

Tabelul 1 → for catalog

Negru → masor

NTC1, PTC1, P1

| Nr. Crt. | Nume Ref. | Tip termistor  | $R_{25}$<br>[ $\Omega$ ] | B<br>[K] | $P_{25}$<br>[W] | D<br>[W/K] | $T_g$<br>[s] |
|----------|-----------|----------------|--------------------------|----------|-----------------|------------|--------------|
| 1.       | NTC1      | EPCOS K164 470 | 470                      | 3450     | 0,45            | 0,0075     | 20           |
| 2.       | NTC2      | EPCOS K164 1k  | 1000                     | 3730     | 0,45            | 0,0075     | 20           |

Tabelul 2

→ for catalog

| Nr. Crt. | Nume Ref. | Tip termistor                | $R_N$<br>[ $\Omega$ ] | $U_N$<br>[V] | $T_{ref}$<br>[ $^{\circ}C$ ] |
|----------|-----------|------------------------------|-----------------------|--------------|------------------------------|
| 1.       | PTC1      | PTC265V 80 °150 (EPCOS C890) | 150                   | 265          | 80                           |
| 2.       | PTC2      | PTC30V13 (EPCOS C995)        | 13                    | 30           | 120                          |

Tabelul 3

Grafice (mm) ↓

 $R_1 = f(T)$ 

| Nr. crt. | Temperatura<br>[ $^{\circ}C$ ] | Rezistența<br>NTC1 [ ] | Rezistența<br>NTC2 [ ] | Rezistența<br>PTC1 [ ] | Rezistența<br>PTC2 [ ] | $R_1$ [k ] | $R_2$ [k ] |
|----------|--------------------------------|------------------------|------------------------|------------------------|------------------------|------------|------------|
| 1        | ambientă                       | 437,390                |                        | 195,54                 |                        | 9,540      |            |
| 2        | 50                             | 263,794                |                        | 150,894                |                        | 9,965      |            |
| 3        | 60                             | 187,63                 |                        | 162,221                |                        | 9,963      |            |
| 4        | 70                             | 137,043                |                        | 183,522                |                        | 9,961      |            |
| 5        | 80                             | 103,210                |                        | 222,806                |                        | 9,960      |            |
| 6        | 90                             | 85,061                 |                        | 318,306                |                        | 9,957      |            |
| 7        | 100                            | 69,767                 |                        | 475,12                 |                        | 9,953      |            |
| 8        | 110                            | 47,609                 |                        | 958,15                 |                        | 9,954      |            |
| 9        | 120                            | 37,35                  |                        | 3285,82                |                        | 9,952      |            |
| 10       | 130                            | 30,395                 |                        | 1174,5                 |                        | 9,951      |            |
| 11       | 140                            | 24,584                 |                        | 52920                  |                        | 9,9491     |            |
| 12       | 150                            | 20,349                 |                        | 9534,6                 |                        | 9,9488     |            |

Tabelul 4a

0 → max

→ U limitat la 10V (var platformă)

| I [mA] | 0 | 10   | 20   | 30   | 40   | (50) | 60   | 70   | 80   |
|--------|---|------|------|------|------|------|------|------|------|
| U [V]  | 0 | 5,15 | 6,71 | 7,26 | 7,35 | 7,45 | 7,26 | 7,13 | 6,99 |

Tabelul 4b

| I [mA] | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 |
|--------|---|---|----|----|----|----|----|----|----|
| U [V]  | 0 |   |    |    |    |    |    |    |    |

→ Varietate de  $I \rightarrow h$  ambian

• Tabelul 5

|         | VDR1 |      |      |   |     |     |     |  |  |  |
|---------|------|------|------|---|-----|-----|-----|--|--|--|
| Iv [mA] | -6   | -3,2 | -0,4 | 0 | 0,4 | 3,2 | 6   |  |  |  |
| Uv [V]  | -26  | -23  | -22  | 0 | 22  | 23  | 26  |  |  |  |
|         | VDR2 |      |      |   |     |     |     |  |  |  |
| Iv [mA] | -2,6 | -2,4 | -0,4 | 0 | 0,4 | 2,4 | 2,6 |  |  |  |
| Uv [V]  | -44  | -44  | -36  | 0 | 36  | 44  | 44  |  |  |  |

Posa

2V/div,  $K_y = 20V$

200mA/div,  $K_y = 2mA/div$

Tabelul 6 Datele termistorului polimeric

| Nr. crt. | Curentul de reținere (hold) $I_H$ (A) | Curentul de salt (trip) $I_T$ (A) | Timpul maxim de salt (s) la $5xI_H$ | Pd (W) | Rezistența inițială R min. R max. |      | Rezistența Post-trip R1 max. ( ) |
|----------|---------------------------------------|-----------------------------------|-------------------------------------|--------|-----------------------------------|------|----------------------------------|
| RXE030   | 0,3                                   | 0,6                               | 3                                   | 0,49   | 0,88                              | 1,33 | 2,1                              |

• Tabelul 7

| Caz | $U_A$ [V] | $U_L$ [V] | $I_L = U_L/R_L$ [mA] | $U_{PTC} = U_A - U_L$ [V] | $P_L = U_A \times I_L$ [W] | $P_{PTC}$ [W] |
|-----|-----------|-----------|----------------------|---------------------------|----------------------------|---------------|
| a   | 10V       | 9,48      | 0,2872               | 0,52                      | 2,7226                     | 0,1493        |
| b   | 20V       | 1,015     | 0,0307               | 18,985                    | 0,03116                    | 0,5828        |
| c   | 10V       |           |                      |                           |                            |               |

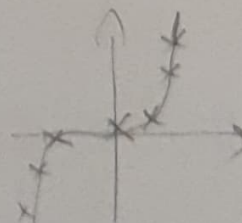
$K_x$  pt 0,1 mV/div pe bib  $\times 10 = 2 \cdot 10 = 20$  V/div

$K_y$  0,1 mV/div pe bib  $K_y = \frac{200mV}{100-2} = 2mA/div$

7 perechi de pct

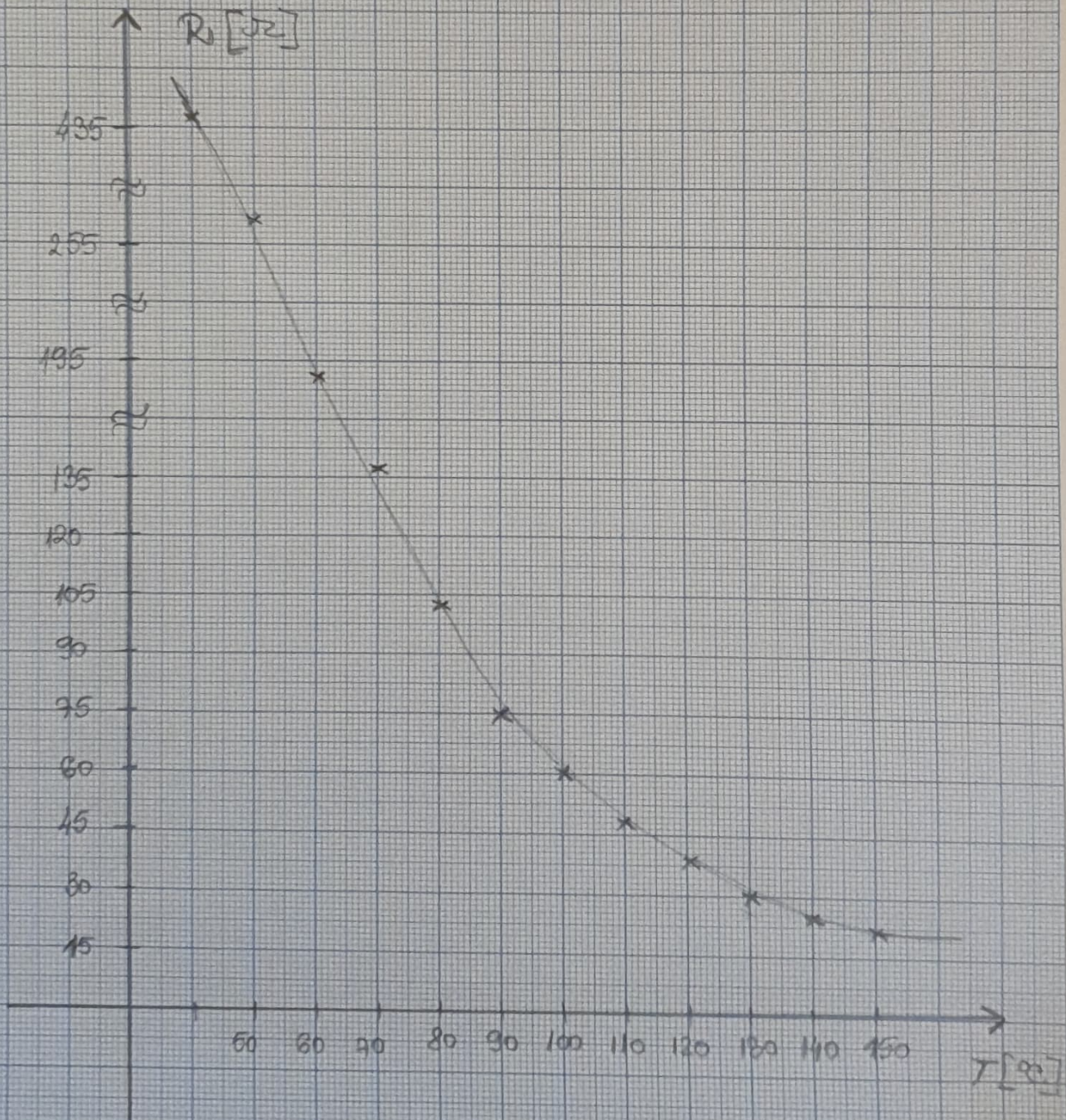
0x: -1,5 div

0y: 3 div



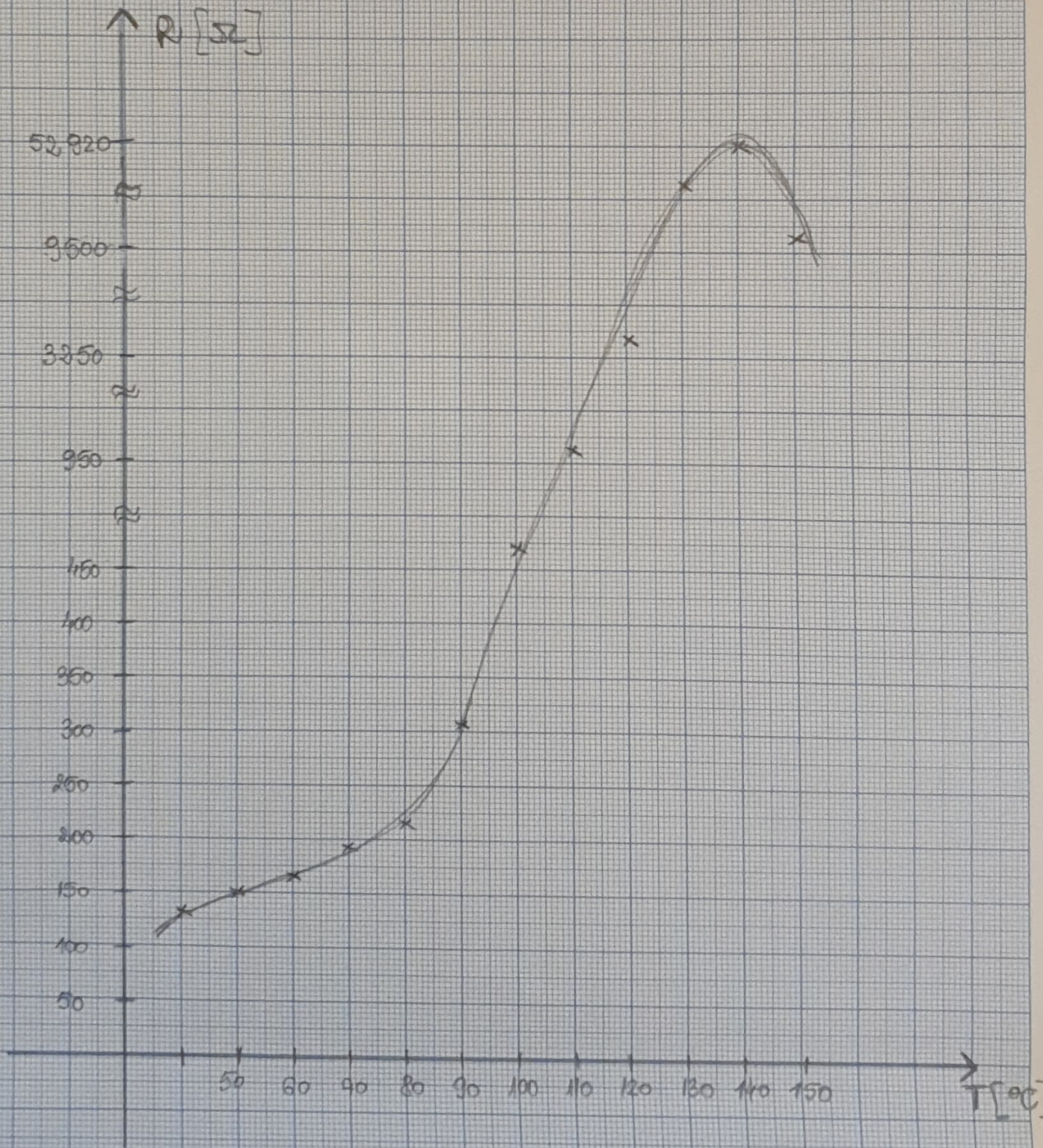


Reprezentarea grafică  
a dependenței  $R = f(T)$  pentru NTC 1



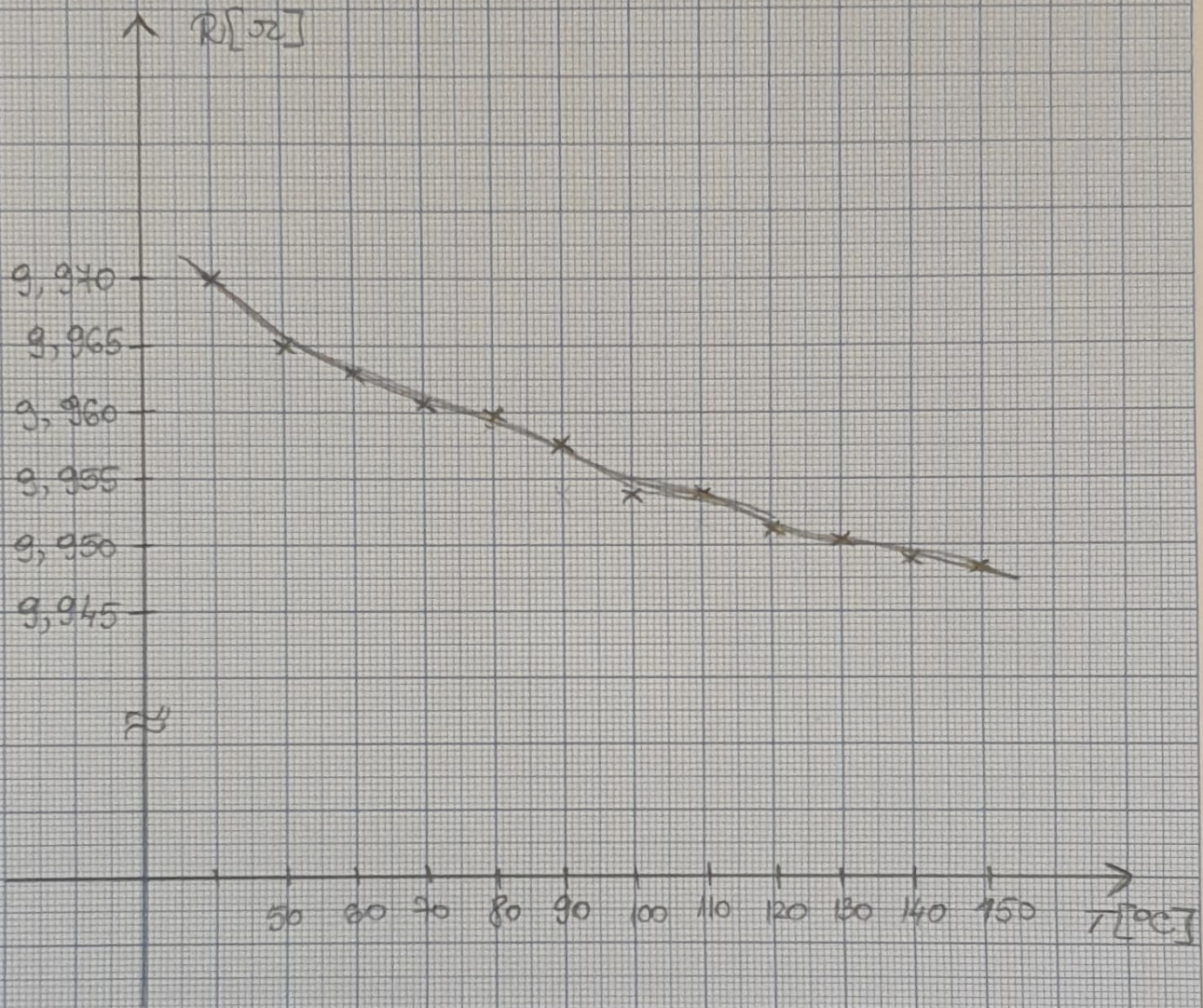


Reprezentarea grafică  
a dependenței  $R = f(T)$  pentru PTC1



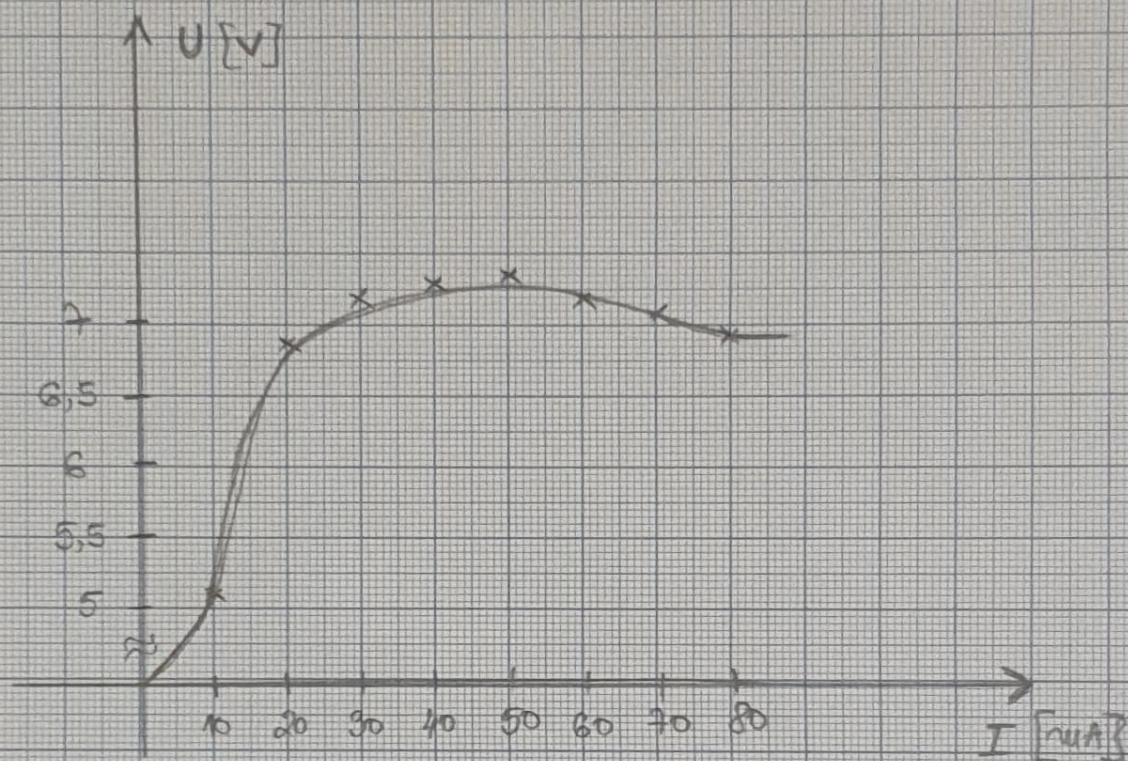


Reprezentarea grafică a dependenței  $R=f(T)$  pentru  $R_1$





Reprezentarea grafică a dependenței  $U = f(I)$  (Tabel 4.a)



Reprezentarea grafică a dependenței  $I_v = f(U_v)$   
pentru VDR 1 (Tabel 5)

