№8

H_0: I и II - зависимы

H_1: $\overline{H_0}$

	I	II	
H	25	52	$\frac{77}{200}$
T	50	41	$\frac{91}{200}$
B	25	7	$\frac{32}{200}$
	$\frac{100}{200}$	$\frac{100}{200}$	

$$\widetilde{\chi} = \frac{\left(25 - 200 \cdot \frac{77}{200} \cdot \frac{100}{200}\right)^2}{200 \cdot \frac{77}{200} \cdot \frac{100}{200}} + \frac{\left(100 - 200 \cdot \frac{91}{200} \cdot \frac{100}{200}\right)^2}{200 \cdot \frac{91}{200} \cdot \frac{100}{200}} + \frac{\left(25 - 200 \cdot \frac{32}{200} \cdot \frac{100}{200}\right)^2}{200 \cdot \frac{32}{200} \cdot \frac{100}{200}} +$$

$$+ \frac{\left(52 - 200 \cdot \frac{77}{200} \cdot \frac{100}{200}\right)^2}{200 \cdot \frac{77}{200} \cdot \frac{100}{200}} + \frac{\left(41 - 200 \cdot \frac{91}{200} \cdot \frac{100}{200}\right)^2}{200 \cdot \frac{91}{200} \cdot \frac{100}{200}} + \frac{\left(7 - 200 \cdot \frac{32}{200} \cdot \frac{100}{200}\right)^2}{200 \cdot \frac{32}{200} \cdot \frac{100}{200}} \approx 20.48$$

$\Delta \rightsquigarrow \chi^2(2 \cdot 1) = \chi^2(2)$.

$$p\text{-value} = \int_{20.48}^{+\infty} q(t)\,dt = \int_{20.48}^{+\infty} \frac{1}{2} e^{-\frac{t}{2}} dt = 0.00004.$$

$p\text{-value} < 1 - 0.95 \Rightarrow$ отвергаем H_0.