

## Ранговая корреляция Спирмена

Два эксперта  $X$  и  $Y$  выставили оценки десяти образцам продукции завода. Найти выборочный коэффициент корреляции Спирмена  $\rho_{\text{в}}$  между их оценками. <sup>1</sup>

### Задача L-44.1.

$$X = [47, 43, 40, 36, 35, 31, 28, 24, 22, 19]$$

$$Y = [57, 49, 28, 36, 25, 13, 18, 63, 52, 43]$$

### Задача L-44.2.

$$X = [46, 43, 40, 37, 34, 31, 28, 24, 21, 18]$$

$$Y = [58, 52, 48, 29, 64, 17, 42, 12, 22, 36]$$

### Задача L-44.3.

$$X = [46, 43, 40, 37, 33, 30, 27, 25, 22, 19]$$

$$Y = [57, 47, 43, 62, 22, 18, 36, 10, 54, 32]$$

### Задача L-44.4.

$$X = [47, 43, 41, 37, 35, 31, 28, 24, 22, 20]$$

$$Y = [58, 49, 29, 44, 24, 13, 17, 38, 53, 63]$$

### Задача L-44.5.

$$X = [47, 43, 41, 36, 33, 32, 29, 26, 22, 18]$$

$$Y = [59, 64, 47, 22, 29, 17, 36, 12, 53, 42]$$

### Задача L-44.6.

$$X = [46, 42, 40, 36, 35, 31, 28, 24, 22, 20]$$

$$Y = [52, 49, 44, 29, 63, 11, 17, 58, 37, 23]$$

### Задача L-44.7.

$$X = [46, 44, 40, 37, 34, 31, 28, 25, 23, 20]$$

$$Y = [53, 64, 29, 36, 18, 23, 12, 49, 58, 43]$$

### Задача L-44.8.

$$X = [47, 44, 41, 38, 34, 32, 28, 24, 22, 19]$$

$$Y = [58, 36, 64, 43, 24, 13, 48, 30, 53, 18]$$

### Задача L-44.9.

$$X = [46, 44, 41, 37, 33, 32, 28, 25, 23, 19]$$

$$Y = [54, 37, 58, 42, 23, 15, 12, 32, 64, 48]$$

### Задача L-44.10.

$$X = [46, 43, 41, 38, 34, 31, 27, 25, 23, 19]$$

$$Y = [58, 54, 63, 42, 18, 49, 13, 30, 25, 35]$$

### Задача L-44.11.

$$X = [45, 44, 41, 38, 35, 31, 27, 24, 21, 19]$$

$$Y = [53, 63, 58, 31, 24, 18, 13, 35, 48, 43]$$

### Задача L-44.12.

$$X = [47, 43, 41, 36, 34, 31, 28, 26, 23, 19]$$

$$Y = [59, 43, 49, 24, 28, 19, 11, 37, 53, 63]$$

### Задача L-44.13.

$$X = [47, 43, 41, 37, 35, 32, 28, 25, 23, 20]$$

$$Y = [58, 44, 49, 28, 19, 13, 36, 64, 25, 53]$$

### Задача L-44.14.

$$X = [46, 44, 41, 37, 34, 31, 28, 25, 21, 18]$$

$$Y = [53, 59, 48, 24, 35, 63, 17, 11, 43, 32]$$

<sup>1</sup>Гмурман В.Е. Руководство к решению задач по теории вероятностей и математической статистике. М.:1969. с. 202.

**Задача L-44.15.**

2

$$X = [46, 44, 40, 36, 33, 32, 29, 26, 23, 19]$$

$$Y = [53, 59, 42, 36, 22, 16, 11, 31, 64, 48]$$

**Задача L-44.16.**

2

$$X = [45, 44, 41, 36, 33, 30, 27, 24, 22, 20]$$

$$Y = [52, 63, 48, 44, 24, 36, 11, 30, 58, 17]$$

**Задача L-44.17.**

2

$$X = [47, 43, 41, 37, 35, 30, 27, 24, 21, 18]$$

$$Y = [58, 48, 42, 30, 25, 18, 13, 52, 62, 37]$$

**Задача L-44.18.**

2

$$X = [46, 43, 41, 37, 33, 32, 29, 26, 23, 20]$$

$$Y = [54, 36, 48, 23, 31, 16, 10, 59, 64, 43]$$

**Задача L-44.19.**

2

$$X = [45, 43, 40, 37, 34, 31, 27, 25, 23, 20]$$

$$Y = [53, 63, 58, 36, 18, 14, 28, 48, 44, 23]$$

**Задача L-44.20.**

2

$$X = [46, 43, 39, 37, 34, 31, 28, 26, 22, 18]$$

$$Y = [53, 58, 42, 36, 19, 63, 48, 12, 23, 28]$$

**Задача L-44.21.**

2

$$X = [46, 42, 40, 37, 34, 32, 28, 25, 22, 19]$$

$$Y = [54, 36, 58, 63, 30, 17, 14, 47, 23, 44]$$

**Задача L-44.22.**

2

$$X = [47, 44, 40, 36, 33, 31, 28, 25, 22, 20]$$

$$Y = [59, 63, 48, 44, 22, 52, 10, 28, 36, 18]$$

**Задача L-44.23.**

2

$$X = [47, 43, 41, 37, 34, 31, 27, 25, 22, 19]$$

$$Y = [58, 63, 48, 43, 24, 16, 36, 12, 54, 30]$$

**Задача L-44.24.**

2

$$X = [46, 43, 41, 36, 35, 31, 27, 25, 22, 19]$$

$$Y = [53, 44, 48, 37, 25, 18, 13, 29, 63, 58]$$

**Задача L-44.25.**

2

$$X = [46, 43, 39, 37, 34, 31, 29, 26, 22, 19]$$

$$Y = [54, 47, 58, 63, 24, 17, 14, 31, 43, 37]$$

**Задача L-44.26.**

2

$$X = [46, 43, 41, 37, 34, 31, 28, 25, 21, 18]$$

$$Y = [52, 59, 47, 24, 42, 19, 14, 36, 63, 30]$$

**Задача L-44.27.**

2

$$X = [47, 43, 41, 37, 35, 32, 29, 25, 22, 20]$$

$$Y = [59, 44, 30, 24, 52, 12, 63, 37, 49, 18]$$

**Задача L-44.28.**

2

$$X = [47, 43, 40, 37, 35, 31, 29, 25, 21, 19]$$

$$Y = [58, 52, 64, 24, 48, 19, 12, 28, 44, 36]$$

L-44

**Ответы.****Ранговая корреляция Спирмена**

06-Nov-18

№	$\sum d_i^2$	$\rho_B$	$y_i$
1	164	0.006	2,4,7,6,8,10,9,1,3,5
2	62	0.624	2,3,4,7,1,9,5,10,8,6
3	86	0.479	2,4,5,1,8,9,6,10,3,7
4	172	-0.042	2,4,7,5,8,10,9,6,3,1
5	98	0.406	2,1,4,8,7,9,6,10,3,5
6	106	0.358	3,4,5,7,1,10,9,2,6,8
7	144	0.127	3,1,7,6,9,8,10,4,2,5
8	94	0.430	2,6,1,5,8,10,4,7,3,9
9	150	0.091	3,6,2,5,8,9,10,7,1,4
10	54	0.673	2,3,1,5,9,4,10,7,8,6
11	96	0.418	3,1,2,7,8,9,10,6,4,5
12	170	-0.030	2,5,4,8,7,9,10,6,3,1
13	152	0.079	2,5,4,7,9,10,6,1,8,3
14	80	0.515	3,2,4,8,6,1,9,10,5,7
15	140	0.152	3,2,5,6,8,9,10,7,1,4
16	76	0.539	3,1,4,5,8,6,10,7,2,9
17	150	0.091	2,4,5,7,8,9,10,3,1,6
18	184	-0.115	3,6,4,8,7,9,10,2,1,5
19	78	0.527	3,1,2,6,9,10,7,4,5,8
20	76	0.539	3,2,5,6,9,1,4,10,8,7
21	94	0.430	3,6,2,1,7,9,10,4,8,5
22	42	0.745	2,1,4,5,8,3,10,7,6,9
23	72	0.564	2,1,4,5,8,9,6,10,3,7
24	174	-0.055	3,5,4,6,8,9,10,7,1,2
25	78	0.527	3,4,2,1,8,9,10,7,5,6
26	116	0.297	3,2,4,8,5,9,10,6,1,7
27	128	0.224	2,5,7,8,3,10,1,6,4,9
28	74	0.552	2,3,1,8,4,9,10,7,5,6

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