3.1

1) [1] → [2] ⇄ [3] , $k = 3$

ν_1 (пер) (1,2) (2,3) (3,3)

ν_2 (при) (2,1) (3,2) (2,3)

$l_{11} = 1$ $l_{21} = 1$ $l_{31} = 1$

$l_{12} = 0$ $l_{22} = 2$ $l_{32} = 1$

$$H = -4 \cdot \frac{1}{3-1} \cdot \lg\left(\frac{1}{2}\right) - \frac{2}{3-1} \cdot \lg\frac{2}{3-1} = 0{,}6021$$

2) [0] ⇄ [1] ⇄ [2] , $k = 3$
$K = 6$

ν_1 (пер) (0,1) (1,2) (2,1) (1,0)

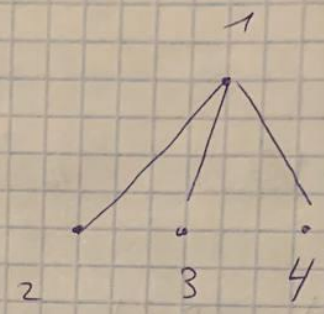
ν_2 (при) (0,1) (1,2) (2,1) (1,0)

$l_{01} = 1$ $l_{11} = 2$ $l_{21} = 1$

$l_{02} = 1$ $l_{12} = 2$ $l_{22} = 1$

$$H = -4 \cdot \frac{1}{2} \cdot \lg\left(\frac{1}{2}\right) - 2 \cdot 1 \cdot \lg(1) = 0{,}6021$$

3.2



$U_1 =$ (1,2) (1,3) (1,4)

$U_2 =$ (2,1) (3,1) (4,1)

U_3 (1,2) (1,3) (1,4)

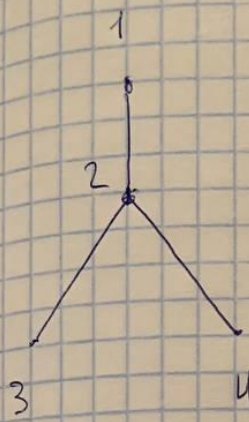
$U_4 =$ (2,1) (3,1) (4,1)

$U_5 =$ (2,3) (3,2) (3,4) (4,3) (2,4) (4,2)

1. $l_{11} = 3$ $l_{13} = 3$
2. $l_{12} = 1$ $l_{24} = 1$ $l_{25} = 2$
3. $l_{32} = 1$ $l_{34} = 1$ $l_{35} = 2$
4. $l_{12} = 1$ $l_{24} = 1$ $l_{43} = 2$

$$H = -2 - \frac{3}{4-1} \cdot \lg\left(\frac{3}{3}\right) - 3 \cdot \frac{2}{4-1} \cdot \lg\left(\frac{2}{3}\right) - 6 \cdot \frac{1}{4-1} \cdot \lg\left(\frac{1}{3}\right) =$$

$$= 1.3064$$



$n = 4$

$u_1 = (1,2)\ (2,3)\ (2,4)$

$u_2 = (4,2)\ (3,2)\ (2,1)$

$u_3 = (1,3)\ (1,4)$

$u_4 = (3,1)\ (4,1)$

$u_5 = (3,4)\ (4,3)$

$l_{11} = 1 \qquad l_{13} = 2$

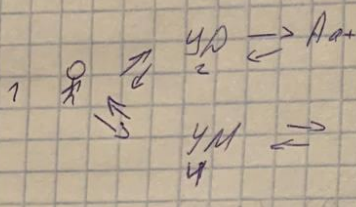
$l_{21} = 1 \qquad l_{22} = 1$

$l_{32} = 1 \qquad l_{34} = 1 \qquad l_{33} = 1$

$l_{42} = 1 \qquad l_{44} = 1 \qquad l_{45} = 1$

$$H = -2 \cdot \frac{2}{3} \lg\left(\frac{2}{3}\right) - 8 \cdot \frac{1}{3} \lg\left(\frac{1}{3}\right) = 1,5071$$

3.3



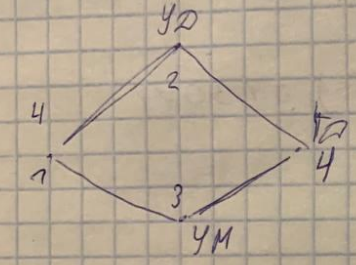
$n = 5$

$ч_1$ (нор) (1,2) (2,1) (2,3) (3,2) (1,4) (4,1) (4,5) (5,4)

$ч_2$ (при) (1,2) (2,1) (2,3) (3,2) (1,4) (4,1) (4,5) (5,4)

1. $l_{11} = 2$ $l_{10} = 2$
2. $l_{20} = 1$ $l_{81} = 2$
3. $l_{21} = 1$ $l_{52} = 1$
4. $l_{41} = 2$ $l_{41} = 2$
5. $l_{51} = 1$ $l_{52} = 1$

$$И = -(\frac{2}{5-1} \lg(\frac{2}{4}) - 4 \cdot \frac{1}{5-1} \cdot \lg(\frac{1}{4}) =$$
$$= 1,5059$$



$$И = -2\frac{2}{3} \cdot \lg(\frac{2}{3}) - 4 \cdot \frac{1}{3} \lg(\frac{1}{3}) =$$
$$= 0,871$$

$n = 4$

$l_{12} = 2$

$l_{21} = 1$ $l_{22} = 1$

$l_{31} = 1$ $l_{32} = 1$

$ч_1$ (нор) = (2,2) (2,4) (4,3) (3,4)

$ч_2$ (при) = (2,1) (3,1) (4,2) (4,3)