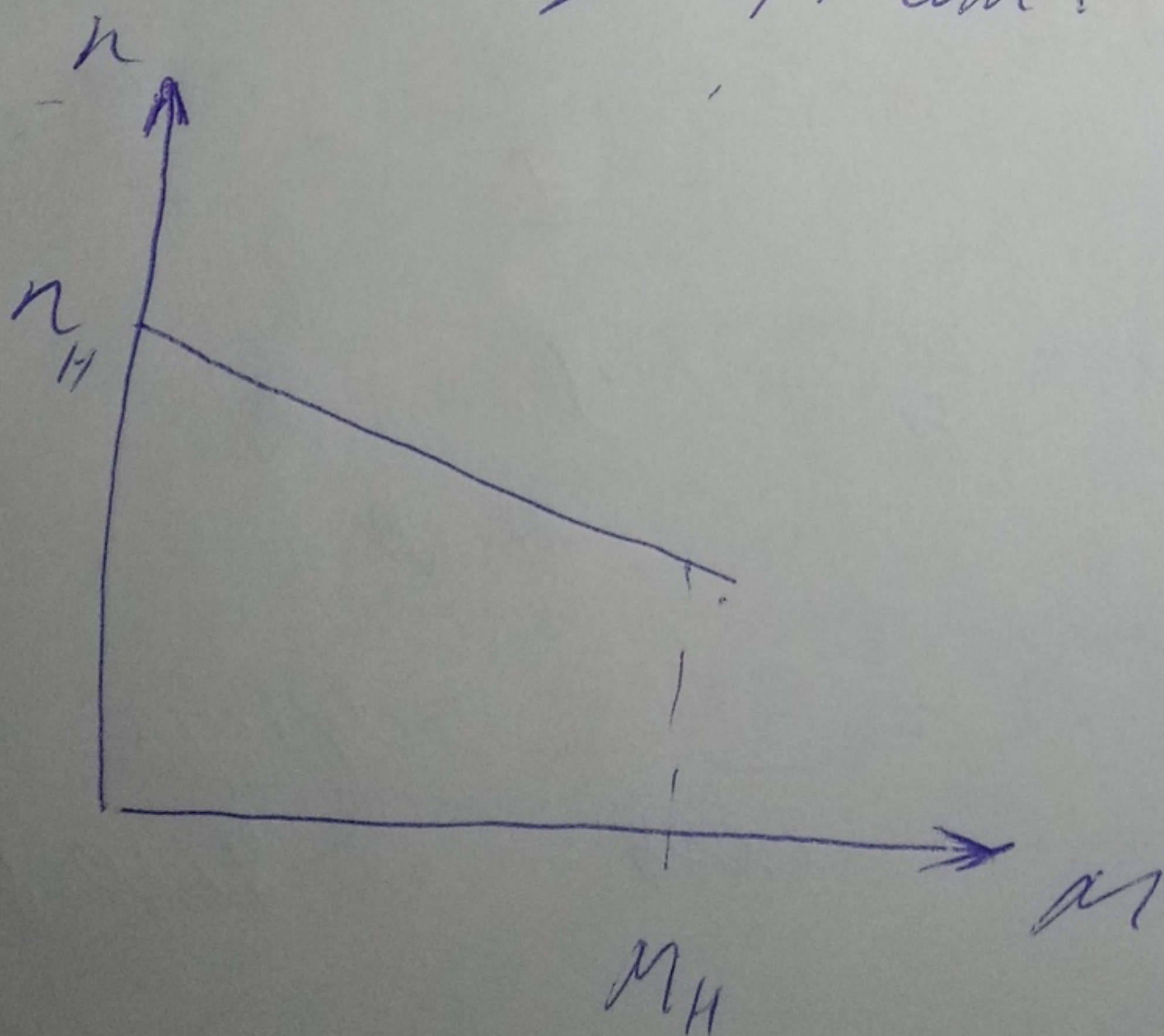
$$\mathcal{L} = C_E \cdot \Phi = \frac{E}{\omega} = \frac{21,8}{1200} = 0,018$$

$$\mathcal{B} = C_M \cdot \Phi = \frac{M}{I_H} = \frac{0,018}{2} = 0,009$$

$$n = \frac{U}{\mathcal{L}} - \frac{M \cdot (r_H + r_{gH})}{\mathcal{L} \cdot \mathcal{B}}$$

$$r_g = \frac{U \cdot \mathcal{B} - n \cdot \mathcal{L} \cdot \mathcal{B} - r_H \cdot M}{M}$$

$$r_g = 0,1 \text{ Ом}.$$



№11

$$U_{ном} = 24 \quad I_{ном} = 2.16, \quad n_{ном} = 1560$$

$$M_{ном} = 4.9 \cdot 10^{-2} \quad r_{\omega} = 1.15$$

$$C_E \phi = \frac{U_{ном} - I_{\omega} r_{\omega}}{n_H}$$

$$n = \frac{U_{ном}}{C_E \phi'}$$

$$C_M \phi = \frac{M_H}{I_H}$$

$$n_H = \frac{U_{ном}}{C_E \phi} - \frac{M_H \cdot r_{\omega}}{C_M C_E \phi^2} = U_{ном}$$

n_{xx} при $M=0$ $n_{xx} = \frac{U_H}{C_E \phi} \Rightarrow \frac{n}{n_{xx}} = \frac{U_H C_E \phi}{C_E \phi' U_H} =$

$$\Rightarrow \frac{n}{n_{xx}} = \frac{\phi}{\phi'}$$

$$u_H = 24$$

$$I_H = 2$$

$$n_H = 7400$$

$$M = 0,048$$

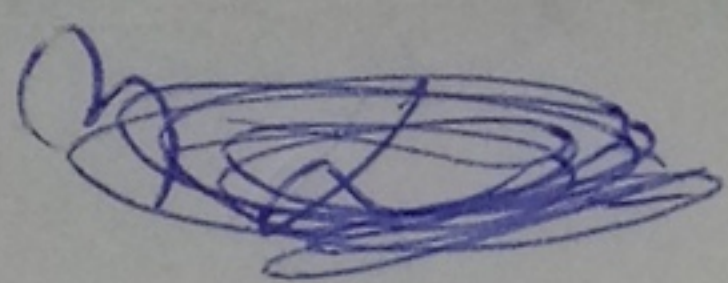
$$r_H = 1,5$$

$$n = f(u)$$

$$N_{12}^0 \text{ (BAWE/HZ) YBEPEH}$$

$$\text{т.ч. } M = \frac{M_H}{2} = \cos \alpha = 0,024$$

$$n = \frac{u}{\alpha} - \frac{r_H \cdot n_H}{2 \cdot \beta}$$



$$\alpha = 24 - 2 \cdot 1,5 = 21$$

$$\beta = \frac{21}{7400} = 0,0028$$

$$\beta = \frac{0,048}{2} = 0,024$$

$$n = \frac{24}{0,0028} - \frac{0,048 \cdot 1,5}{0,024 \cdot 0,0028} = 7400$$

