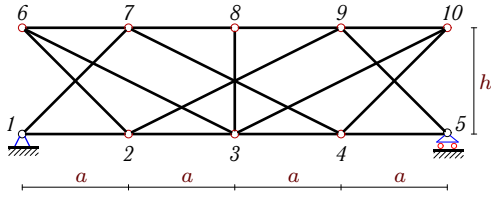


# Линии влияния усилий в стержнях фермы

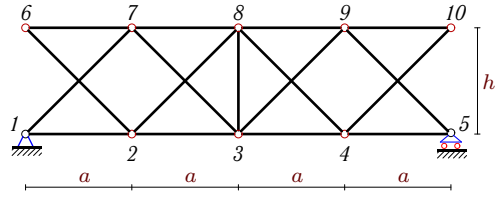
Найти максимальное и минимальное усилие в указанных стержнях фермы от действия постоянной  $q_p$  и временной  $q_{vr}$  нагрузки, равномерно распределенной по нижнему поясу. Дано:  $a = 1$  м,  $h = 1$  м.

**Задача 25.1.**



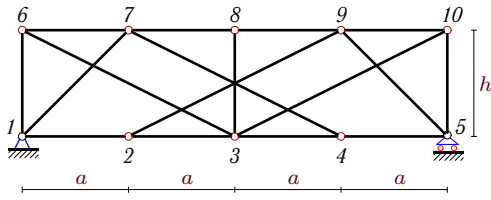
$q_{vr} = 15$  кН/м,  $q_p = 6$  кН/м,  $S_{2-3}, S_{9-10}$ .

**Задача 25.2.**



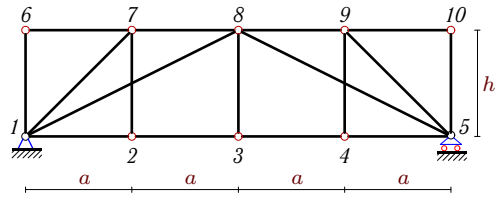
$q_{vr} = 13$  кН/м,  $q_p = 3$  кН/м,  $S_{2-3}, S_{3-8}$ .

**Задача 25.3.**



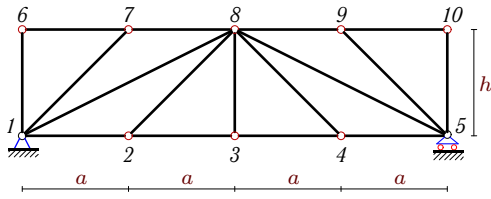
$q_{vr} = 13$  кН/м,  $q_p = 4$  кН/м,  $S_{2-3}, S_{9-10}$ .

**Задача 25.4.**



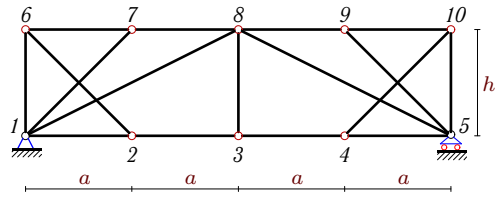
$q_{vr} = 15$  кН/м,  $q_p = 5$  кН/м,  $S_{1-8}, S_{3-8}$ .

**Задача 25.5.**



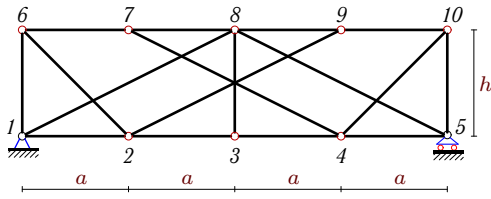
$q_{vr} = 18$  кН/м,  $q_p = 7$  кН/м,  $S_{1-2}, S_{3-8}$ .

**Задача 25.6.**



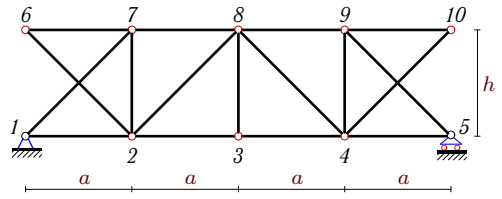
$q_{vr} = 15$  кН/м,  $q_p = 6$  кН/м,  $S_{1-2}, S_{6-7}$ .

**Задача 25.7.**



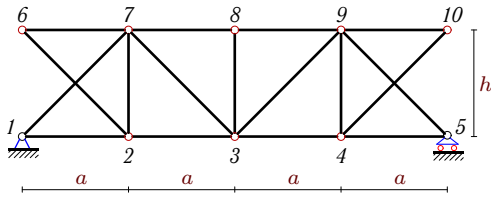
$q_{vr} = 19$  кН/м,  $q_p = 6$  кН/м,  $S_{1-2}, S_{9-10}$ .

**Задача 25.8.**



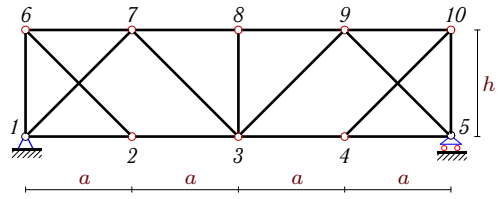
$q_{vr} = 16$  кН/м,  $q_p = 7$  кН/м,  $S_{2-8}, S_{3-8}$ .

**Задача 25.9.**

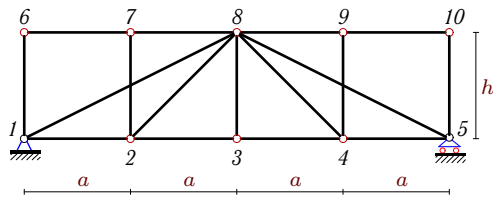


$q_{vr} = 13$  кН/м,  $q_p = 4$  кН/м,  $S_{3-7}, S_{7-8}$ .

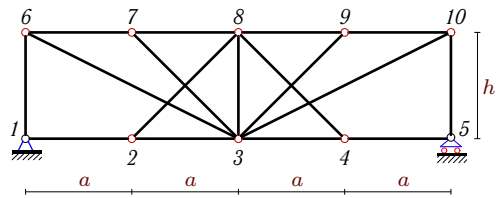
**Задача 25.10.**



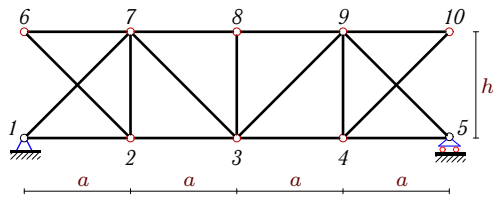
$q_{vr} = 15$  кН/м,  $q_p = 4$  кН/м,  $S_{1-2}, S_{6-7}$ .

**Задача 25.11.**

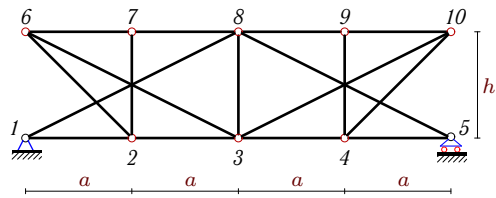
$$q_{vr} = 13 \text{ кН/М}, q_p = 7 \text{ кН/М}, S_{1-2}, S_{3-8}.$$

**Задача 25.12.**

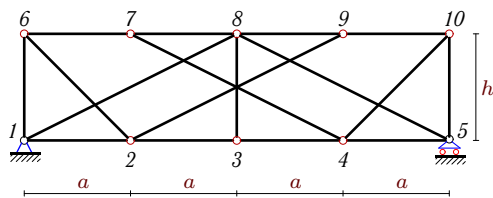
$$q_{vr} = 17 \text{ кН/М}, q_p = 6 \text{ кН/М}, S_{2-3}, S_{9-10}.$$

**Задача 25.13.**

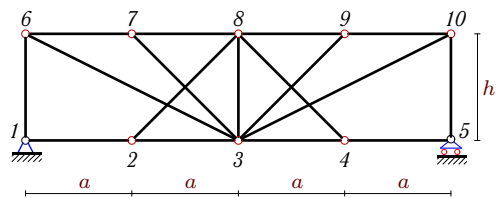
$$q_{vr} = 17 \text{ кН/М}, q_p = 4 \text{ кН/М}, S_{3-7}, S_{8-9}.$$

**Задача 25.14.**

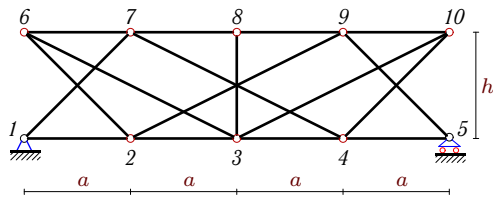
$$q_{vr} = 18 \text{ кН/М}, q_p = 5 \text{ кН/М}, S_{1-2}, S_{3-8}.$$

**Задача 25.15.**

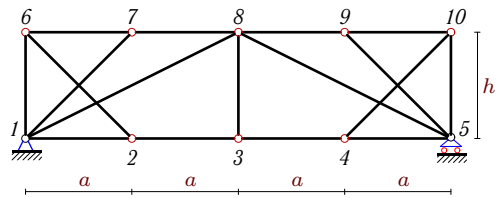
$$q_{vr} = 13 \text{ кН/М}, q_p = 4 \text{ кН/М}, S_{1-2}, S_{8-9}.$$

**Задача 25.16.**

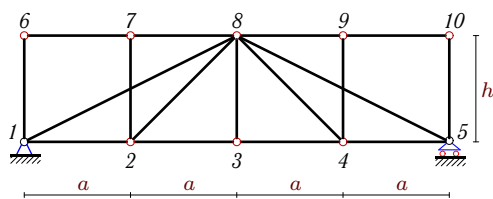
$$q_{vr} = 13 \text{ кН/М}, q_p = 5 \text{ кН/М}, S_{2-3}, S_{7-8}.$$

**Задача 25.17.**

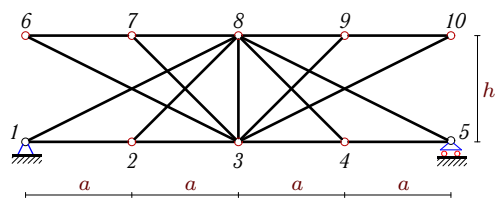
$$q_{vr} = 17 \text{ кН/М}, q_p = 4 \text{ кН/М}, S_{2-3}, S_{8-9}.$$

**Задача 25.18.**

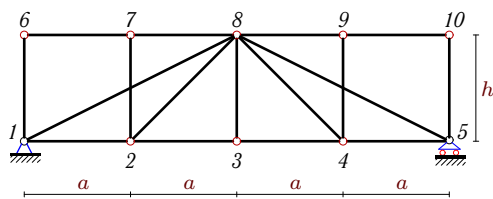
$$q_{vr} = 13 \text{ кН/М}, q_p = 6 \text{ кН/М}, S_{1-2}, S_{9-10}.$$

**Задача 25.19.**

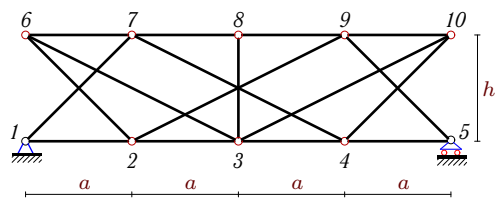
$$q_{vr} = 13 \text{ кН/М}, q_p = 6 \text{ кН/М}, S_{1-2}, S_{3-8}.$$

**Задача 25.20.**

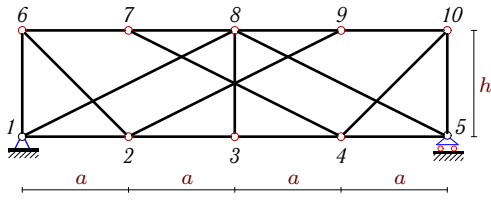
$$q_{vr} = 19 \text{ кН/М}, q_p = 4 \text{ кН/М}, S_{1-2}, S_{3-8}.$$

**Задача 25.21.**

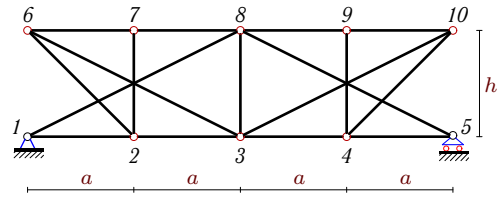
$$q_{vr} = 13 \text{ кН/М}, q_p = 7 \text{ кН/М}, S_{1-2}, S_{3-8}.$$

**Задача 25.22.**

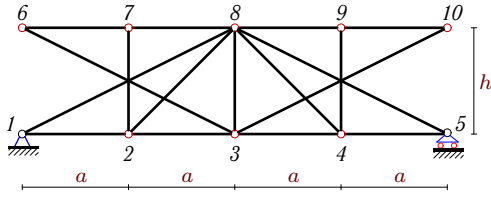
$$q_{vr} = 18 \text{ кН/М}, q_p = 5 \text{ кН/М}, S_{2-3}, S_{7-8}.$$

**Задача 25.23.**

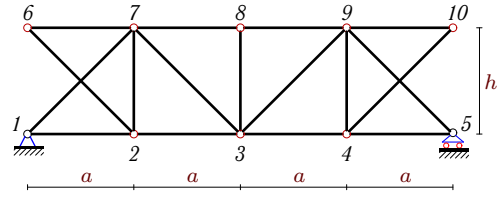
$$q_{vr} = 18 \text{ кН/М}, q_p = 5 \text{ кН/М}, S_{1-2}, S_{7-8}.$$

**Задача 25.24.**

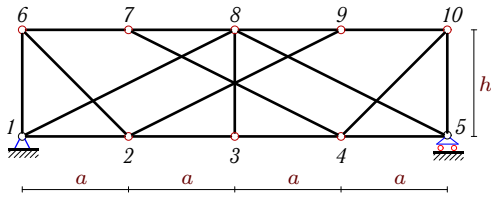
$$q_{vr} = 19 \text{ кН/М}, q_p = 6 \text{ кН/М}, S_{1-2}, S_{8-9}.$$

**Задача 25.25.**

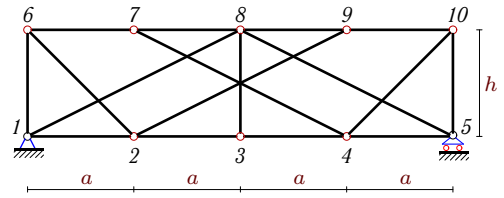
$$q_{vr} = 15 \text{ кН/М}, q_p = 6 \text{ кН/М}, S_{1-2}, S_{3-8}.$$

**Задача 25.26.**

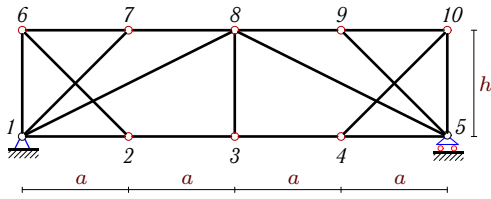
$$q_{vr} = 13 \text{ кН/М}, q_p = 6 \text{ кН/М}, S_{3-7}, S_{1-7}.$$

**Задача 25.27.**

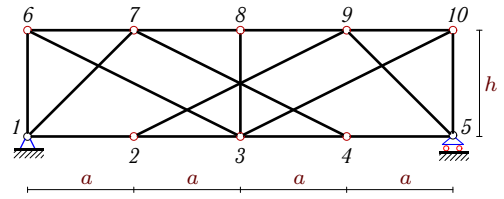
$$q_{vr} = 14 \text{ кН/М}, q_p = 4 \text{ кН/М}, S_{1-2}, S_{6-7}.$$

**Задача 25.28.**

$$q_{vr} = 16 \text{ кН/М}, q_p = 5 \text{ кН/М}, S_{1-2}, S_{7-8}.$$

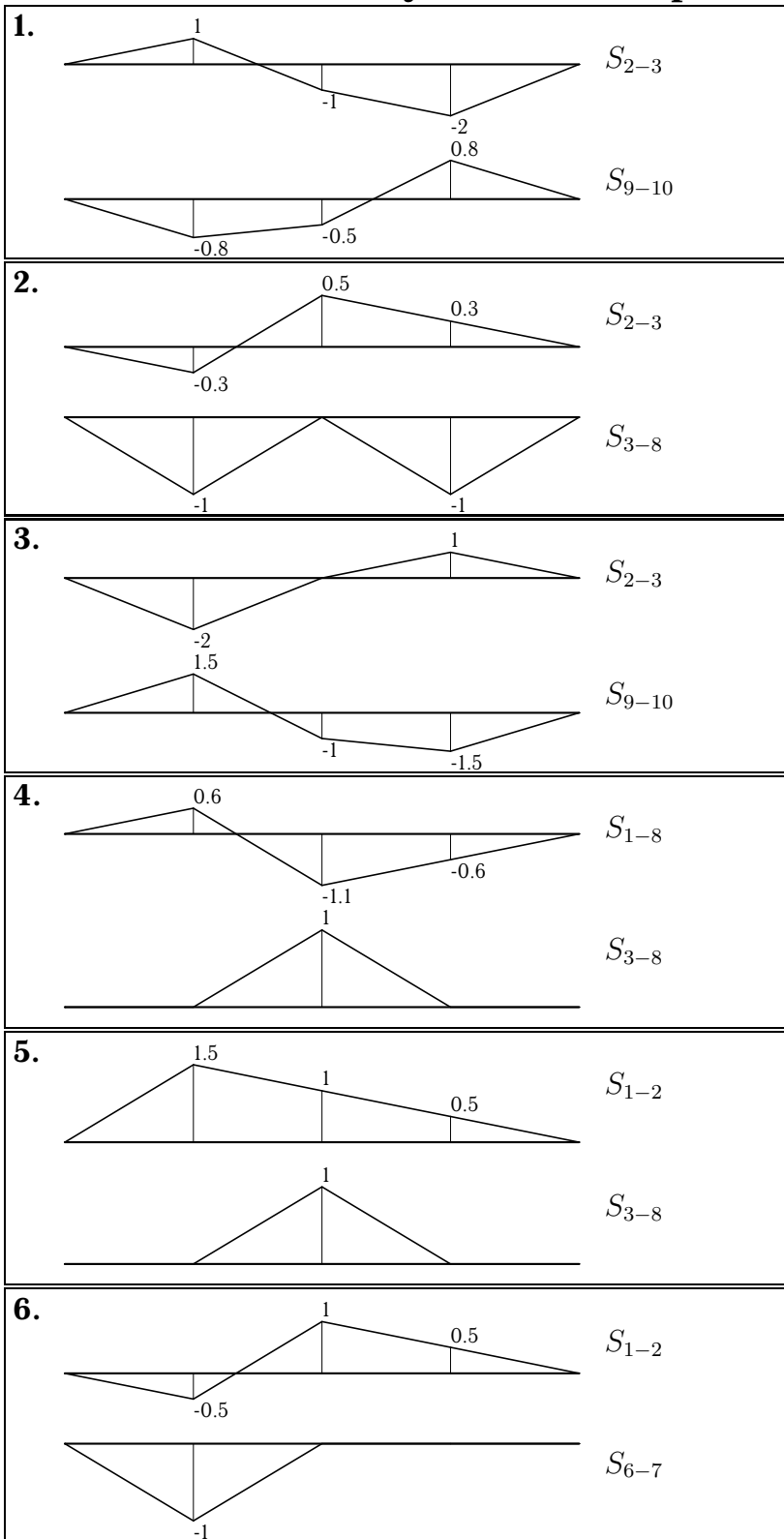
**Задача 25.29.**

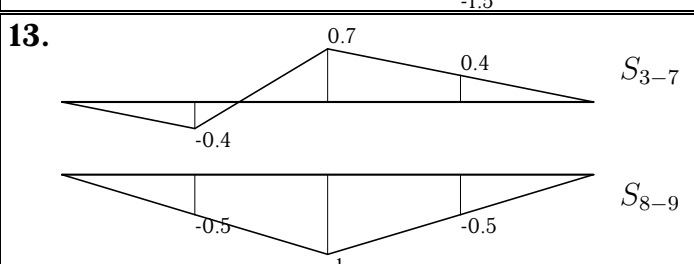
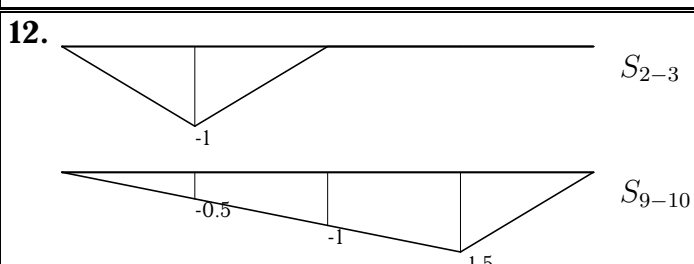
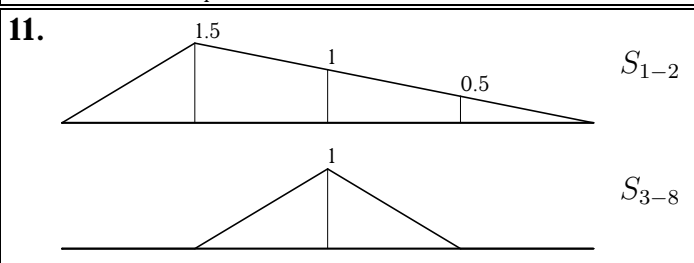
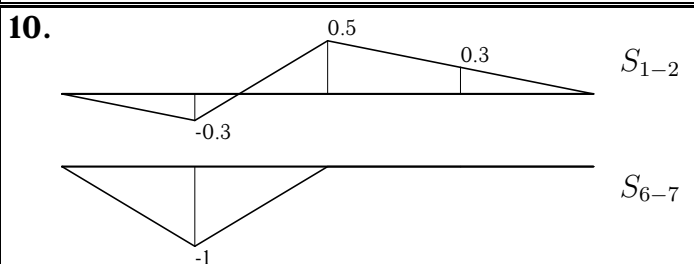
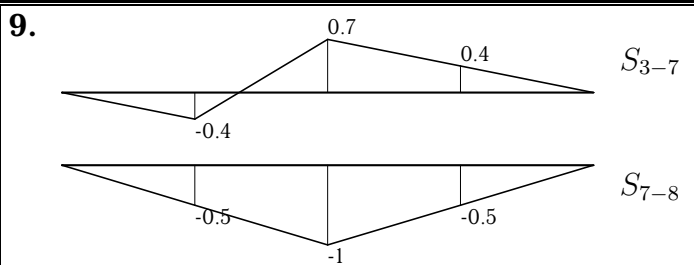
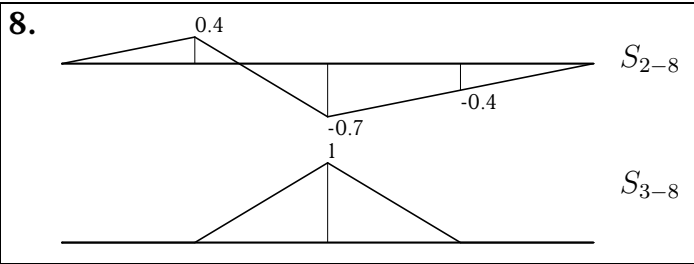
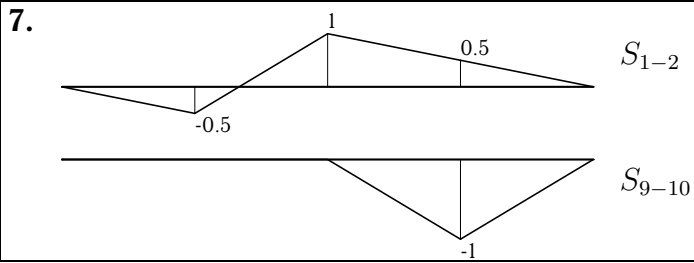
$$q_{vr} = 18 \text{ кН/М}, q_p = 3 \text{ кН/М}, S_{1-2}, S_{6-7}.$$

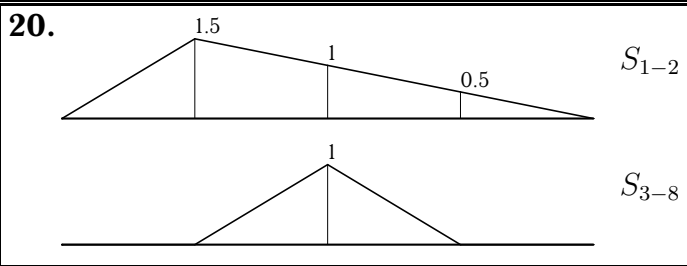
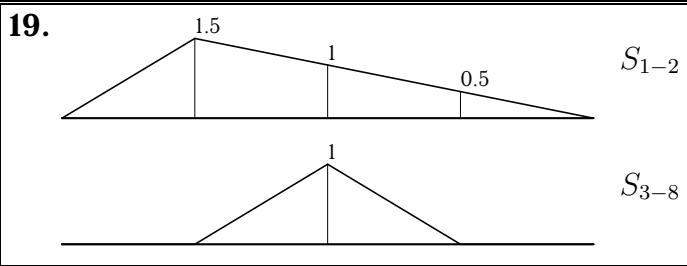
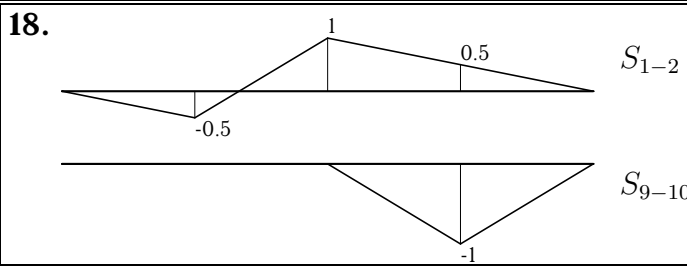
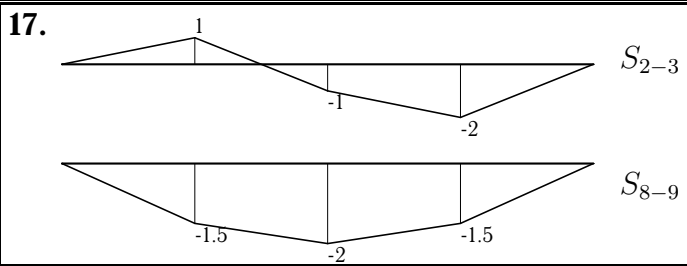
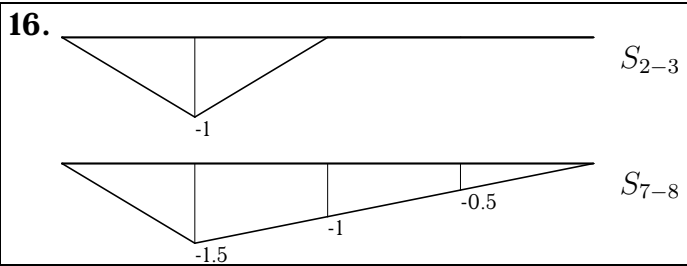
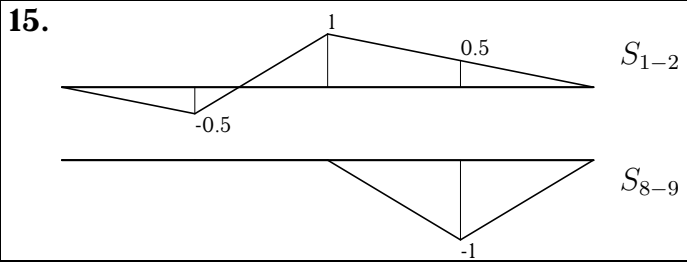
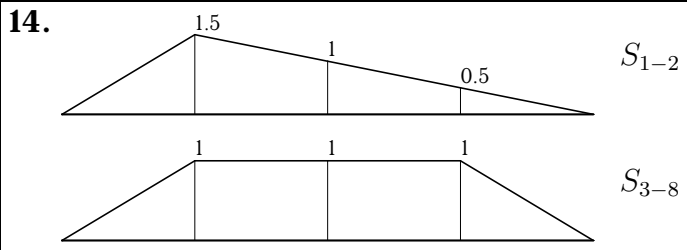
**Задача 25.30.**

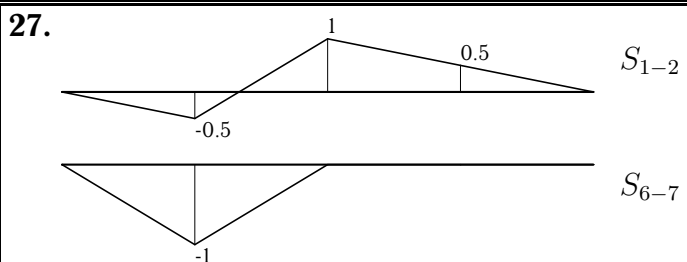
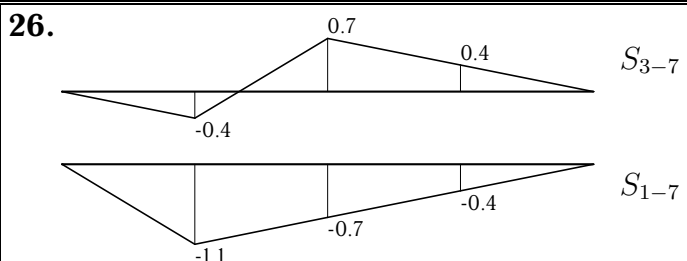
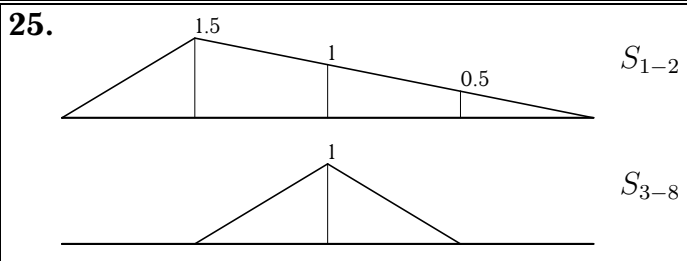
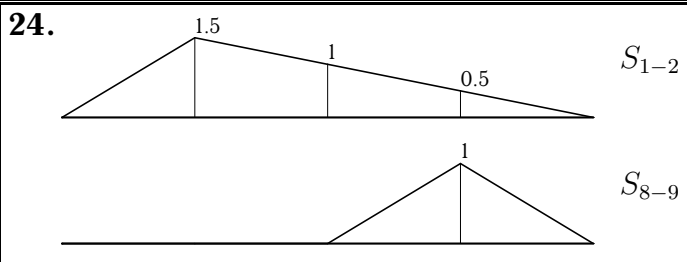
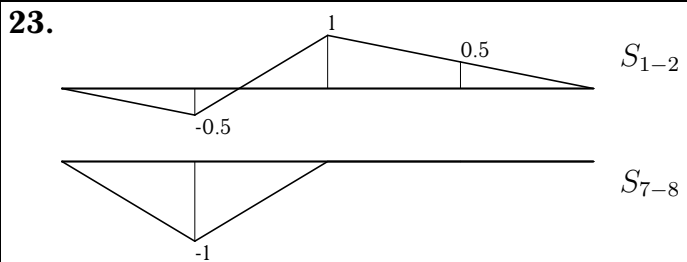
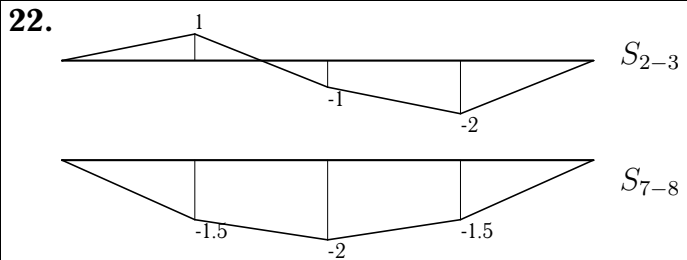
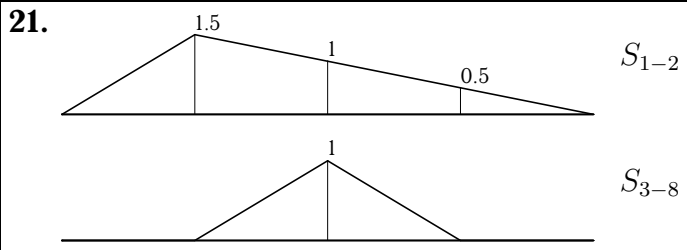
$$q_{vr} = 13 \text{ кН/М}, q_p = 6 \text{ кН/М}, S_{2-3}, S_{6-7}.$$

## Линии влияния усилий в стержнях фермы

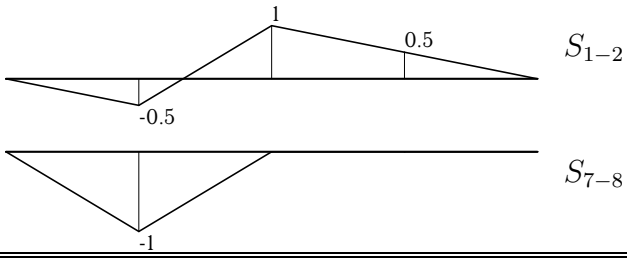




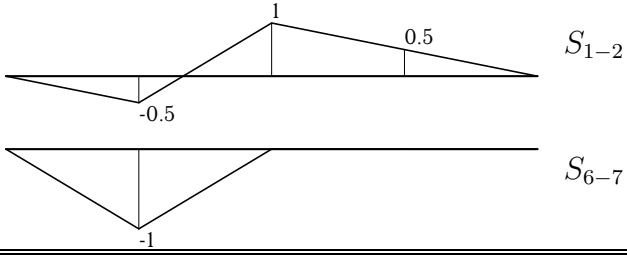




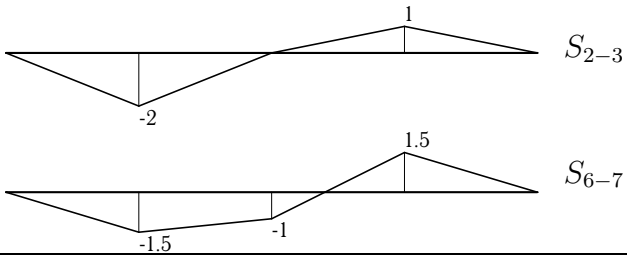
28.



29.



30.





№		$S_p$	$S_{min}$	$S_{max}$		$S_p$	$S_{min}$	$S_{max}$
1	$S_{2-3}$	-12.000	-53.250	-0.750	$S_{9-10}$	-3.000	-19.500	6.000
2	$S_{2-3}$	1.500	-0.667	10.167	$S_{3-8}$	-6.000	-32.000	-6.000
3	$S_{2-3}$	-4.000	-30.000	9.000	$S_{9-10}$	-4.000	-32.600	11.600
4	$S_{1-8}$	-5.590	-27.951	0.000	$S_{3-8}$	5.000	5.000	20.000
5	$S_{1-2}$	21.000	21.000	75.000	$S_{3-8}$	7.000	7.000	25.000
6	$S_{1-2}$	6.000	1.000	26.000	$S_{6-7}$	-6.000	-21.000	-6.000
7	$S_{1-2}$	6.000	-0.333	31.333	$S_{9-10}$	-6.000	-25.000	-6.000
8	$S_{2-8}$	-4.950	-20.035	-1.179	$S_{3-8}$	7.000	7.000	23.000
9	$S_{3-7}$	2.828	-0.236	15.085	$S_{7-8}$	-8.000	-34.000	-8.000
10	$S_{1-2}$	2.000	-0.500	12.000	$S_{6-7}$	-4.000	-19.000	-4.000
11	$S_{1-2}$	21.000	21.000	60.000	$S_{3-8}$	7.000	7.000	20.000
12	$S_{2-3}$	-6.000	-23.000	-6.000	$S_{9-10}$	-18.000	-69.000	-18.000
13	$S_{3-7}$	2.828	-1.179	18.856	$S_{8-9}$	-8.000	-42.000	-8.000
14	$S_{1-2}$	15.000	15.000	69.000	$S_{3-8}$	15.000	15.000	69.000
15	$S_{1-2}$	4.000	-0.333	21.333	$S_{8-9}$	-4.000	-17.000	-4.000
16	$S_{2-3}$	-5.000	-18.000	-5.000	$S_{7-8}$	-15.000	-54.000	-15.000
17	$S_{2-3}$	-8.000	-54.750	4.750	$S_{8-9}$	-20.000	-105.000	-20.000
18	$S_{1-2}$	6.000	1.667	23.333	$S_{9-10}$	-6.000	-19.000	-6.000
19	$S_{1-2}$	18.000	18.000	57.000	$S_{3-8}$	6.000	6.000	19.000
20	$S_{1-2}$	12.000	12.000	69.000	$S_{3-8}$	4.000	4.000	23.000
21	$S_{1-2}$	21.000	21.000	60.000	$S_{3-8}$	7.000	7.000	20.000
22	$S_{2-3}$	-10.000	-59.500	3.500	$S_{7-8}$	-25.000	-115.000	-25.000
23	$S_{1-2}$	5.000	-1.000	29.000	$S_{7-8}$	-5.000	-23.000	-5.000
24	$S_{1-2}$	18.000	18.000	75.000	$S_{8-9}$	6.000	6.000	25.000
25	$S_{1-2}$	18.000	18.000	63.000	$S_{3-8}$	6.000	6.000	21.000
26	$S_{3-7}$	4.243	1.179	16.499	$S_{1-7}$	-12.728	-40.305	-12.728
27	$S_{1-2}$	4.000	-0.667	22.667	$S_{6-7}$	-4.000	-18.000	-4.000
28	$S_{1-2}$	5.000	-0.333	26.333	$S_{7-8}$	-5.000	-21.000	-5.000
29	$S_{1-2}$	3.000	-3.000	27.000	$S_{6-7}$	-3.000	-21.000	-3.000
30	$S_{2-3}$	-6.000	-32.000	7.000	$S_{6-7}$	-6.000	-34.600	9.600