

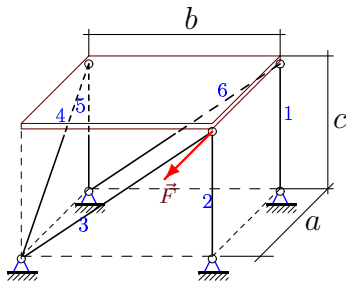
Равновесие плиты

Однородная прямоугольная горизонтальная плита весом G опирается на шесть невесомых шарнирно закрепленных по концам стержней. Вдоль ребра плиты действует сила F . Определить усилия в стержнях (в кН).

Кирсанов М.Н. **Решebник. Теоретическая механика**/Под ред. А. И. Кириллова. – М.: ФИЗМАТЛИТ, 2008. — 384 с. (с.101.)

Задача S-13.1.

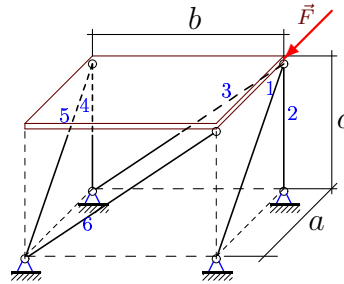
11



$$a = b = 3 \text{ м}, c = 4 \text{ м}, \\ F = 3 \text{ кН}, G = 48 \text{ кН}.$$

Задача S-13.2.

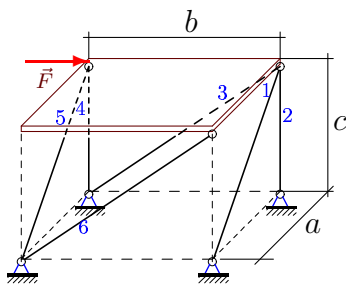
11



$$a = b = 5 \text{ м}, c = 12 \text{ м}, \\ F = 15 \text{ кН}, G = 48 \text{ кН}.$$

Задача S-13.3.

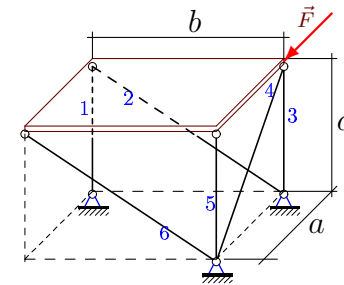
11



$$a = b = 8 \text{ м}, c = 15 \text{ м}, \\ F = 8 \text{ кН}, G = 150 \text{ кН}.$$

Задача S-13.4.

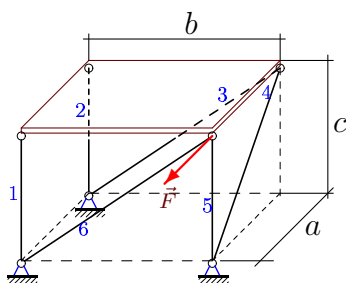
11



$$a = b = 3 \text{ м}, c = 4 \text{ м}, \\ F = 3 \text{ кН}, G = 10 \text{ кН}.$$

Задача S-13.5.

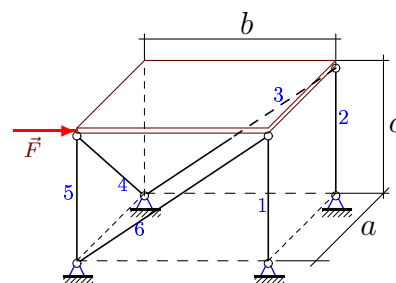
11



$$a = b = 4 \text{ м}, c = 3 \text{ м}, \\ F = 28 \text{ кН}, G = 18 \text{ кН}.$$

Задача S-13.6.

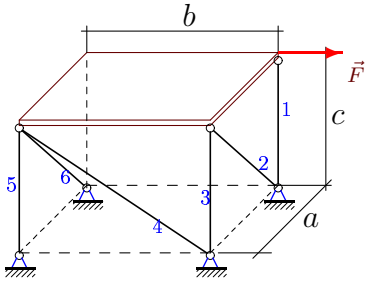
11



$$a = b = 15 \text{ м}, c = 8 \text{ м}, \\ F = 15 \text{ кН}, G = 48 \text{ кН}.$$

Задача S-13.7.

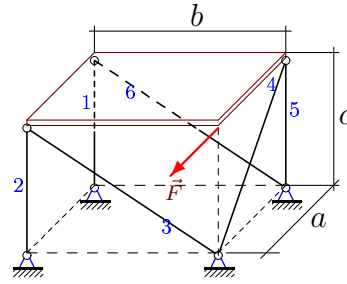
11



$a = b = 4 \text{ м}, c = 3 \text{ м},$
 $F = 4 \text{ кН}, G = 2 \text{ кН}.$

Задача S-13.8.

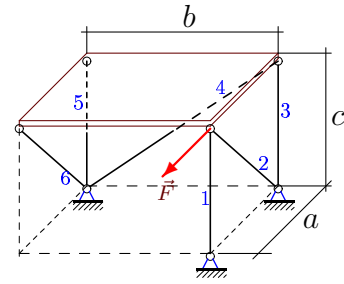
11



$a = b = 15 \text{ м}, c = 8 \text{ м},$
 $F = 15 \text{ кН}, G = 16 \text{ кН}.$

Задача S-13.9.

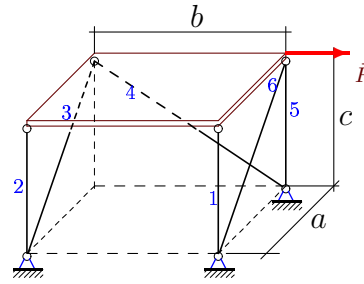
11



$a = b = 15 \text{ м}, c = 8 \text{ м},$
 $F = 15 \text{ кН}, G = 16 \text{ кН}.$

Задача S-13.10.

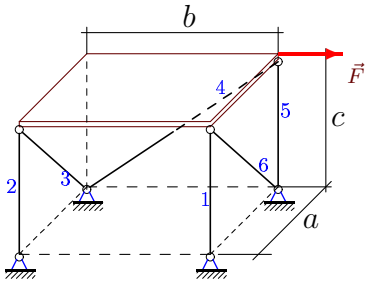
11



$a = b = 15 \text{ м}, c = 8 \text{ м},$
 $F = 105 \text{ кН}, G = 80 \text{ кН}.$

Задача S-13.11.

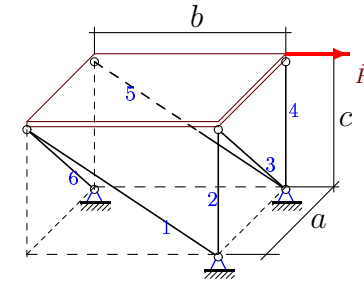
11



$a = b = 12 \text{ м}, c = 5 \text{ м},$
 $F = 12 \text{ кН}, G = 30 \text{ кН}.$

Задача S-13.12.

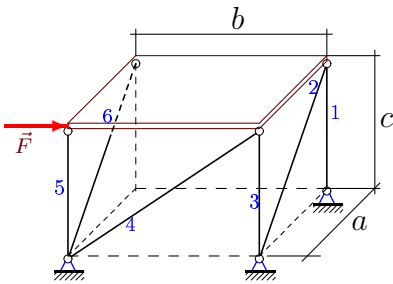
11



$a = b = 8 \text{ м}, c = 15 \text{ м},$
 $F = 32 \text{ кН}, G = 210 \text{ кН}.$

Задача S-13.13.

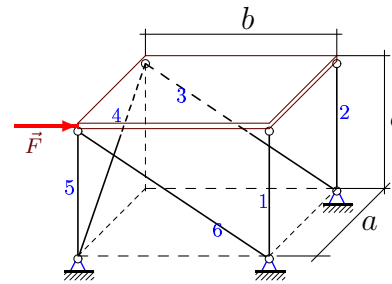
11



$a = b = 5 \text{ м}, c = 12 \text{ м},$
 $F = 5 \text{ кН}, G = 32 \text{ кН}.$

Задача S-13.14.

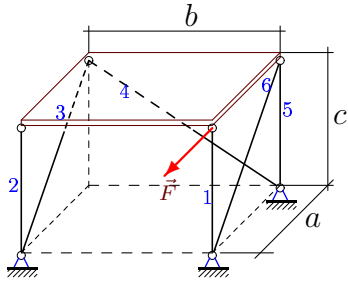
11



$a = b = 5 \text{ м}, c = 12 \text{ м},$
 $F = 5 \text{ кН}, G = 12 \text{ кН}.$

Задача S-13.15.

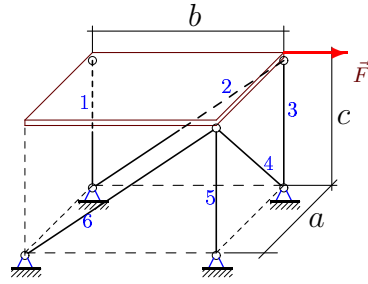
11



$a = b = 12 \text{ м}, c = 5 \text{ м},$
 $F = 72 \text{ кН}, G = 10 \text{ кН}.$

Задача S-13.16.

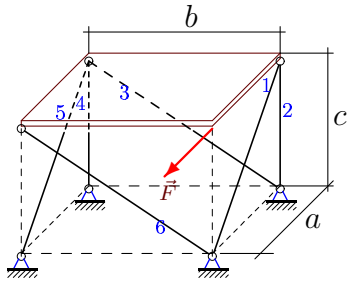
11



$a = b = 5 \text{ м}, c = 12 \text{ м},$
 $F = 5 \text{ кН}, G = 24 \text{ кН}.$

Задача S-13.17.

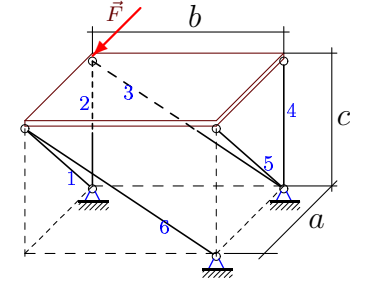
11



$a = b = 8 \text{ м}, c = 15 \text{ м},$
 $F = 16 \text{ кН}, G = 90 \text{ кН}.$

Задача S-13.18.

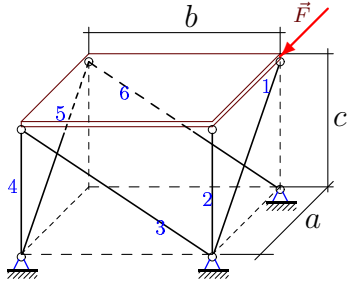
11



$a = b = 5 \text{ м}, c = 12 \text{ м},$
 $F = 20 \text{ кН}, G = 24 \text{ кН}.$

Задача S-13.19.

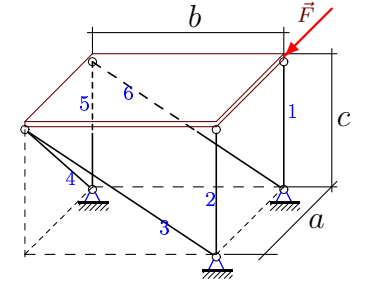
11



$a = b = 12 \text{ м}, c = 5 \text{ м},$
 $F = 84 \text{ кН}, G = 30 \text{ кН}.$

Задача S-13.20.

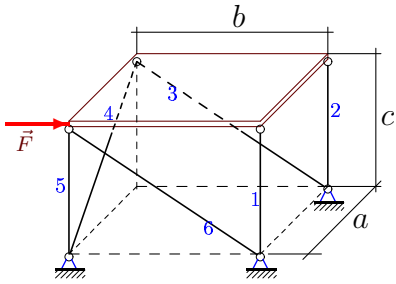
11



$a = b = 4 \text{ м}, c = 3 \text{ м},$
 $F = 4 \text{ кН}, G = 4 \text{ кН}.$

Задача S-13.21.

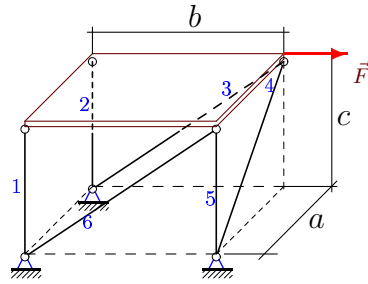
11



$a = b = 3 \text{ м}, c = 4 \text{ м},$
 $F = 3 \text{ кН}, G = 14 \text{ кН}.$

Задача S-13.22.

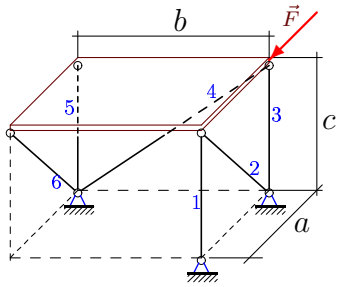
11



$a = b = 8 \text{ м}, c = 15 \text{ м},$
 $F = 8 \text{ кН}, G = 36 \text{ кН}.$

Задача S-13.23.

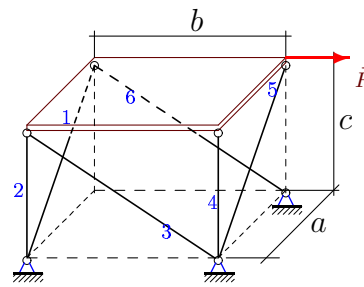
11



$a = b = 15 \text{ м}, c = 8 \text{ м},$
 $F = 15 \text{ кН}, G = 32 \text{ кН}.$

Задача S-13.24.

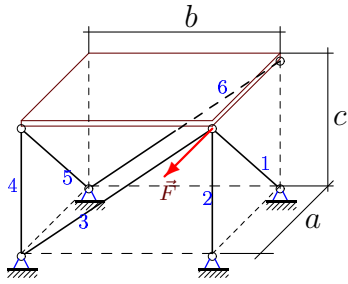
11



$a = b = 4 \text{ м}, c = 3 \text{ м},$
 $F = 4 \text{ кН}, G = 36 \text{ кН}.$

Задача S-13.25.

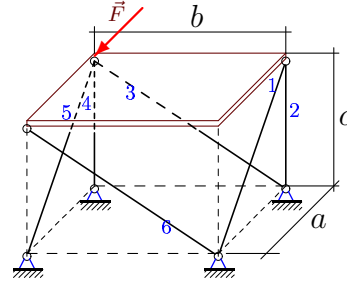
11



$a = b = 8 \text{ м}, c = 15 \text{ м},$
 $F = 56 \text{ кН}, G = 180 \text{ кН}.$

Задача S-13.26.

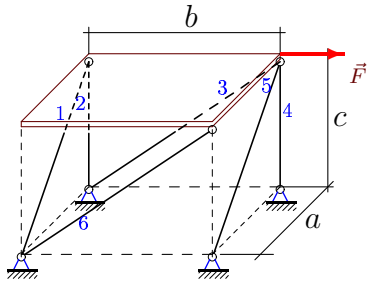
11



$a = b = 12 \text{ м}, c = 5 \text{ м},$
 $F = 60 \text{ кН}, G = 10 \text{ кН}.$

Задача S-13.27.

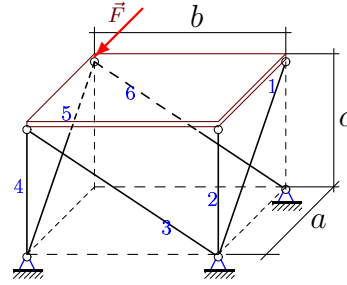
11



$a = b = 15 \text{ м}, c = 8 \text{ м},$
 $F = 30 \text{ кН}, G = 16 \text{ кН}.$

Задача S-13.28.

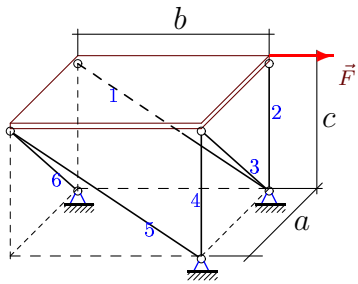
11



$a = b = 15 \text{ м}, c = 8 \text{ м},$
 $F = 60 \text{ кН}, G = 112 \text{ кН}.$

Задача S-13.29.

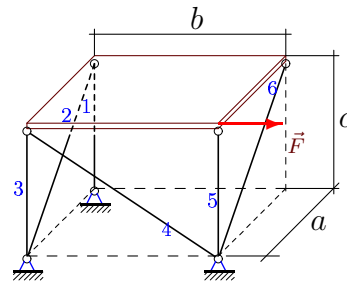
11



$a = b = 15 \text{ м}, c = 8 \text{ м},$
 $F = 45 \text{ кН}, G = 64 \text{ кН}.$

Задача S-13.30.

11



$a = b = 15 \text{ м}, c = 8 \text{ м},$
 $F = 75 \text{ кН}, G = 32 \text{ кН}.$

S-13

Ответы.
Равновесие плиты

16.02.2015

№	S_1	S_2	S_3	S_4	S_5	S_6
1	-4	-20	-5	-5	-20	5
2	-13	-12	26	0	-26	-26
3	85	-165	102	0	-85	-85
4	-5	0	4	-5	-5	0
5	-21	12	0	-35	12	0
6	-8	-24	0	0	-24	17
7	-1	5	-3	-5	5	-5
8	0	-8	0	-17	0	0
9	-16	17	0	0	-8	0
10	-56	16	0	-119	16	0
11	0	-15	0	13	-20	0
12	-51	-60	51	-90	-17	-51
13	-16	0	-12	13	-16	0
14	0	-6	0	0	6	-13
15	0	-5	0	0	25	-78
16	-12	13	-12	0	-12	0
17	-85	30	51	-90	51	-51
18	-13	0	65	-72	65	-65
19	-143	40	-52	-35	52	52
20	6	-8	5	5	-5	-5
21	0	-7	0	0	-3	-5
22	15	-33	17	0	-33	0
23	-24	17	0	0	-16	0
24	-25	0	25	-33	25	-30
25	221	-285	102	0	-102	-102
26	-13	0	13	15	-52	-13
27	-17	0	51	-32	17	-17
28	51	-80	51	0	-119	-51
29	-34	-16	17	-24	-17	-17
30	-16	0	40	-85	-16	0

S-13 файл о13s11A