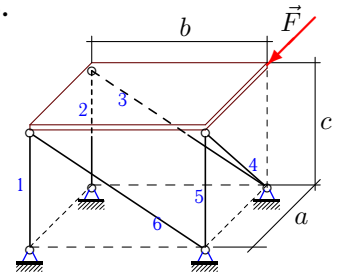
Определение усилий в стержнях, поддерживающих плиту

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. **Решебник. Теоретическая механика** с. 101.

Вариант 1

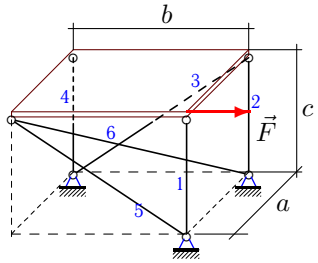
C13.



$a = 5$ м, $b = 4$ м, $c = 3$ м ,
$F = 1$ кН, $G = 3$ кН.

Вариант 2

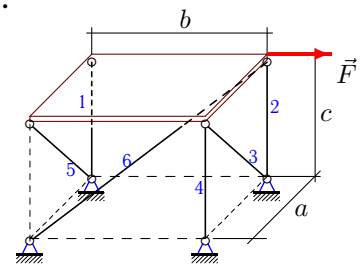
C13.



$a = 2$ м, $b = 3$ м, $c = 4$ м ,
$F = 2$ кН, $G = 7$ кН.

Вариант 3

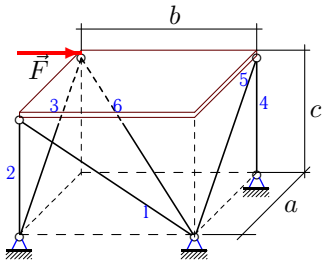
C13.



$a = 6$ м, $b = 5$ м, $c = 4$ м ,
$F = 3$ кН, $G = 9$ кН.

Вариант 4

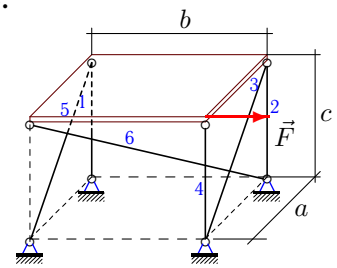
C13.



$a = 4$ м, $b = 6$ м, $c = 5$ м ,
$F = 4$ кН, $G = 11$ кН.

Вариант 5

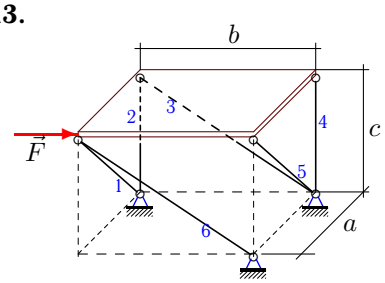
C13.



$a = 4$ м, $b = 6$ м, $c = 5$ м ,
$F = 5$ кН, $G = 6$ кН.

Вариант 6

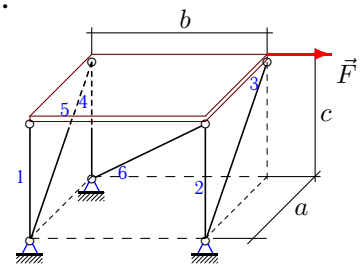
C13.



$a = 3$ м, $b = 4$ м, $c = 3$ м ,
$F = 6$ кН, $G = 9$ кН.

Вариант 7

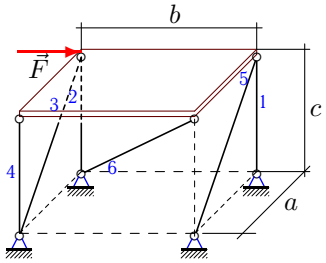
C13.



$a = 4$ м, $b = 6$ м, $c = 5$ м ,
$F = 7$ кН, $G = 12$ кН.

Вариант 8

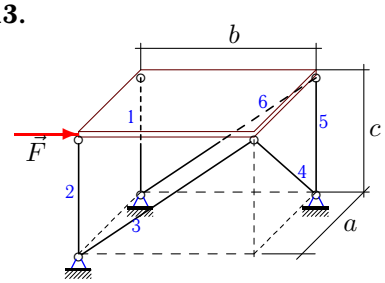
C13.



$a = 4$ м, $b = 6$ м, $c = 5$ м ,
$F = 8$ кН, $G = 11$ кН.

Вариант 9

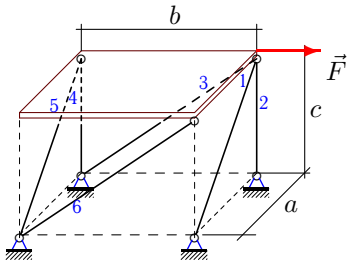
C13.



$a = 6$ м, $b = 5$ м, $c = 4$ м ,
$F = 9$ кН, $G = 17$ кН.

Вариант 10

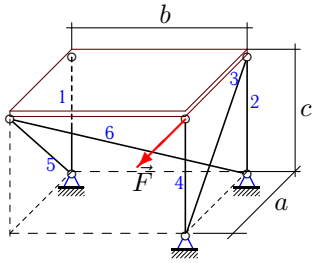
C13.



$a = 5$ м, $b = 4$ м, $c = 3$ м ,
$F = 10$ кН, $G = 18$ кН.

Вариант 11

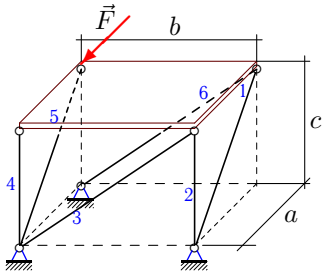
C13.



$a = 7$ м, $b = 6$ м, $c = 5$ м ,
$F = 11$ кН, $G = 14$ кН.

Вариант 12

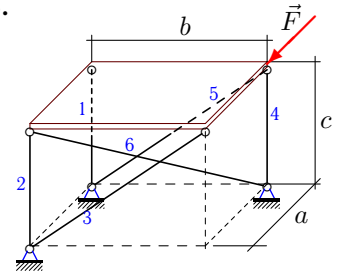
C13.



$a = 6$ м, $b = 5$ м, $c = 4$ м ,
$F = 12$ кН, $G = 16$ кН.

Вариант 13

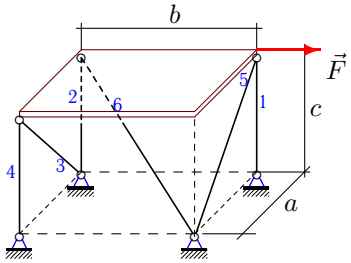
C13.



$a = 3$ м, $b = 4$ м, $c = 3$ м ,
$F = 13$ кН, $G = 15$ кН.

Вариант 14

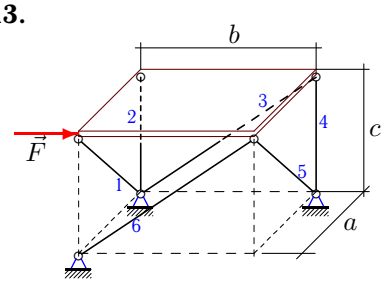
C13.



$a = 3$ м, $b = 4$ м, $c = 3$ м ,
$F = 14$ кН, $G = 20$ кН.

Вариант 15

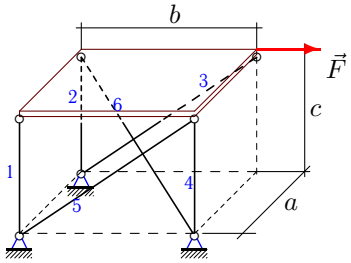
C13.



$a = 4$ м, $b = 6$ м, $c = 5$ м ,
$F = 15$ кН, $G = 16$ кН.

Вариант 16

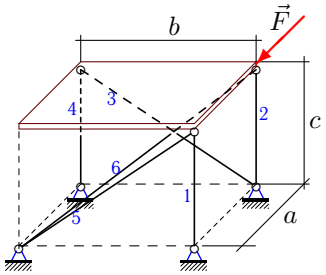
C13.



$a = 5$ м, $b = 4$ м, $c = 3$ м ,
$F = 16$ кН, $G = 19$ кН.

Вариант 17

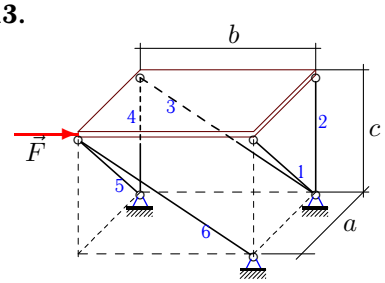
C13.



$a = 3$ м, $b = 4$ м, $c = 3$ м ,
$F = 17$ кН, $G = 27$ кН.

Вариант 18

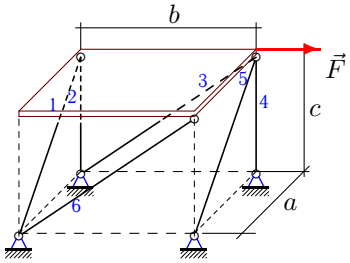
C13.



$a = 6$ м, $b = 5$ м, $c = 4$ м ,
$F = 18$ кН, $G = 21$ кН.

Вариант 19

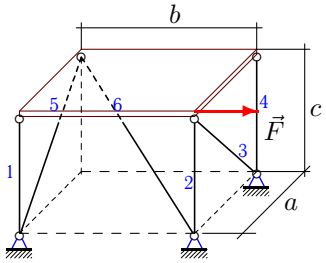
C13.



$a = 3$ м, $b = 4$ м, $c = 3$ м ,
$F = 19$ кН, $G = 27$ кН.

Вариант 20

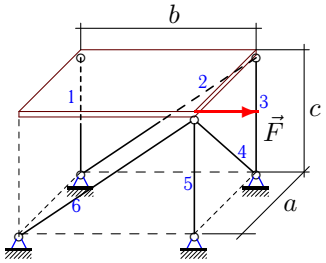
C13.



$a = 6$ м, $b = 5$ м, $c = 4$ м ,
$F = 20$ кН, $G = 22$ кН.

Вариант 21

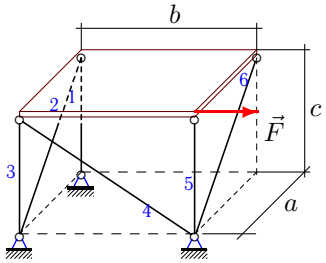
C13.



$a = 7$ м, $b = 6$ м, $c = 5$ м ,
$F = 21$ кН, $G = 31$ кН.

Вариант 22

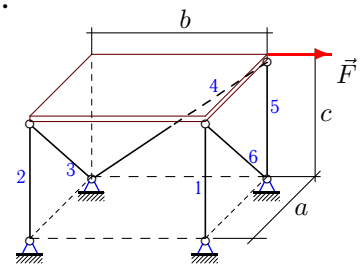
C13.



$a = 5$ м, $b = 4$ м, $c = 3$ м ,
$F = 22$ кН, $G = 26$ кН.

Вариант 23

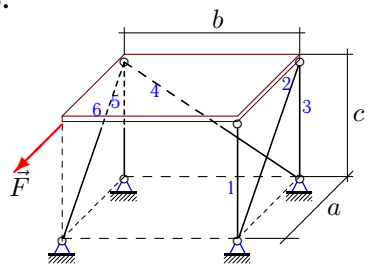
C13.



$a = 6$ м, $b = 5$ м, $c = 4$ м ,
$F = 23$ кН, $G = 28$ кН.

Вариант 24

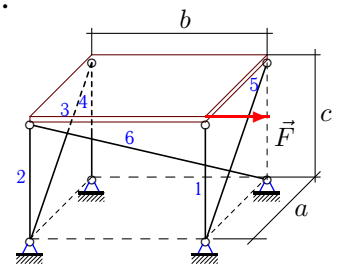
C13.



$a = 2$ м, $b = 3$ м, $c = 4$ м ,
$F = 24$ кН, $G = 32$ кН.

Вариант 25

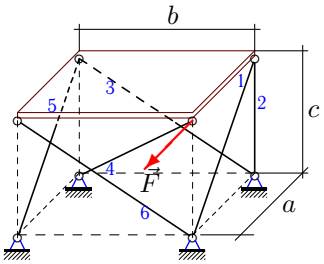
C13.



$a = 4$ м, $b = 6$ м, $c = 5$ м ,
$F = 25$ кН, $G = 32$ кН.

Вариант 26

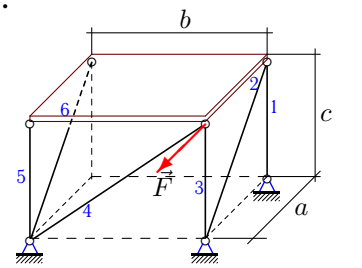
C13.



$a = 4$ м, $b = 6$ м, $c = 5$ м ,
$F = 26$ кН, $G = 32$ кН.

Вариант 27

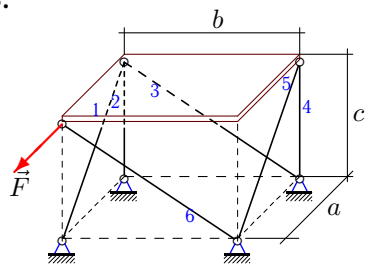
C13.



$a = 2$ м, $b = 3$ м, $c = 4$ м ,
$F = 27$ кН, $G = 29$ кН.

Вариант 28

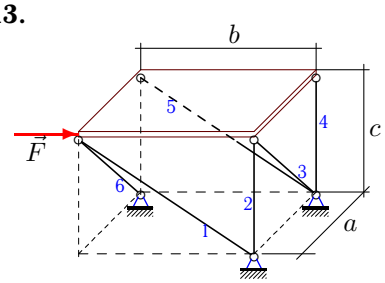
C13.



$a = 5$ м, $b = 4$ м, $c = 3$ м ,
$F = 28$ кН, $G = 34$ кН.

Вариант 29

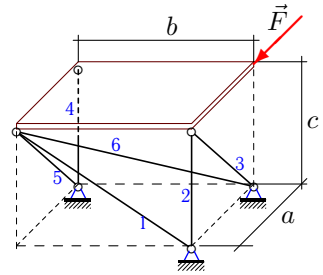
C13.



$a = 7$ м, $b = 6$ м, $c = 5$ м ,
$F = 29$ кН, $G = 34$ кН.

Вариант 30

C13.



$a = 4$ м, $b = 6$ м, $c = 5$ м ,
$F = 30$ кН, $G = 34$ кН.

Ответы

	S_1	S_2	S_3	S_4	S_5	S_6
1	0.000	−1.500	0.000	1.166	−2.100	0.000
2	−0.833	−2.667	0.000	−0.833	−3.333	0.000
3	−4.500	−2.400	4.327	−6.900	0.000	5.265
4	0.000	−5.500	4.269	−5.500	0.000	−5.850
5	5.333	−4.167	0.000	1.167	−5.336	−7.312
6	0.000	0.000	0.000	−4.500	0.000	−7.500
7	−0.000	−11.833	0.000	−11.833	7.470	10.237
8	−12.167	0.000	8.537	−12.167	0.000	11.700
9	7.200	−15.700	11.526	0.000	−15.700	0.000
10	17.493	−25.500	27.500	−0.000	−17.493	−15.000
11	−7.000	7.857	−13.518	−7.000	0.000	0.000
12	−0.000	−8.000	0.000	0.000	−14.422	−0.000
13	0.000	−20.500	0.000	−20.500	21.667	25.267
14	−10.000	10.500	−14.849	0.500	0.000	−20.408
15	26.253	−28.500	32.022	0.000	−26.253	−12.496
16	12.000	−21.500	20.000	−21.500	0.000	0.000
17	−13.500	17.000	−28.333	3.500	0.000	−33.042
18	−7.031	−6.600	−6.243	0.000	7.031	−16.808
19	−19.092	−0.000	46.250	−41.250	19.092	−22.500
20	5.000	0.000	−28.844	5.000	0.000	−35.100
21	−15.500	0.000	0.000	0.000	−33.000	27.336
22	−13.000	0.000	16.500	−27.500	−13.000	0.000
23	0.000	−14.000	0.000	29.454	−32.400	0.000
24	−16.000	0.000	0.000	0.000	32.000	−53.666
25	−16.000	20.833	−26.680	4.833	0.000	−36.562
26	−48.450	32.500	−8.331	−18.720	−6.830	−8.331
27	39.500	−60.374	0.000	0.000	−14.500	0.000
28	0.389	−17.200	28.333	−0.000	−33.042	−28.333
29	−26.555	−0.000	−12.330	−9.833	−11.195	12.330
30	0.000	−54.500	48.023	−17.000	0.000	−0.000