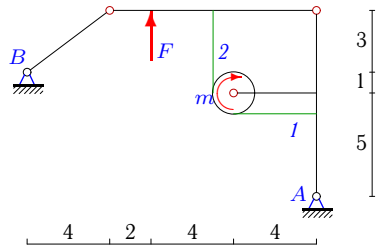
Составная конструкция из трех тел с нитью

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.

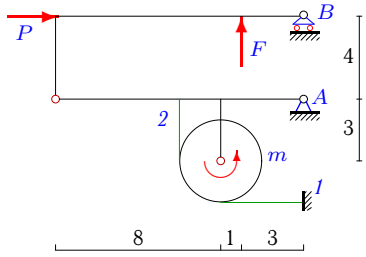
Кирсанов М.Н. Задачи по теоретической механике с решениями в **Maple** 11. – М.: ФИЗМАТЛИТ, 2010. — 264 с. (с.15)

Задача S30.1.



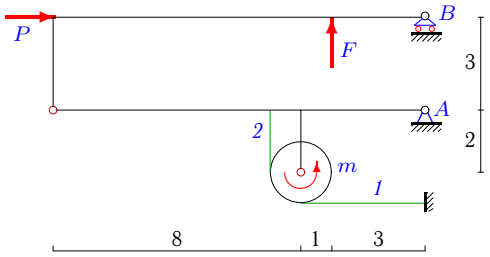
$G = 106$ кН, $F = 55$ кН, $m = 182$ кНм, $r = 1$ м.

Задача S30.2.



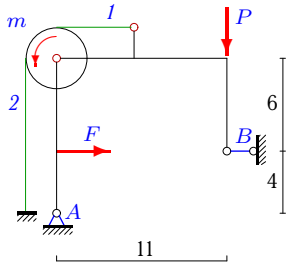
$G = 13$ кН, $F = 24$ кН, $m = 288$ кНм, $P = 72$ кН, $r = 2$ м.

Задача S30.3.



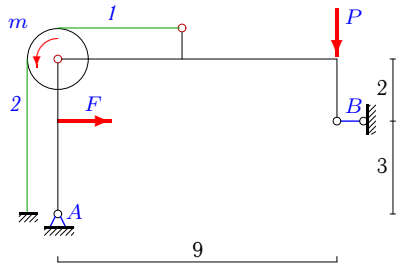
$G = 23$ кН, $F = 12$ кН, $m = 148$ кНм, $P = 72$ кН, $r = 1$ м.

Задача S30.4.



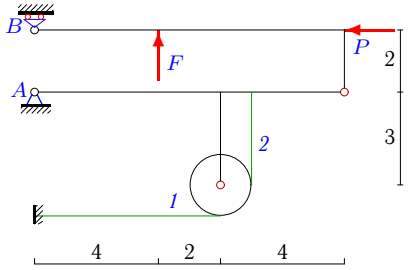
$G = 6$ кН, $F = 20$ кН, $m = 6$ кНм, $P = 4$ кН, $r = 2$ м.

Задача S30.5.



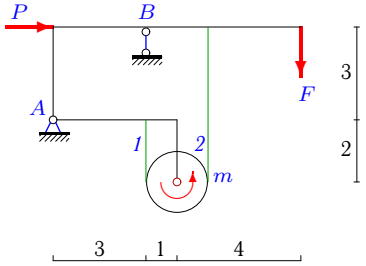
$G = 4$ кН, $F = 5$ кН, $m = 2$ кНм, $P = 2$ кН, $r = 1$ м.

Задача S30.6.



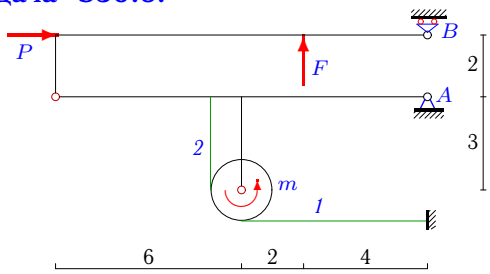
$G = 6$ кН, $F = 5$ кН, $P = 10$ кН, $r = 1$ м.

Задача S30.7.



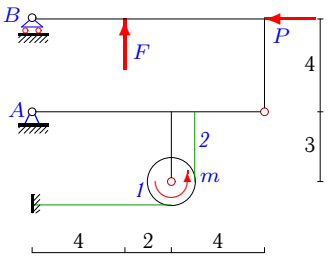
$G = 15$ кН, $F = 12$ кН, $m = 15$ кНм, $P = 9$ кН, $r = 1$ м.

Задача S30.8.



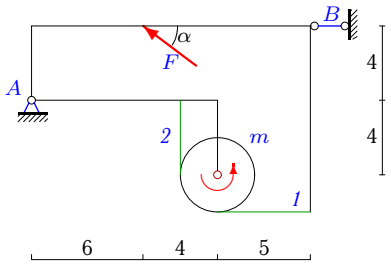
$G = 19$ кН, $F = 12$ кН, $m = 22$ кНм, $P = 48$ кН, $r = 1$ м.

Задача S30.9.



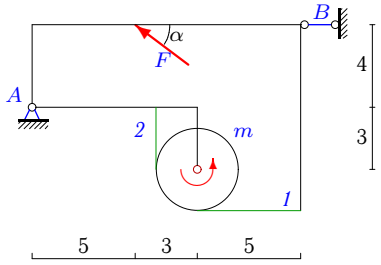
$G = 17$ кН, $F = 10$ кН, $m = 6$ кНм,
$P = 20$ кН, $r = 1$ м.

Задача S30.10.



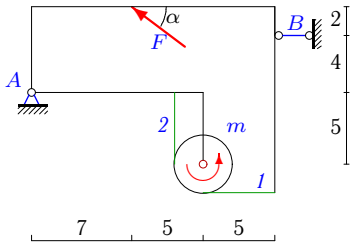
$G = 16$ кН, $F = 10$ кН, $m = 112$ кНм,
$r = 2$ м, $\cos\alpha = 0.8$.

Задача S30.11.



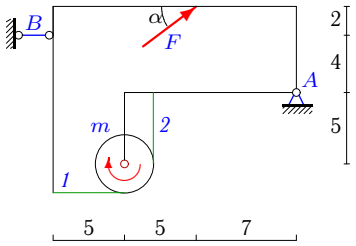
$G = 31$ кН, $F = 20$ кН, $m = 208$ кНм,
$r = 2$ м, $\cos\alpha = 0.8$.

Задача S30.12.



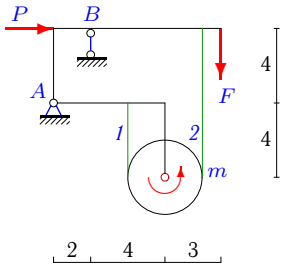
$G = 32$ кН, $F = 20$ кН, $m = 216$ кНм,
$r = 2$ м, $\cos\alpha = 0.8$.

Задача S30.13.



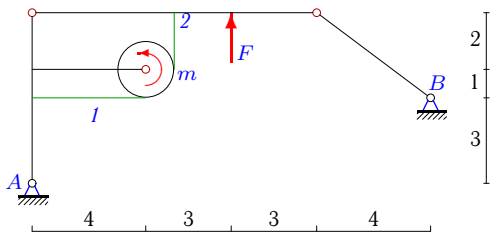
$G = 24$ кН, $F = 20$ кН, $m = 120$ кНм,
$r = 2$ м, $\cos\alpha = 0.8$.

Задача S30.14.



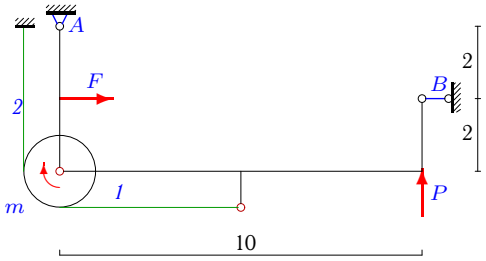
$G = 20$ кН, $F = 6$ кН, $m = 104$ кНм,
$P = 6$ кН, $r = 2$ м.

Задача S30.15.



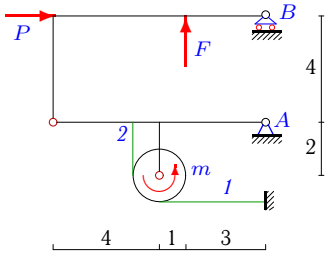
$G = 48$ кН, $F = 30$ кН, $m = 36$ кНм,
$r = 1$ м.

Задача S30.16.



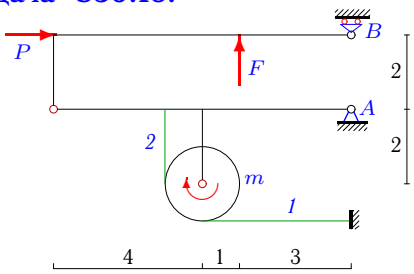
$G = 11$ кН, $F = 12$ кН, $m = 3$ кНм,
$P = 1$ кН, $r = 1$ м.

Задача S30.17.



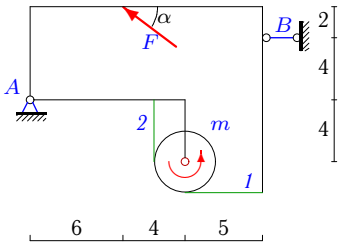
$G = 15$ кН, $F = 8$ кН, $m = 10$ кНм,
$P = 16$ кН, $r = 1$ м.

Задача S30.18.



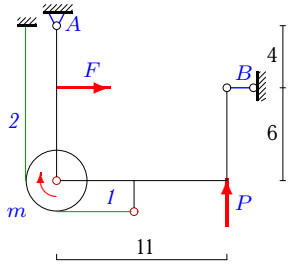
$G = 13$ кН, $F = 8$ кН, $m = 2$ кНм,
$P = 16$ кН, $r = 1$ м.

Задача S30.19.



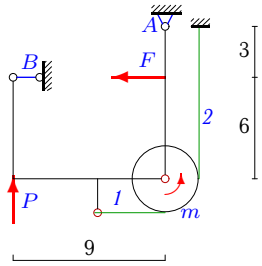
$G = 11$ кН, $F = 10$ кН, $m = 62$ кНм,
$r = 2$ м, $\cos\alpha = 0.8$.

Задача S30.20.



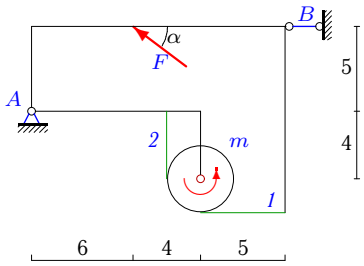
$G = 12$ кН, $F = 20$ кН, $m = 6$ кНм,
$P = 4$ кН, $r = 2$ м.

Задача S30.21.



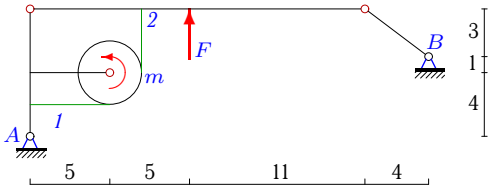
$G = 14$ кН, $F = 9$ кН, $m = 2$ кНм,
$P = 2$ кН, $r = 2$ м.

Задача S30.22.



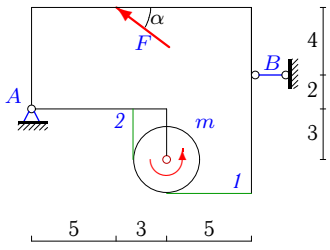
$G = 28$ кН, $F = 25$ кН, $m = 160$ кНм,
$r = 2$ м, $\cos\alpha = 0.8$.

Задача S30.23.



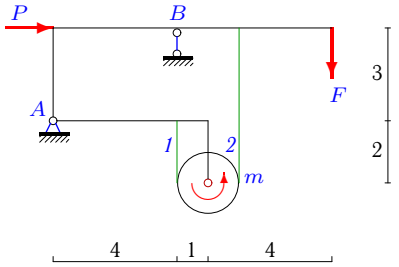
$G = 68$ кН, $F = 35$ кН, $m = 180$ кНм,
$r = 2$ м.

Задача S30.24.



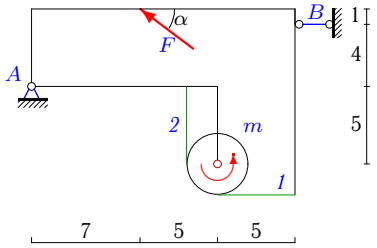
$G = 23$ кН, $F = 10$ кН, $m = 164$ кНм,
$r = 2$ м, $\cos\alpha = 0.8$.

Задача S30.25.



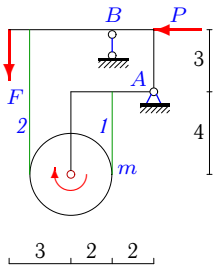
$G = 12$ кН, $F = 8$ кН, $m = 24$ кНм,
$P = 8$ кН, $r = 1$ м.

Задача S30.26.



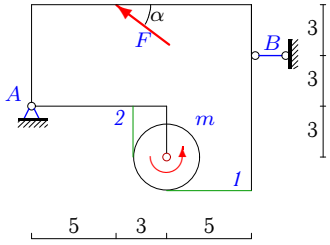
$G = 21$ кН, $F = 20$ кН, $m = 84$ кНм,
$r = 2$ м, $\cos\alpha = 0.8$.

Задача S30.27.



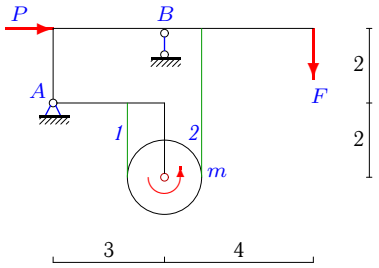
$G = 14$ кН, $F = 6$ кН, $m = 44$ кНм,
$P = 8$ кН, $r = 2$ м.

Задача S30.28.



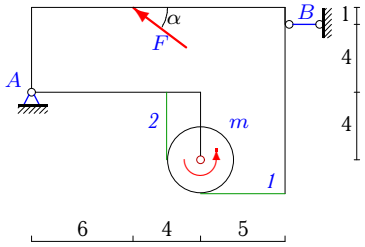
$G = 28$ кН, $F = 15$ кН, $m = 194$ кНм,
$r = 2$ м, $\cos\alpha = 0.8$.

Задача S30.29.



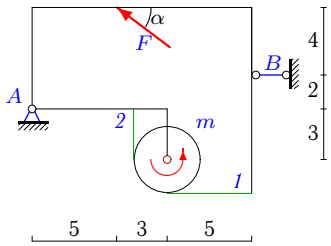
$G = 39$ кН, $F = 12$ кН, $m = 81$ кНм,
$P = 6$ кН, $r = 1$ м.

Задача S30.30.



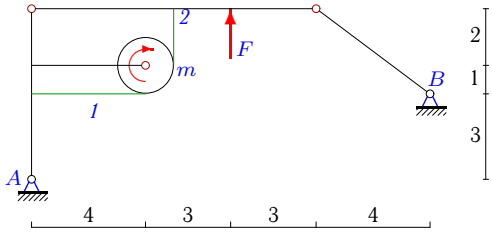
$G = 27$ кН, $F = 20$ кН, $m = 174$ кНм,
$r = 2$ м, $\cos\alpha = 0.8$.

Задача S30.31.



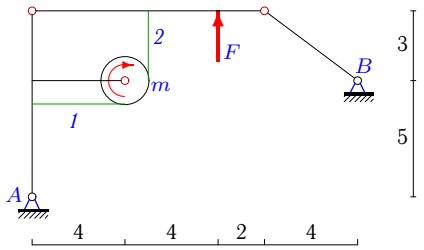
$G = 31$ кН, $F = 10$ кН, $m = 228$ кНм,
$r = 2$ м, $\cos\alpha = 0.8$.

Задача S30.32.



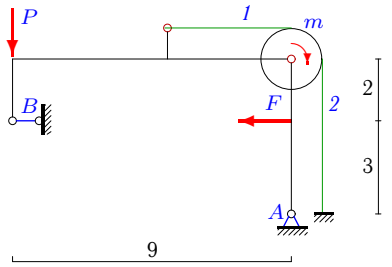
$G = 34$ кН, $F = 20$ кН, $m = 50$ кНм,
$r = 1$ м.

Задача S30.33. 2



$G = 38$ кН, $F = 20$ кН, $m = 54$ кНм, $r = 1$ м.

Задача S30.34. 2



$G = 8$ кН, $F = 5$ кН, $m = 2$ кНм, $P = 2$ кН, $r = 1$ м.

S30 серия 2

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

	X_A	Y_A	R_B	S_1	S_2	
1	12	60	-15	252	70	
2	-76	-17	6	4	148	
3	-76	2	9	4	152	
4	-12	53	-8	46	43	
5	-2	28	-3	24	22	
6	11	2	-1	1	1	
7	-9	-29	56	24	9	
8	-50	7	0	2	24	
9	26	5	2	6	0	
10	3	10	5	8	64	
11	-5	19	21	8	112	
12	13	20	3	24	132	
13	-19	12	-3	24	84	
14	-6	-21	47	54	2	
15	-4	21	-5	72	36	
16	-6	9	-6	22	19	
17	-22	4	3	6	16	
18	-18	6	-1	2	0	
19	-1	5	9	8	39	
20	-12	35	-8	46	43	
21	-6	5	3	18	17	
22	6	13	14	20	100	
23	-8	39	-10	122	32	
24	-21	17	29	4	86	
25	-8	-13	33	30	6	
26	17	9	-1	24	66	
27	8	-19	39	24	2	
28	-17	19	29	6	103	
29	-6	7	44	90	9	
30	2	15	14	16	103	
31	-21	25	29	4	118	
32	-4	17	-5	72	22	
33	-4	21	-5	80	26	
34	-2	32	3	24	22	