

W3 7

1)		X	0	1	2	3	
		y	$\frac{5^6}{6^6}$	$\frac{3 \cdot 5^5}{6^6}$	$\frac{3 \cdot 5^4}{6^6}$	$\frac{5^3}{6^6}$	$\frac{27000}{6^6}$
		0	$\frac{3 \cdot 5^5}{6^6}$	$\frac{9 \cdot 5^4}{6^6}$	$\frac{9 \cdot 5^3}{6^6}$	$\frac{3 \cdot 5^2}{6^6}$	$\frac{16200}{6^6}$
1	1		$\frac{3 \cdot 5^5}{6^6}$	$\frac{9 \cdot 5^4}{6^6}$	$\frac{9 \cdot 5^3}{6^6}$	$\frac{3 \cdot 5^2}{6^6}$	$\frac{16200}{6^6}$
2	2		$\frac{3 \cdot 5^4}{6^6}$	$\frac{9 \cdot 5^3}{6^6}$	$\frac{9 \cdot 5^2}{6^6}$	$\frac{9 \cdot 5}{6^6}$	$\frac{3240}{6^6}$
3	3		$\frac{5^3}{6^6}$	$\frac{3 \cdot 5^2}{6^6}$	$\frac{3 \cdot 5}{6^6}$	$\frac{1}{6^6}$	$\frac{216}{6^6}$
			$\frac{27000}{6^6}$	$\frac{16200}{6^6}$	$\frac{3240}{6^6}$	$\frac{216}{6^6}$	1
$M_x = M_y =$			$\frac{16200 + 6480 + 648}{6^6}$	$\frac{23328}{6^6}$		$0.5$	

$$\text{Moy} = \frac{1}{6^2} (9 \cdot 5^2 + 18 \cdot 5^2 + 9 \cdot 5^2 + 18 \cdot 5^2 + 38 \cdot 5^2 + 18 \cdot 5^2 + 9 \cdot 5^2 + 18 \cdot 5^2 + 9 \cdot 5^2) = \frac{11664}{36} = 324$$

$$\text{cov}(x, y) = 0,15 - 0,5 \cdot 0,95 = 0$$

$x, y$  - regular

$$2) P(E=k) = (1-p)^{k-1} \cdot p$$

$$P(G=k) = (1-p)^{k-1} \cdot p$$

$$P(E=k | E+G=n) = \frac{P(E=k, G=n-k)}{P(E+G=n)} \quad (2)$$

$$= P(E+G=n) = P(E=k, G=n-k) = \sum_{k=0}^n (1-p)^{k-1} \cdot p^2 \cdot \frac{1}{(k+1)}$$

$$= (1-p)^{n-2} \cdot p^2 \cdot \sum_{k=0}^n = (1-p)^{n-2} \cdot p^2 \cdot (n+1)$$

$$(2) \frac{(1-p)^{k-1} \cdot p^2 \cdot (1-p)^{n-k-1}}{(1-p)^{n-2} \cdot p^2 \cdot (n+1)} = \frac{(1-p)^{n-2}}{(1-p)^{n-2}} \cdot \frac{1}{n+1} = \frac{1}{n+1}$$

E	0	1	2	3	4	5	
2	$\frac{1}{36}$	0	0	0	0	0	$\frac{1}{36}$
3	0	$\frac{2}{36}$	0	0	0	0	$\frac{2}{36}$
4	$\frac{1}{36}$	0	$\frac{3}{36}$	0	0	0	$\frac{3}{36}$
5	0	$\frac{2}{36}$	0	$\frac{2}{36}$	0	0	$\frac{4}{36}$
6	$\frac{1}{36}$	0	$\frac{3}{36}$	0	$\frac{2}{36}$	0	$\frac{5}{36}$
7	0	$\frac{2}{36}$	0	$\frac{4}{36}$	0	$\frac{6}{36}$	$\frac{6}{36}$
8	$\frac{1}{36}$	0	$\frac{2}{36}$	0	$\frac{3}{36}$	0	$\frac{5}{36}$
9	0	$\frac{2}{36}$	0	$\frac{3}{36}$	0	0	$\frac{9}{36}$

10	$\frac{1}{36}$	0	$\frac{2}{36}$	0	0	0	$\frac{3}{36}$
11	0	$\frac{3}{36}$	0	0	0	0	$\frac{3}{36}$
12	$\frac{1}{36}$	0	0	0	0	0	$\frac{1}{36}$
	$\frac{6}{36}$	$\frac{10}{36}$	$\frac{8}{36}$	$\frac{6}{36}$	$\frac{4}{36}$	$\frac{2}{36}$	1

$P(E=3, \eta=0) = 0 + \frac{2}{36} \cdot \frac{1}{6} \Rightarrow E(\eta) - 3\text{a. nenn.}$

$$M(E) = \frac{1}{36} (2+6+12+20+30+42+48+36+30+12+12) = \\ = \frac{252}{36} = 7$$

$$M(\eta) = \frac{1}{36} (0+10+18+13+16+10) = \frac{70}{36}$$

$$M(E\eta) = \frac{1}{36} (6+16+10+30+24+48+14+42+20+32+ \\ + 6+18+13+5+40+22) = \frac{480}{36}$$

$$\text{cov}(E, \eta) = \frac{490}{36} = 7 \cdot \frac{70}{36} = \frac{490}{36} - \frac{490}{36} = 0$$

$E(\eta)$  - reziprokoobm.