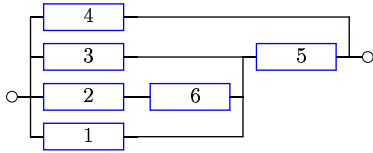


Вероятность безотказной работы цепи

Найти вероятность безотказной работы функциональной цепи из независимых элементов. Дана вероятность безотказной работы каждого элемента.

Задача L-29.1.

2

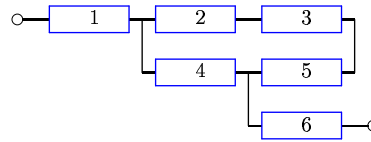


$$p_1 = 0.4, p_2 = 0.8, p_3 = 0.9,$$

$$p_4 = 0.8, p_5 = 0.4, p_6 = 0.3.$$

Задача L-29.2.

2

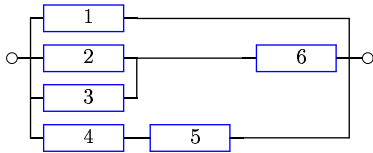


$$p_1 = 0.7, p_2 = 0.5, p_3 = 0.2,$$

$$p_4 = 0.3, p_5 = 0.8, p_6 = 0.7.$$

Задача L-29.3.

2

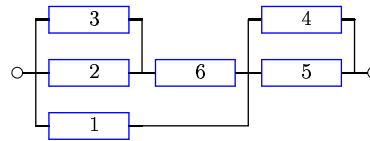


$$p_1 = 0.4, p_2 = 0.3, p_3 = 0.5,$$

$$p_4 = 0.5, p_5 = 0.3, p_6 = 0.7.$$

Задача L-29.4.

2

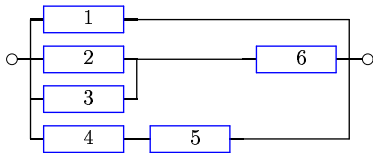


$$p_1 = 0.8, p_2 = 0.9, p_3 = 0.8,$$

$$p_4 = 0.3, p_5 = 0.2, p_6 = 0.6.$$

Задача L-29.5.

2

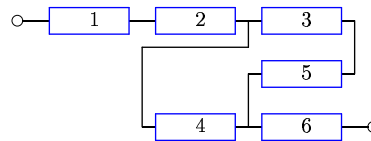


$$p_1 = 0.7, p_2 = 0.3, p_3 = 0.9,$$

$$p_4 = 0.7, p_5 = 0.3, p_6 = 0.6.$$

Задача L-29.6.

2

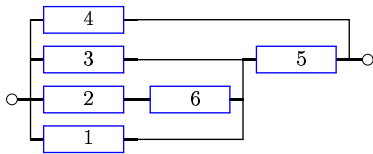


$$p_1 = 0.3, p_2 = 0.7, p_3 = 0.3,$$

$$p_4 = 0.6, p_5 = 0.7, p_6 = 0.3.$$

Задача L-29.7.

2

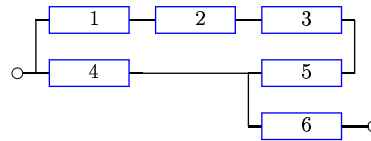


$$p_1 = 0.7, p_2 = 0.6, p_3 = 0.5,$$

$$p_4 = 0.2, p_5 = 0.3, p_6 = 0.4.$$

Задача L-29.8.

2

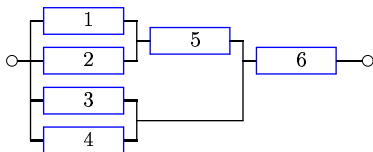


$$p_1 = 0.7, p_2 = 0.9, p_3 = 0.4,$$

$$p_4 = 0.4, p_5 = 0.6, p_6 = 0.8.$$

Задача L-29.9.

2

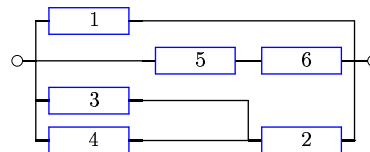


$$p_1 = p_2 = 0.7, p_3 = 0.4,$$

$$p_4 = 0.2, p_5 = 0.4, p_6 = 0.8.$$

Задача L-29.10.

2

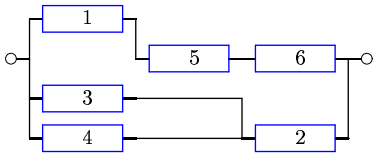


$$p_1 = 0.6, p_2 = 0.3, p_3 = 0.2,$$

$$p_4 = p_5 = 0.3, p_6 = 0.9.$$

Задача L-29.11.

2

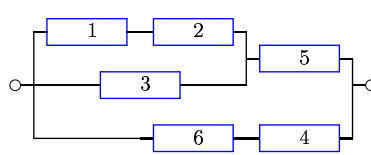


$$p_1 = 0.3, p_2 = 0.4, p_3 = 0.3,$$

$$p_4 = 0.3, p_5 = 0.5, p_6 = 0.8.$$

Задача L-29.12.

2

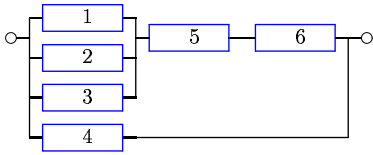


$$p_1 = 0.7, p_2 = 0.3, p_3 = 0.5,$$

$$p_4 = 0.5, p_5 = 0.9, p_6 = 0.8.$$

Задача L-29.13.

2

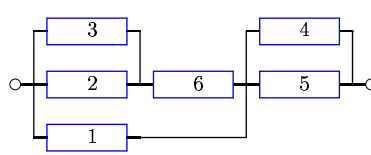


$$p_1 = 0.9, p_2 = 0.5, p_3 = 0.8,$$

$$p_4 = 0.6, p_5 = 0.4, p_6 = 0.3.$$

Задача L-29.14.

2

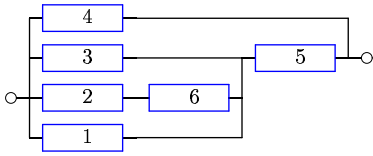


$$p_1 = 0.6, p_2 = 0.8, p_3 = 0.6,$$

$$p_4 = 0.3, p_5 = 0.6, p_6 = 0.3.$$

Задача L-29.15.

2

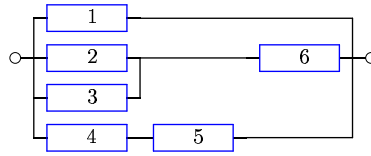


$$p_1 = p_2 = 0.5, p_3 = 0.2,$$

$$p_4 = 0.8, p_5 = 0.5, p_6 = 0.6.$$

Задача L-29.16.

2

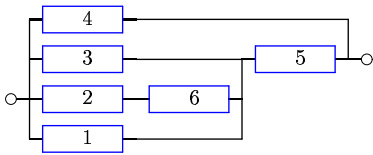


$$p_1 = 0.7, p_2 = 0.2, p_3 = 0.8,$$

$$p_4 = 0.9, p_5 = 0.8, p_6 = 0.6.$$

Задача L-29.17.

2

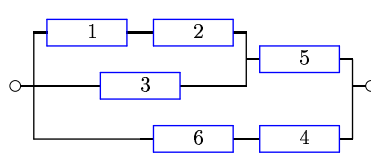


$$p_1 = 0.6, p_2 = 0.4, p_3 = 0.8,$$

$$p_4 = p_5 = 0.6, p_6 = 0.5.$$

Задача L-29.18.

2

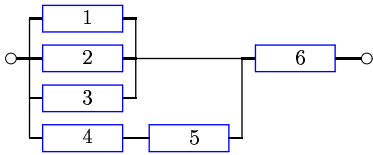


$$p_1 = 0.6, p_2 = 0.2, p_3 = 0.3,$$

$$p_4 = 0.5, p_5 = 0.6, p_6 = 0.7.$$

Задача L-29.19.

2

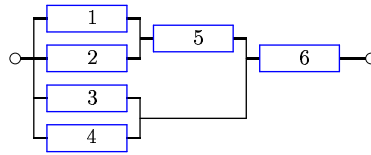


$$p_1 = 0.5, p_2 = 0.2, p_3 = 0.7,$$

$$p_4 = 0.9, p_5 = 0.3, p_6 = 0.8.$$

Задача L-29.20.

2

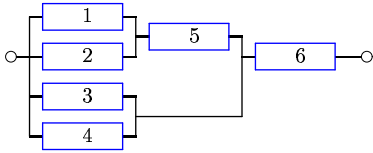


$$p_1 = 0.8, p_2 = 0.5, p_3 = 0.3,$$

$$p_4 = p_5 = 0.3, p_6 = 0.9.$$

Задача L-29.21.

2

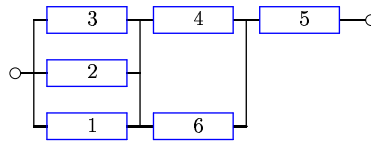


$$p_1 = p_2 = 0.2, p_3 = 0.8,$$

$$p_4 = 0.9, p_5 = 0.5, p_6 = 0.8.$$

Задача L-29.22.

2

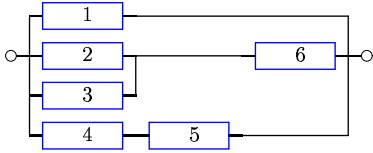


$$p_1 = 0.9, p_2 = 0.2, p_3 = 0.8,$$

$$p_4 = 0.6, p_5 = 0.7, p_6 = 0.8.$$

Задача L-29.23.

2

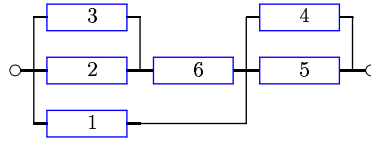


$$p_1 = 0.7, p_2 = 0.4, p_3 = 0.2,$$

$$p_4 = 0.4, p_5 = 0.9, p_6 = 0.8.$$

Задача L-29.24.

2

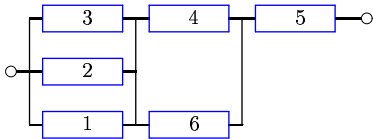


$$p_1 = 0.2, p_2 = 0.6, p_3 = 0.9,$$

$$p_4 = 0.2, p_5 = 0.5, p_6 = 0.9.$$

Задача L-29.25.

2

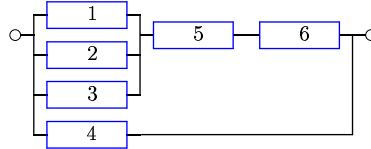


$$p_1 = 0.3, p_2 = 0.5, p_3 = 0.9,$$

$$p_4 = 0.5, p_5 = 0.2, p_6 = 0.8.$$

Задача L-29.26.

2

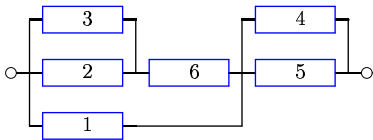


$$p_1 = 0.3, p_2 = 0.9, p_3 = 0.5,$$

$$p_4 = 0.7, p_5 = 0.9, p_6 = 0.4.$$

Задача L-29.27.

2

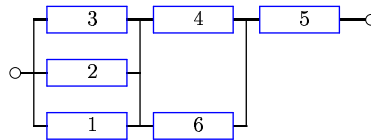


$$p_1 = 0.4, p_2 = 0.2, p_3 = 0.5,$$

$$p_4 = 0.6, p_5 = 0.8, p_6 = 0.3.$$

Задача L-29.28.

2

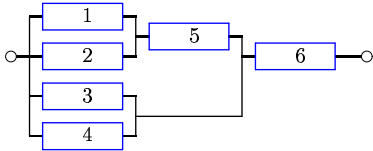


$$p_1 = 0.9, p_2 = 0.4, p_3 = 0.7,$$

$$p_4 = 0.4, p_5 = 0.9, p_6 = 0.6.$$

Задача L-29.29.

2

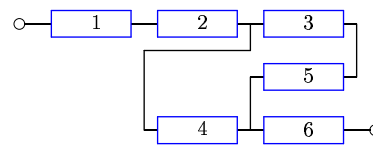


$$p_1 = 0.4, p_2 = 0.3, p_3 = 0.2,$$

$$p_4 = 0.7, p_5 = 0.2, p_6 = 0.9.$$

Задача L-29.30.

2



$$p_1 = 0.2, p_2 = 0.4, p_3 = 0.2,$$

$$p_4 = 0.4, p_5 = 0.8, p_6 = 0.7.$$

Ответы.

Вероятность безотказной работы цепи

22-Jan-16

№	P	Формула, $q_i = 1 - p_i$
1	0.876	$(1 - (1 - (1 - (1 - p_2 p_6) q_1 q_3) p_5) q_4)$
2	0.174	$(1 - (1 - p_2 p_3 p_5) q_4) p_6 p_1;$
3	0.722	$1 - q_1 (1 - p_4 p_5) (1 - (1 - q_2 q_3) p_6)$
4	0.404	$(1 - (1 - (1 - q_2 q_3) p_6) q_1) (1 - q_4 q_5);$
5	0.895	$1 - q_1 (1 - p_4 p_5) (1 - (1 - q_2 q_3) p_6)$
6	0.043	$p_1 p_2 p_6 (1 - (1 - p_3 p_5) q_4);$
7	0.413	$(1 - (1 - (1 - (1 - p_2 p_6) q_1 q_3) p_5) q_4)$
8	0.393	$(1 - (1 - p_1 p_2 p_3 p_5) q_4) p_6;$
9	0.556	$(1 - (1 - (1 - q_1 q_2) p_5) q_3 q_4) p_6$
10	0.747	$1 - (1 - p_5 p_6) q_1 (1 - p_2 (1 - q_3 q_4))$
11	0.300	$1 - (1 - p_5 p_6 p_1) (1 - p_2 (1 - q_3 q_4))$
12	0.727	$1 - (1 - (1 - (1 - p_1 p_2) q_3) p_5) (1 - p_6 p_4)$
13	0.648	$1 - (1 - (1 - q_1 q_2 q_3) p_5 p_6) q_4$
14	0.511	$(1 - (1 - (1 - q_2 q_3) p_6) q_1) (1 - q_4 q_5);$
15	0.872	$(1 - (1 - (1 - (1 - p_2 p_6) q_1 q_3) p_5) q_4)$
16	0.958	$1 - q_1 (1 - p_4 p_5) (1 - (1 - q_2 q_3) p_6)$
17	0.825	$(1 - (1 - (1 - (1 - p_2 p_6) q_1 q_3) p_5) q_4)$
18	0.500	$1 - (1 - (1 - (1 - p_1 p_2) q_3) p_5) (1 - p_6 p_4)$
19	0.730	$(1 - q_1 q_2 q_3 (1 - p_4 p_5)) p_6;$
20	0.578	$(1 - (1 - (1 - q_1 q_2) p_5) q_3 q_4) p_6$
21	0.787	$(1 - (1 - (1 - q_1 q_2) p_5) q_3 q_4) p_6$
22	0.634	$(1 - q_4 q_6) (1 - q_1 q_2 q_3) p_5$
23	0.888	$1 - q_1 (1 - p_4 p_5) (1 - (1 - q_2 q_3) p_6)$
24	0.535	$(1 - (1 - (1 - q_2 q_3) p_6) q_1) (1 - q_4 q_5);$
25	0.174	$(1 - q_4 q_6) (1 - q_1 q_2 q_3) p_5$
26	0.804	$1 - (1 - (1 - q_1 q_2 q_3) p_5 p_6) q_4$
27	0.467	$(1 - (1 - (1 - q_2 q_3) p_6) q_1) (1 - q_4 q_5);$
28	0.672	$(1 - q_4 q_6) (1 - q_1 q_2 q_3) p_5$
29	0.709	$(1 - (1 - (1 - q_1 q_2) p_5) q_3 q_4) p_6$
30	0.028	$p_1 p_2 p_6 (1 - (1 - p_3 p_5) q_4);$