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$$V = 39$$

	отказали				одобрили					
i	1	2	3	4	5	6	7	8	9	10
$K_i$	109	121	119	114	361	179	191	339	239	141

$$P_1 = 0,4 \quad P_2 = 0,6$$

$$\mu_1 = \frac{1}{4} (109 + 121 + 119 + 114) = 115,75$$

$$\mu_2 = \frac{1}{6} (361 + 179 + 191 + 339 + 239 + 141) = 241,67$$

$$\begin{aligned} \sigma_1^2 &= \frac{1}{4} ((109 - 115,75)^2 + \dots + (114 - 115,75)^2) = \\ &= \frac{1}{4} (45,5625 + 27,5625 + 10,5625 + 3,6625) = \\ &= 21,6875 \end{aligned}$$

$$\begin{aligned} \sigma_2^2 &= \frac{1}{6} ((361 - 241,67)^2 + (179 - 241,67)^2 + (191 - 241,67)^2 + (339 - 241,67)^2 + \\ &+ (239 - 241,67)^2 + (141 - 241,67)^2) = 6724,89 \end{aligned}$$

$$\frac{(x - \mu_2)^2}{\sigma_2^2} - \frac{(x - \mu_1)^2}{\sigma_1^2} = 2 \ln \left( \frac{P_2}{P_1} \cdot \frac{\sigma_1}{\sigma_2} \right) = -4,93$$

$$(x - \mu_2)^2 \cdot \sigma_1^2 - (x - \mu_1)^2 \cdot \sigma_2^2 = k \cdot \sigma_1^2 \cdot \sigma_2^2$$

$$\underbrace{(\sigma_1^2 - \sigma_2^2)}_a x^2 + \underbrace{2(\mu_2 \sigma_2^2 - \mu_1 \sigma_1^2)}_b x + \underbrace{(\sigma_1^2 \mu_1^2 - \sigma_2^2 \mu_2^2 - k \sigma_1^2 \sigma_2^2)}_c = 0$$

$$ax^2 + bx + c = 0 \quad \text{Найдем корни}$$

$$D = \left(\frac{b}{2}\right)^2 - ac = (\mu_1 \sigma_2^2 - \mu_2 \sigma_1^2)^2 - (\sigma_1^2 - \sigma_2^2)(\sigma_1^2 \mu_1^2 - \sigma_2^2 \mu_2^2 - k \sigma_1^2 \sigma_2^2)$$



$$\begin{aligned}
 &= \cancel{\mu_2^2 \sigma_2^4} - 2\mu_2 \mu_1 \sigma_1^2 \sigma_2^2 + \cancel{\mu_1^2 \sigma_1^4} - \cancel{\sigma_1^4 \mu_1^2} + \sigma_1^2 \sigma_2^2 \mu_2^2 + \\
 &+ \sigma_2^2 \sigma_1^2 \mu_1^2 - \cancel{\sigma_2^4 \mu_2^2} + k(\sigma_1^2 \sigma_2^2 (\sigma_1^2 - \sigma_2^2)) = \\
 &= \sigma_1^2 \sigma_2^2 (-2\mu_2 \mu_1 + \mu_2^2 + \mu_1^2 + k(\sigma_1^2 - \sigma_2^2)) = \\
 &= 7128127797,35
 \end{aligned}$$

$$\sqrt{D} = 84428,24$$

$$x_1 = \frac{-\frac{b}{2} + \sqrt{D}}{a} = \frac{(\mu_1 \sigma_1^2 - \mu_2 \sigma_2^2) + \sqrt{D}}{\sigma_1^2 - \sigma_2^2} =$$

$$= \underline{102,74}$$

$$x_2 = 127,93$$

$$D^{(1)} = \{x: 102,74 \leq x \leq 127,74\} - \text{отказать}$$

$$D^{(2)} = \{x: 0 \leq x < 102,74 \text{ or } x \geq 127,74\} - \text{одобрить}$$