

T_{12}

$H_0:$

x	1	2	3	4
p	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{6}$	$\frac{1}{3}$

$\alpha = 0.2$

$H_1:$

x	1	2	3	4
p	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$

$n=2$

$$l = \frac{L_1}{L_0} = \frac{p_1(x_1) p_1(x_2)}{p_0(x_1) p_0(x_2)}$$

$H_0: 2$

	1	1	2	3	4
1		$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{24}$	$\frac{1}{12}$
2		$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{24}$	$\frac{1}{12}$
3		$\frac{1}{24}$	$\frac{1}{24}$	$\frac{1}{36}$	$\frac{1}{18}$
4		$\frac{1}{12}$	$\frac{1}{12}$	$\frac{1}{18}$	$\frac{1}{9}$

$H_1: 2$

	1	1	2	3	4
1		$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$
2		$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$
3		$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$
4		$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{1}{16}$

$\ell: 2$

	1	1	2	3	4
1		1	1	$\frac{3}{2}$	$\frac{3}{4}$
2		1	1	$\frac{3}{2}$	$\frac{3}{4}$
3		$\frac{3}{2}$	$\frac{3}{2}$	$\frac{9}{4}$	$\frac{9}{8}$
4		$\frac{3}{4}$	$\frac{3}{4}$	$\frac{9}{8}$	$\frac{9}{16}$

$$G: \ell \geq c$$

$$P(\ell \geq c | H_0) \leq 0.2$$

Берем $\frac{8}{9}$ и 4 по $\frac{1}{24}$, т.е. $\frac{1}{36} + 4 \cdot \frac{1}{24} = \frac{1}{36} \approx 0,194$.

Если мы еще возьмем, то будет перебор. \Rightarrow

$$\Rightarrow C = \frac{3}{2}$$

$$\alpha_1 = \frac{1}{36}, \alpha_2 = \frac{11}{16} \Rightarrow W = 1 - \alpha_2 = \frac{5}{16}$$

Ответ: $W = \frac{5}{16}$