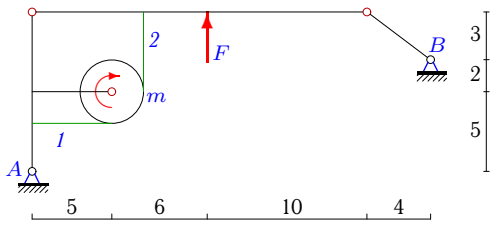
Составная конструкция из трех тел с нитью

Определить реакции опор конструкции (в кН) и натяжения частей нити. Нить огибает цилиндр весом G и соединяет части конструкции. Размеры даны в метрах. Конструкция расположена в вертикальной плоскости.

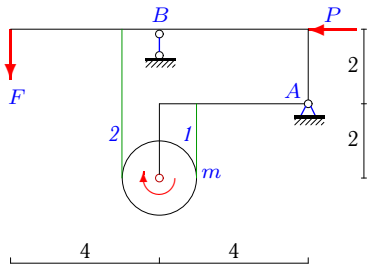
Кирсанов М.Н. Задачи по теоретической механике с решениями в **Maple** 11. – М.: ФИЗМАТЛИТ, 2010. — 264 с. (с.15)

Задача S30.1.



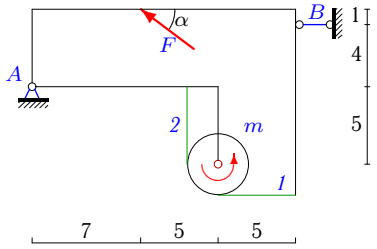
$G = 104$ кН, $F = 49$ кН, $m = 290$ кНм, $r = 2$ м.

Задача S30.2.



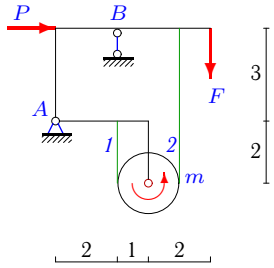
$G = 32$ кН, $F = 16$ кН, $m = 68$ кНм, $P = 16$ кН, $r = 1$ м.

Задача S30.3.



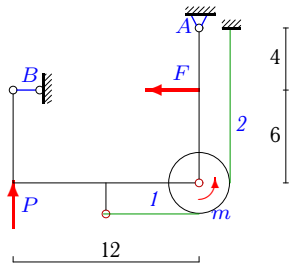
$G = 29$ кН, $F = 20$ кН, $m = 180$ кНм, $r = 2$ м, $\cos\alpha = 0.8$.

Задача S30.4.



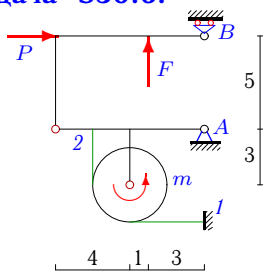
$G = 8$ кН, $F = 2$ кН, $m = 20$ кНм, $P = 4$ кН, $r = 1$ м.

Задача S30.5.



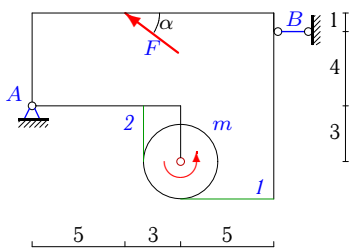
$G = 7$ кН, $F = 15$ кН, $m = 4$ кНм, $P = 2$ кН, $r = 2$ м.

Задача S30.6.



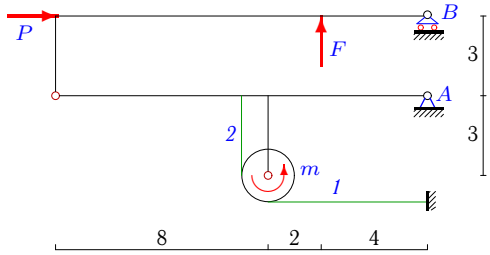
$G = 14$ кН, $F = 16$ кН, $m = 42$ кНм, $P = 16$ кН, $r = 2$ м.

Задача S30.7.



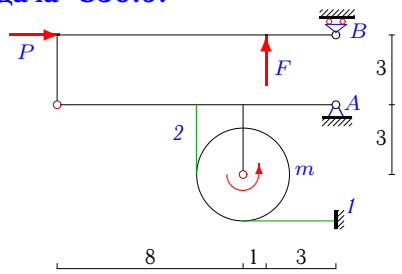
$G = 27$ кН, $F = 20$ кН, $m = 176$ кНм, $r = 2$ м, $\cos\alpha = 0.8$.

Задача S30.8.



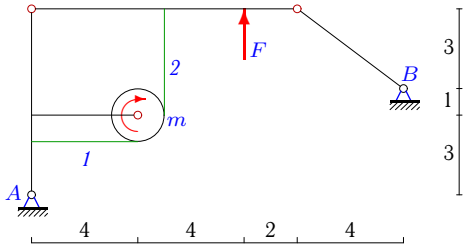
$G = 10$ кН, $F = 7$ кН, $m = 86$ кНм, $P = 42$ кН, $r = 1$ м.

Задача S30.9.



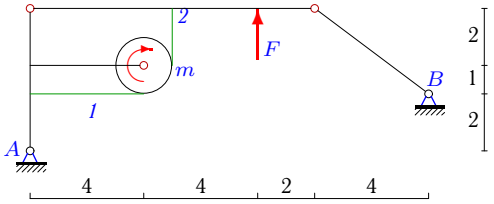
$G = 18$ кН, $F = 24$ кН, $m = 206$ кНм,
$P = 72$ кН, $r = 2$ м.

Задача S30.10.



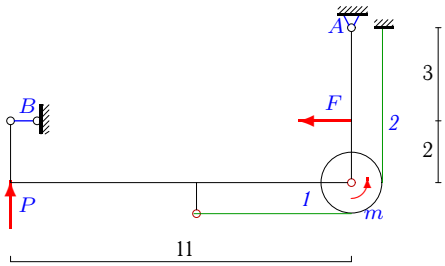
$G = 106$ кН, $F = 55$ кН, $m = 158$ кНм,
$r = 1$ м.

Задача S30.11.



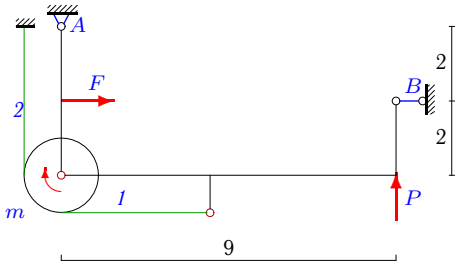
$G = 62$ кН, $F = 35$ кН, $m = 18$ кНм,
$r = 1$ м.

Задача S30.12.



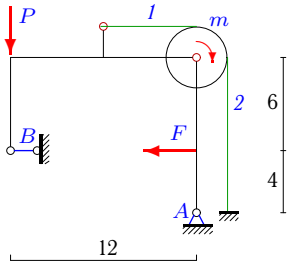
$G = 13$ кН, $F = 15$ кН, $m = 4$ кНм,
$P = 2$ кН, $r = 1$ м.

Задача S30.13.



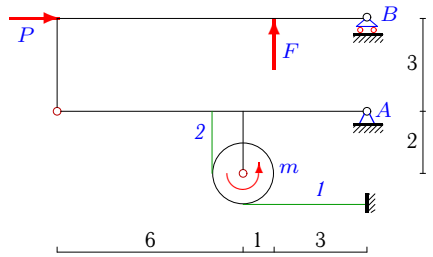
$G = 11$ кН, $F = 8$ кН, $m = 2$ кНм,
$P = 1$ кН, $r = 1$ м.

Задача S30.14.



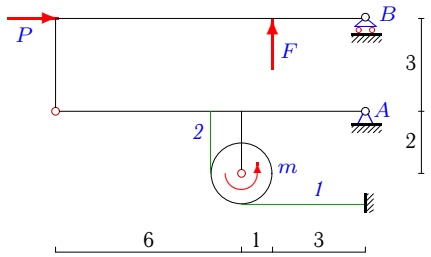
$G = 3$ кН, $F = 15$ кН, $m = 4$ кНм,
$P = 2$ кН, $r = 2$ м.

Задача S30.15.



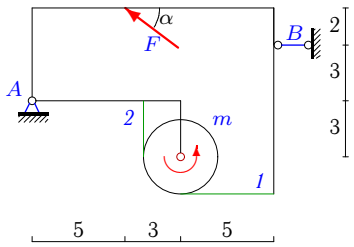
$G = 24$ кН, $F = 10$ кН, $m = 42$ кНм,
$P = 40$ кН, $r = 1$ м.

Задача S30.16.



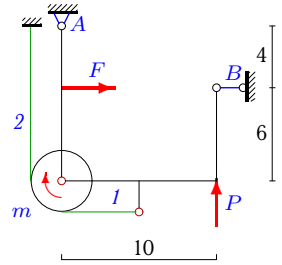
$G = 21$ кН, $F = 10$ кН, $m = 54$ кНм,
$P = 40$ кН, $r = 1$ м.

Задача S30.17.



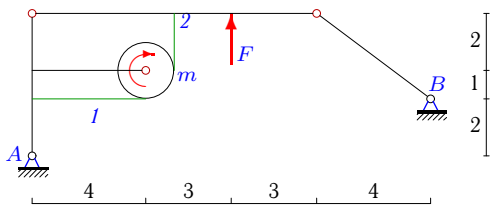
$G = 29$ кН, $F = 15$ кН, $m = 202$ кНм, $r = 2$ м, $\cos\alpha = 0.8$.

Задача S30.18.



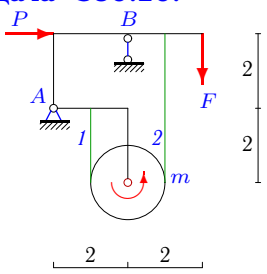
$G = 5$ кН, $F = 5$ кН, $m = 2$ кНм, $P = 2$ кН, $r = 2$ м.

Задача S30.19.



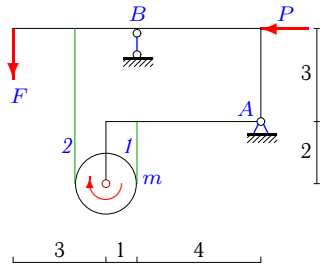
$G = 62$ кН, $F = 40$ кН, $m = 18$ кНм, $r = 1$ м.

Задача S30.20.



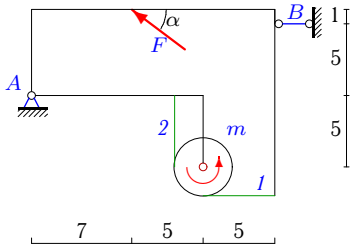
$G = 6$ кН, $F = 4$ кН, $m = 6$ кНм, $P = 4$ кН, $r = 1$ м.

Задача S30.21.



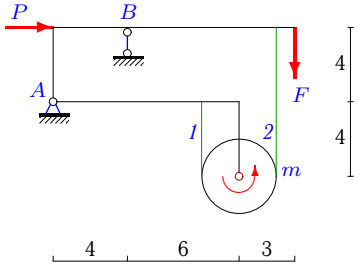
$G = 32$ кН, $F = 12$ кН, $m = 112$ кНм, $P = 12$ кН, $r = 1$ м.

Задача S30.22.



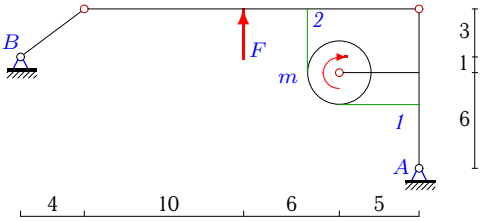
$G = 21$ кН, $F = 25$ кН, $m = 42$ кНм, $r = 2$ м, $\cos\alpha = 0.8$.

Задача S30.23.



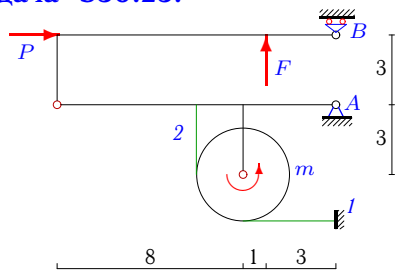
$G = 52$ кН, $F = 12$ кН, $m = 472$ кНм, $P = 20$ кН, $r = 2$ м.

Задача S30.24.



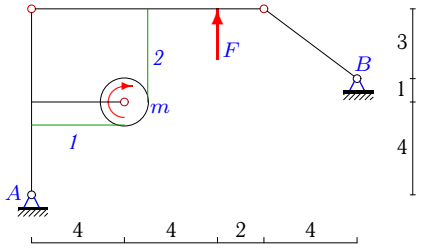
$G = 42$ кН, $F = 21$ кН, $m = 82$ кНм, $r = 2$ м.

Задача S30.25.



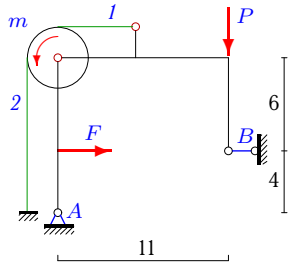
$G = 13$ кН, $F = 24$ кН, $m = 226$ кНм,
$P = 72$ кН, $r = 2$ м.

Задача S30.26.



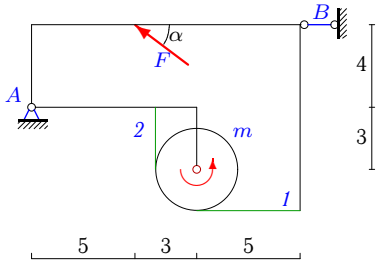
$G = 30$ кН, $F = 15$ кН, $m = 62$ кНм,
$r = 1$ м.

Задача S30.27.



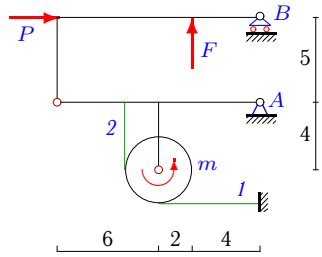
$G = 4$ кН, $F = 20$ кН, $m = 6$ кНм,
$P = 4$ кН, $r = 2$ м.

Задача S30.28.



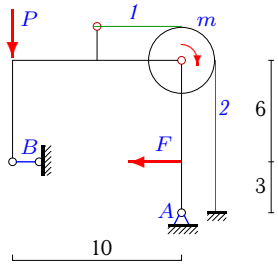
$G = 27$ кН, $F = 20$ кН, $m = 176$ кНм,
$r = 2$ м, $\cos\alpha = 0.8$.

Задача S30.29.



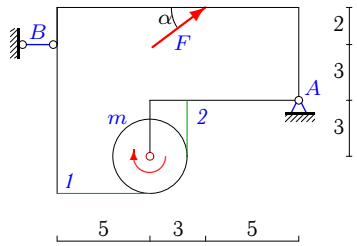
$G = 23$ кН, $F = 24$ кН, $m = 162$ кНм,
$P = 48$ кН, $r = 2$ м.

Задача S30.30.



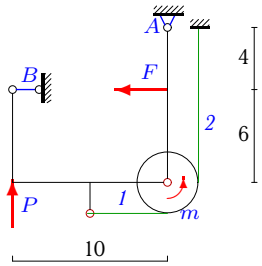
$G = 7$ кН, $F = 18$ кН, $m = 4$ кНм,
$P = 2$ кН, $r = 2$ м.

Задача S30.31.



$G = 24$ кН, $F = 15$ кН, $m = 162$ кНм,
$r = 2$ м, $\cos\alpha = 0.8$.

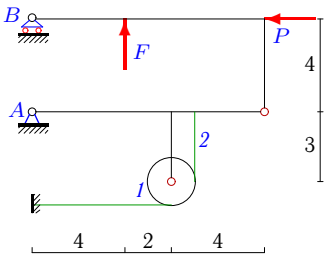
Задача S30.32.



$G = 13$ кН, $F = 10$ кН, $m = 4$ кНм,
$P = 4$ кН, $r = 2$ м.

Задача S30.33.

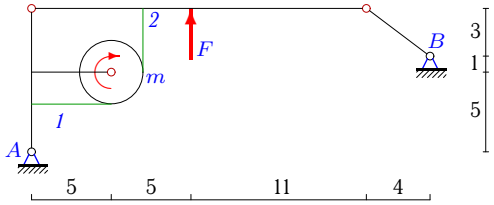
3



$G = 8$ кН, $F = 5$ кН,
$P = 10$ кН, $r = 1$ м.

Задача S30.34.

3



$G = 68$ кН, $F = 35$ кН, $m = 188$ кНм,
$r = 2$ м.

S30 серия 3

Составная конструкция из трех тел с нитью **06.03.2011**

	X_A	Y_A	R_B	S_1	S_2	
1	-12	64	-15	195	50	
2	16	-7	55	80	12	
3	17	17	-1	24	114	
4	-4	-3	13	21	1	
5	-9	23	6	30	28	
6	-22	-2	0	6	27	
7	-9	15	25	8	96	
8	-44	-1	4	2	88	
9	-74	-6	0	2	105	
10	-12	60	-15	228	70	
11	-4	30	-5	68	50	
12	-6	25	9	40	36	
13	-4	5	-4	17	15	
14	-9	33	6	30	28	
15	-44	9	5	4	46	
16	-44	6	5	4	58	
17	-13	20	25	6	107	
18	-3	12	-2	16	15	
19	-4	25	-5	68	50	
20	-4	-5	15	8	2	
21	12	-1	45	120	8	
22	17	6	3	30	51	
23	-20	-7	71	240	4	
24	4	24	-5	65	24	
25	-74	-11	0	2	115	
26	-4	18	-5	80	18	
27	-12	51	-8	46	43	
28	-5	15	21	8	96	
29	-54	-5	4	6	87	
30	-12	35	6	28	26	
31	-37	15	-25	6	87	
32	-6	21	4	32	30	
33	13	2	1	3	3	
34	-8	39	-10	126	32	