

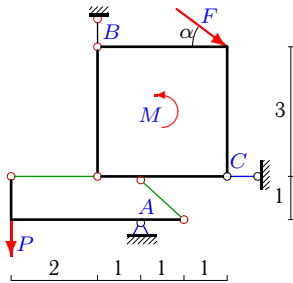
## Конструкция из пластины и уголка

Конструкция состоит из прямоугольной пластины и жесткого уголка, изогнутого под прямым углом. Тела соединены двумя невесомыми стержнями. Определить реакции опор конструкции (в кН). Размеры даны в метрах.

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

**Задача S31.1.**

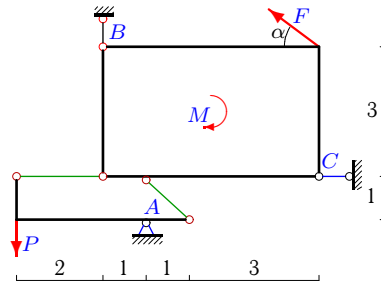
10



$$F = 15 \text{ кН}, P = 1 \text{ кН}, M = 18 \text{ кНм}, \cos \alpha = 0.8.$$

**Задача S31.2.**

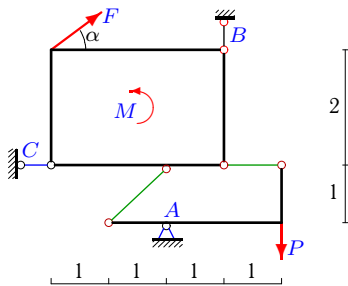
10



$$F = 10 \text{ кН}, P = 11 \text{ кН}, M = 24 \text{ кНм}, \cos \alpha = 0.8.$$

**Задача S31.3.**

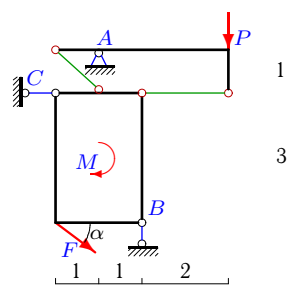
10



$$F = 5 \text{ кН}, P = 1 \text{ кН}, M = 6 \text{ кНм}, \cos \alpha = 0.8.$$

**Задача S31.4.**

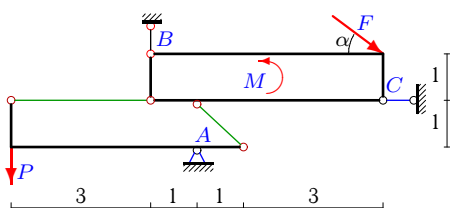
10



$$F = 35 \text{ кН}, P = 2 \text{ кН}, M = 21 \text{ кНм}, \cos \alpha = 0.8.$$

**Задача S31.5.**

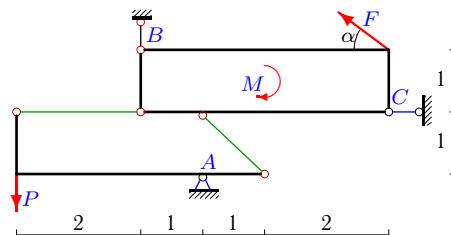
10



$$F = 5 \text{ кН}, P = 6 \text{ кН}, M = 12 \text{ кНм}, \cos \alpha = 0.8.$$

**Задача S31.6.**

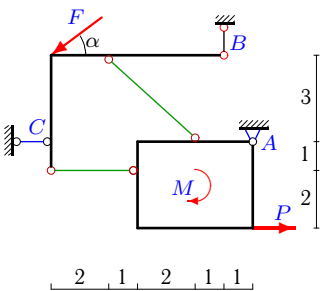
10



$$F = 5 \text{ кН}, P = 1 \text{ кН}, M = 9 \text{ кНм}, \cos \alpha = 0.8.$$

**Задача S31.7.**

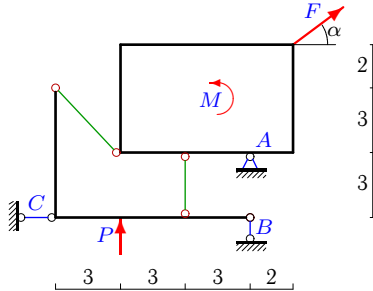
10



$$F = 25 \text{ кН}, P = 3 \text{ кН}, M = 9 \text{ кНм}, \cos \alpha = 0.8.$$

**Задача S31.8.**

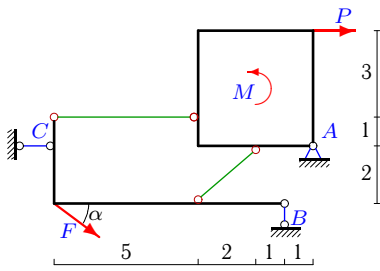
10



$$F = 5 \text{ кН}, P = 3 \text{ кН}, M = 14 \text{ кНм}, \cos \alpha = 0.8.$$

**Задача S31.9.**

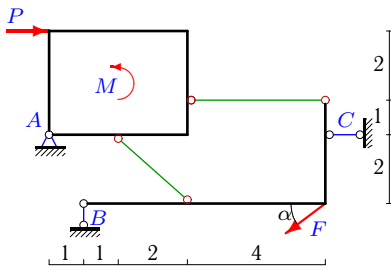
10



$F = 5 \text{ кН}, P = 3 \text{ кН}, M = 12 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.11.**

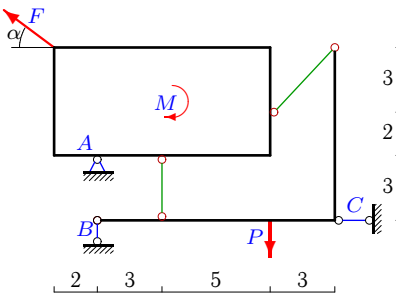
10



$F = 10 \text{ кН}, P = 5 \text{ кН}, M = 15 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.13.**

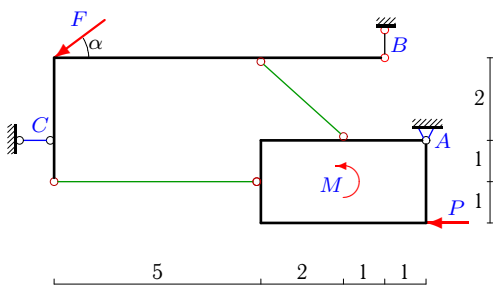
10



$F = 25 \text{ кН}, P = 3 \text{ кН}, M = 70 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.15.**

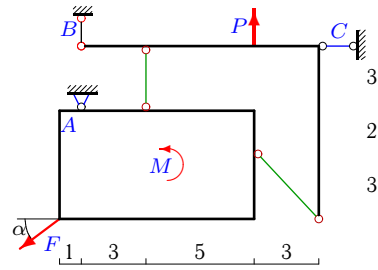
10



$F = 25 \text{ кН}, P = 3 \text{ кН}, M = 6 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.10.**

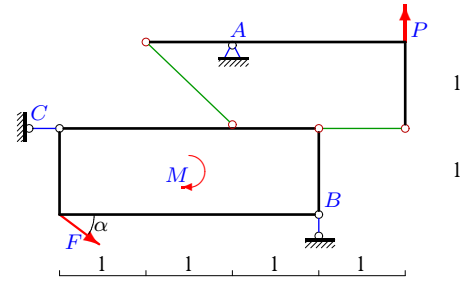
10



$F = 25 \text{ кН}, P = 6 \text{ кН}, M = 85 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.12.**

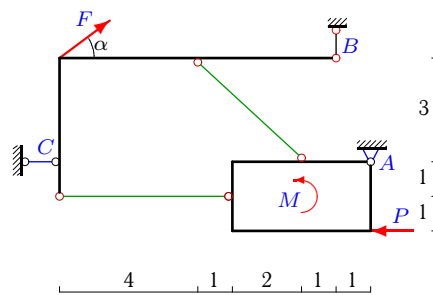
10



$F = 30 \text{ кН}, P = 11 \text{ кН}, M = 36 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.14.**

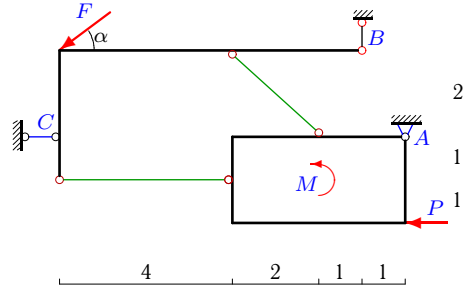
10



$F = 20 \text{ кН}, P = 1 \text{ кН}, M = 2 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.16.**

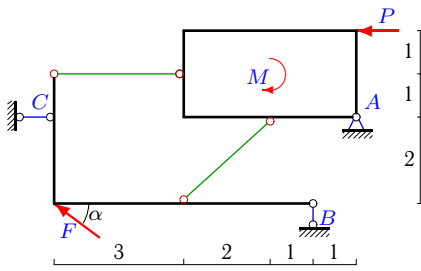
10



$F = 25 \text{ кН}, P = 2 \text{ кН}, M = 4 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.17.**

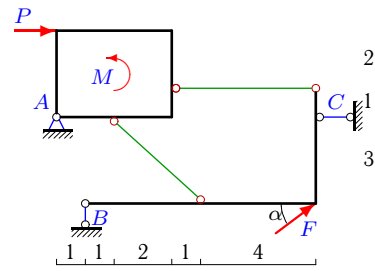
10



$F = 25 \text{ кН}, P = 6 \text{ кН}, M = 12 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.18.**

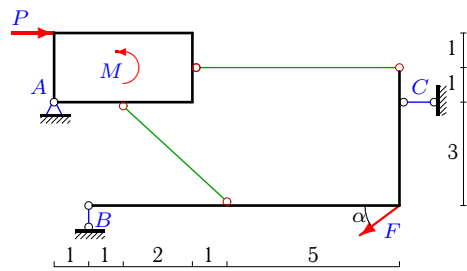
10



$F = 5 \text{ кН}, P = 1 \text{ кН}, M = 3 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.19.**

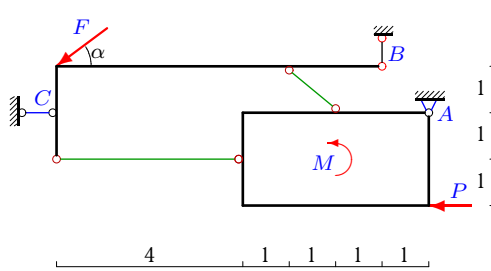
10



$F = 5 \text{ кН}, P = 3 \text{ кН}, M = 6 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.20.**

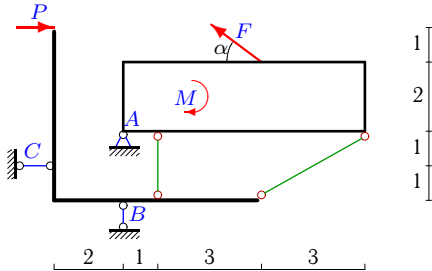
10



$F = 5 \text{ кН}, P = 1 \text{ кН}, M = 2 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.21.**

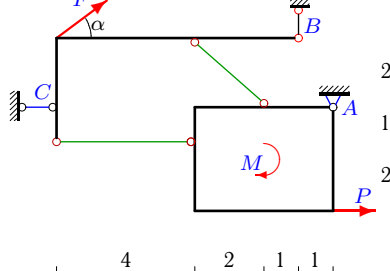
10



$F = 25 \text{ кН}, P = 1 \text{ кН}, M = 99 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.22.**

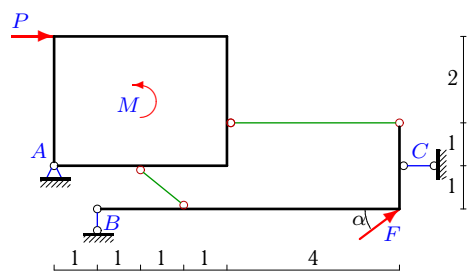
10



$F = 15 \text{ кН}, P = 1 \text{ кН}, M = 3 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.23.**

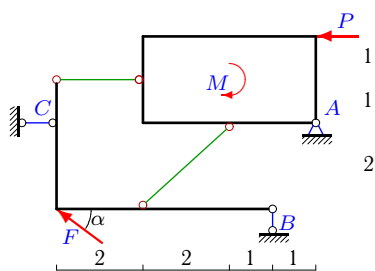
10



$F = 15 \text{ кН}, P = 1 \text{ кН}, M = 3 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.24.**

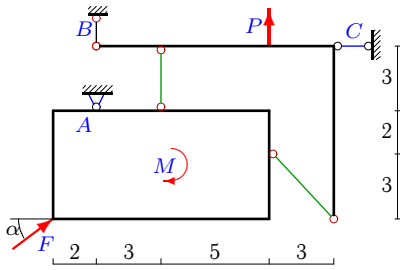
10



$F = 15 \text{ кН}, P = 2 \text{ кН}, M = 4 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.25.**

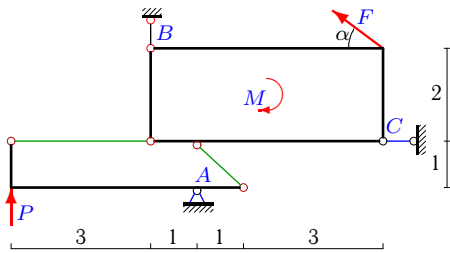
10



$F = 20 \text{ кН}, P = 3 \text{ кН}, M = 56 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.27.**

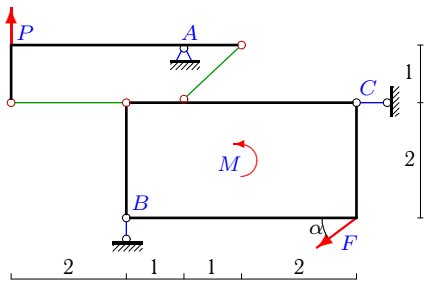
10



$F = 5 \text{ кН}, P = 1 \text{ кН}, M = 12 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.29.**

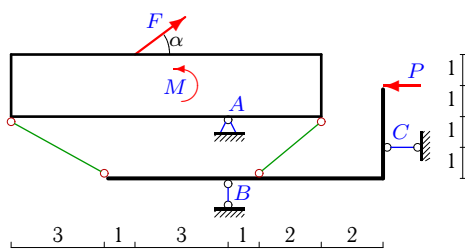
10



$F = 20 \text{ кН}, P = 5 \text{ кН}, M = 36 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.31.**

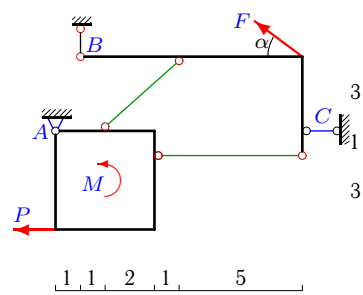
10



$F = 25 \text{ кН}, P = 1 \text{ кН}, M = 84 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.26.**

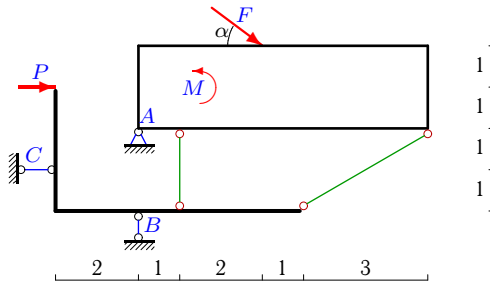
10



$F = 5 \text{ кН}, P = 1 \text{ кН}, M = 4 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.28.**

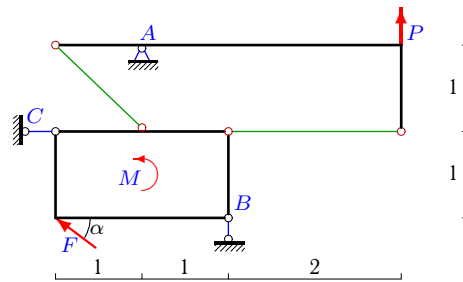
10



$F = 5 \text{ кН}, P = 4 \text{ кН}, M = 18 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.30.**

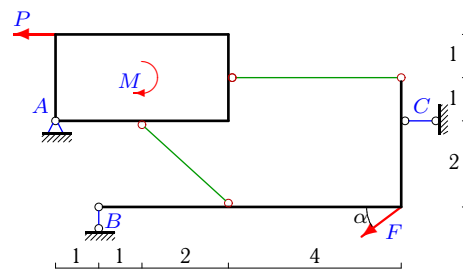
10



$F = 5 \text{ кН}, P = 4 \text{ кН}, M = 3 \text{ кНм}, \cos \alpha = 0.8.$

**Задача S31.32.**

10



$F = 5 \text{ кН}, P = 3 \text{ кН}, M = 6 \text{ кНм}, \cos \alpha = 0.8.$

**S31 Ответы.**  
**Конструкция из пластины и уголка**

03.12.2011

№	$X_A$	$Y_A$	$R_B$	$R_C$
1	-3	46	-36	-9
2	-33	-19	24	41
3	2	-10	8	6
4	-6	107	84	22
5	-24	13	-4	20
6	-3	-6	4	7
7	-153	-150	165	-170
8	-10	-9	-3	-6
9	29	-32	-35	36
10	4	-1	10	16
11	-63	-58	-64	66
12	22	31	24	46
13	12	-7	5	8
14	145	144	-156	160
15	-157	-160	175	-180
16	-143	-145	160	-165
17	-124	130	145	-150
18	35	36	39	-40
19	-42	-39	-42	43
20	-24	-25	28	-29
21	17	-2	13	-2
22	86	87	-96	99
23	74	75	84	-87
24	-67	69	78	-81
25	-24	-20	5	8
26	-38	39	-42	43
27	4	-12	8	0
28	-11	32	29	-3
29	-15	39	32	31
30	12	-11	-4	8
31	-19	-10	5	0
32	-26	-29	-32	33

S31 файл o31s10A