Вариант 21-25

~~76, 85, 84, 81, 84, 80, 82, 76, 75, 77~~

~~80, 82, 81, 84, 85, 77, 76, 84, 83, 87~~

~~78, 77, 81, 86, 87, 70, 80, 79, 78, 87~~

~~76, 80, 85, 85, 78, 76, 83, 81, 84, 88~~

1) 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88

2)

x_i	75	76	77	78	79	80	81	82	83	84	85	86
n_i	2	4	3	3	2	3	4	2	3	5	3	1

x_i	87	88
n_i	3	2

$N = 40$

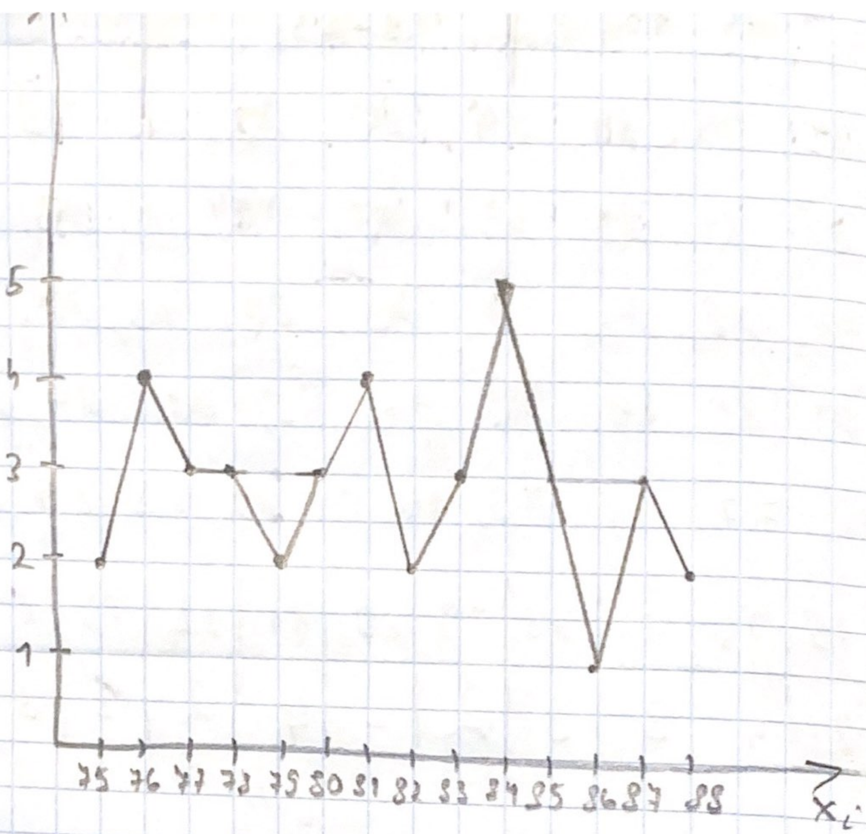
3) $m = \sqrt{N} = \sqrt{40} = 2\sqrt{10}$

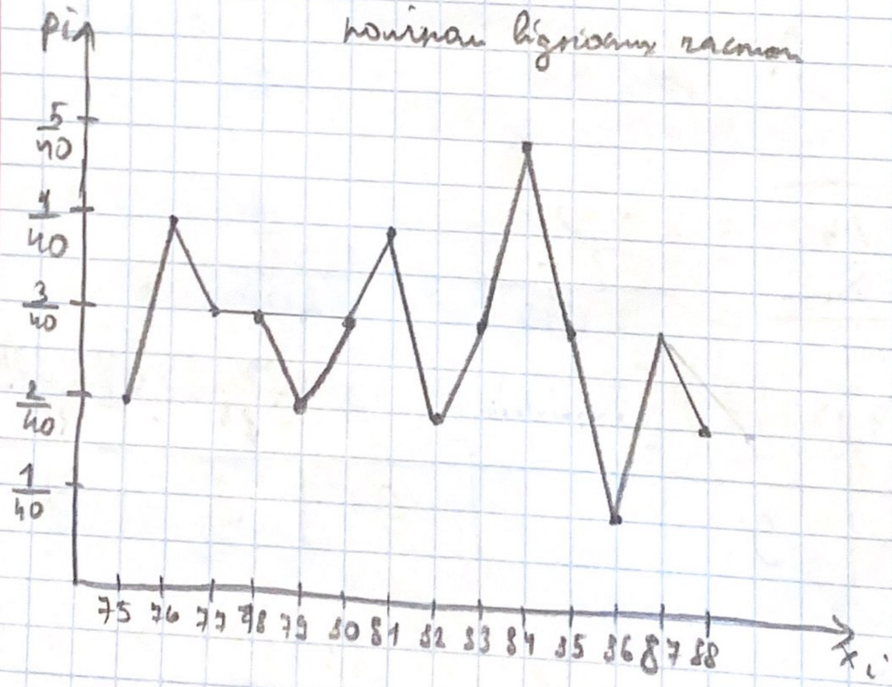
$h = \frac{x_{max} - x_{min}}{m} = \frac{88 - 75}{2\sqrt{10}} = \frac{13\sqrt{10}}{20} \approx 2$

$x_i - x_i + h)$	$[75; 77)$	$[77; 79)$	$[79; 81)$	$[81; 83)$	$[83; 85)$	$[85; 87)$	$[87; 89]$
n_i	6	9	5	6	8	4	5

4)

x_i	75	76	77	78	79	80	81	82	83	84	85	86	87	88
n_i	2	4	3	3	2	3	4	2	3	5	3	1	3	2
p_i	$\frac{2}{40}$	$\frac{4}{40}$	$\frac{3}{40}$	$\frac{3}{40}$	$\frac{2}{40}$	$\frac{3}{40}$	$\frac{4}{40}$	$\frac{2}{40}$	$\frac{3}{40}$	$\frac{5}{40}$	$\frac{3}{40}$	$\frac{1}{40}$	$\frac{3}{40}$	$\frac{2}{40}$

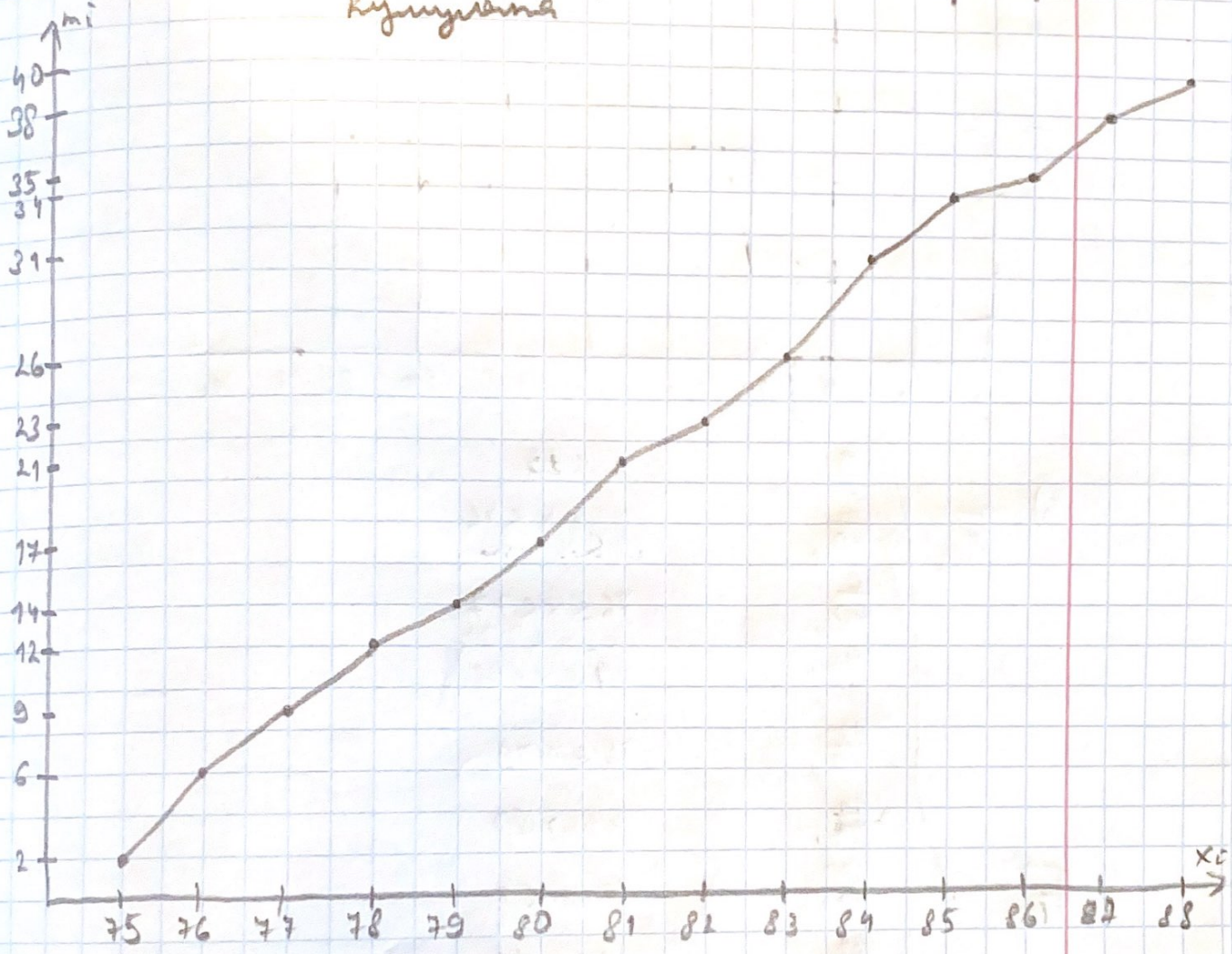

5
4
3
2
1
75 76 77 78 79 80 81 82 83 84 85 86 87 88
x_i

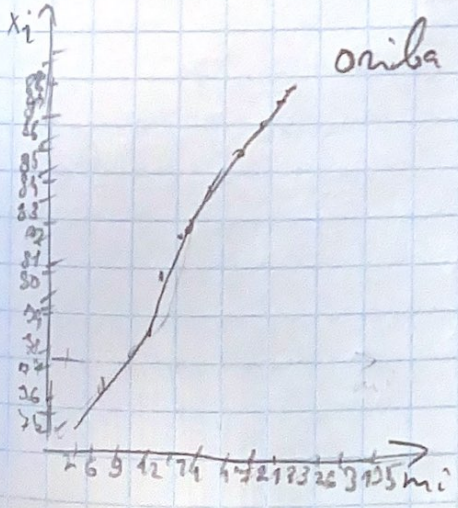

pi
5/40
4/40
3/40
2/40
1/40
75 76 77 78 79 80 81 82 83 84 85 86 87 88
x_i

2)

x_i	75	76	77	78	79	80	81	82	83	84	85	86	87	88
n_i	2	4	3	3	2	3	4	2	3	5	3	1	3	2
m_i	2	6	9	12	14	17	21	23	26	31	34	35	38	40

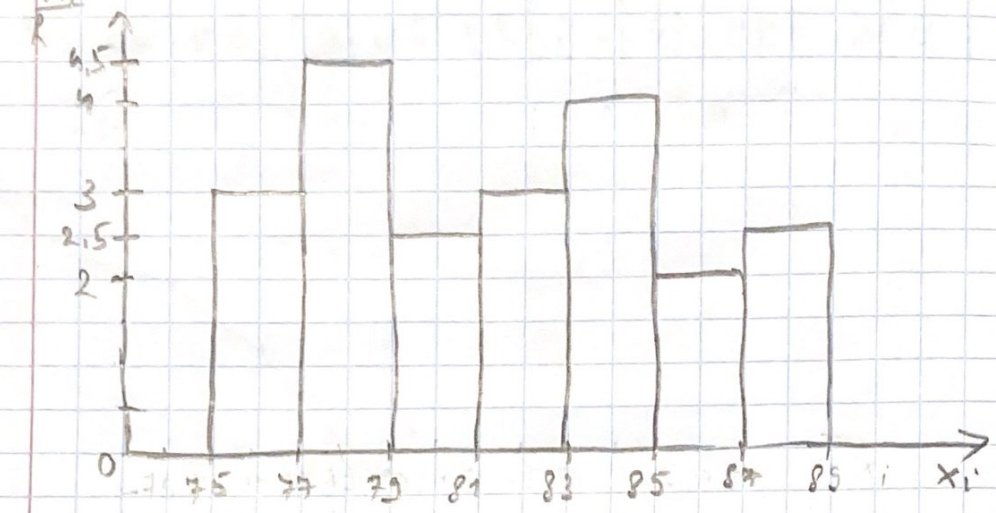
kumulana





3)

$\frac{h_i}{h}$	2	4,5	2,5	3	4	2	2,5



4)

$F(x)$

$x < 75$: 0

$75 \le x < 76$: $\frac{2}{40}$

$76 \le x < 77$: $\frac{6}{40}$

$77 \le x < 78$: $\frac{9}{40}$

$78 \le x < 79$: $\frac{12}{40}$

$79 \le x < 80$: $\frac{14}{40}$

$80 \le x < 81$: $\frac{17}{40}$

$81 \le x < 82$: $\frac{21}{40}$

$82 \le x < 83$: $\frac{23}{40}$

$83 \le x < 84$: $\frac{26}{40}$

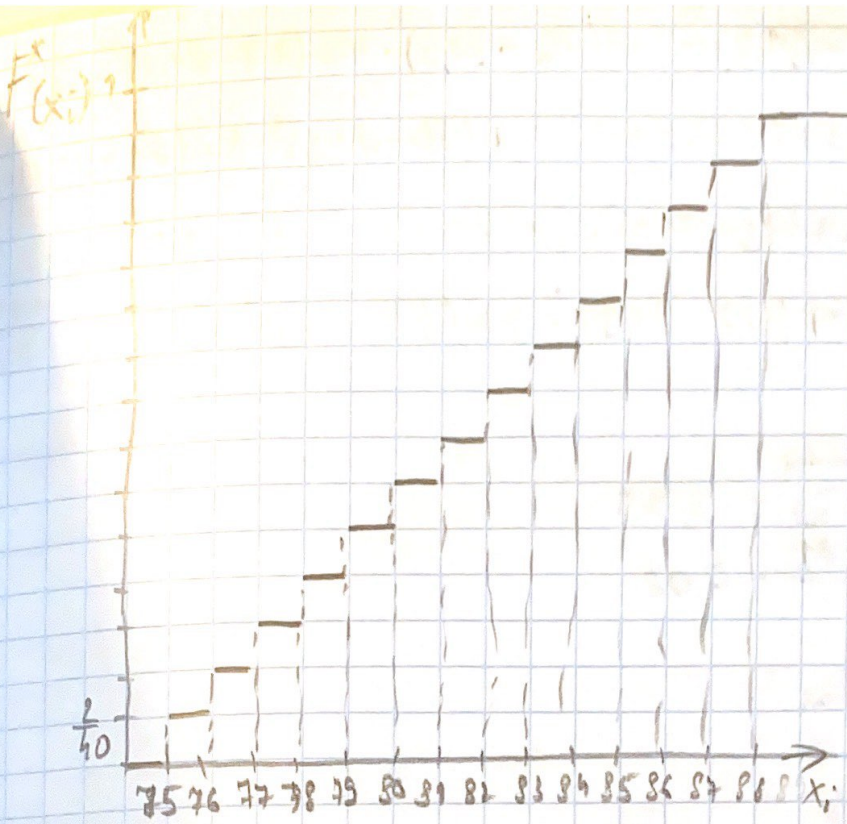
$84 \le x < 85$: $\frac{31}{40}$

$85 \le x < 86$: $\frac{34}{40}$

$86 \le x < 87$: $\frac{35}{40}$

$87 \le x < 88$: $\frac{38}{40}$

$x \ge 88$: 1



1) $M_0 = 84$

$M_e = 81$

$ind = \frac{1+40}{2} = 20{,}5$

$[20; 21]$

2) $A = \frac{\sum (x_i - \bar{x})^3 \cdot n}{(n-1)\sigma^3}$ $\quad \mathcal{A} = \frac{\bar{x} - M_e}{\sigma}$

$\sigma = \sqrt{D}$

$\bar{x} = \frac{\sum x_i n_i}{N}$

$D = \frac{1}{N} \sum (x_i - \bar{x})^2 \cdot n_i$

$E = \frac{\sum (x_i - \bar{x})^4}{n\sigma} - 3$

$E_x = \frac{75 \cdot 2 + 76 \cdot 4 + 77 \cdot 3 + 78 \cdot 3 + 79 \cdot 2 + 80 \cdot 3 + 81 \cdot 4 + 82 \cdot 2 + 83 \cdot 3 + 84 \cdot 5 + 85 \cdot 3 + 86 + 87 \cdot 3 + 88 \cdot 2}{40} =$

$= \frac{813}{40} = 81{,}3$

$$D = \frac{1}{40}\left((75-81{,}3)^2 \cdot 2 + (76-81{,}3)^2 \cdot 4 + (77-81{,}3)^2 \cdot 3 + \right.$$

$$+ (78-81{,}3)^2 \cdot 3 + (79-81{,}3)^2 \cdot 2 + (80-81{,}3)^2 \cdot 3 + (81-81{,}3)^2 \cdot 4 +$$

$$+ (82-81{,}3)^2 \cdot 2 + (83-81{,}3)^2 \cdot 3 + (84-81{,}3)^2 \cdot 5 + (85-81{,}3)^2 \cdot 3 +$$

$$\left. + (86-81{,}3)^2 \cdot 1 + (87-81{,}3)^2 \cdot 3 + (88-81{,}3)^2 \cdot 2\right) = \frac{1}{40} \cdot \frac{2098{,}3}{20} =$$

$$= 13{,}73$$

$$G = \sqrt{13{,}73} = 3{,}71$$

$$d = \frac{81{,}3 - 81}{3{,}71} = 0{,}08$$