

## Система с односторонней связью

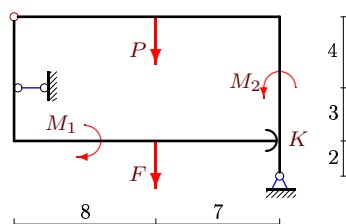
Рама, состоящая из двух частей, содержит одностороннюю связь (гладкая опора в точке  $K$ ). Размеры на рисунке даны в метрах. Для каких значений силы  $F$  система находится в положении равновесия?

Кирсанов М.Н. Теоретическая механика. Сборник задач – М.: Инфра-М, 2014. — 430 с. ISBN 978-5-16-010026-5 (с.82)

Кирсанов М.Н. Решения задач по теоретической механике. – М.: Инфра-М, 2015. — 216 с. ISBN 978-5-16-010558-1 (с.44)

**Задача S-37.1.**

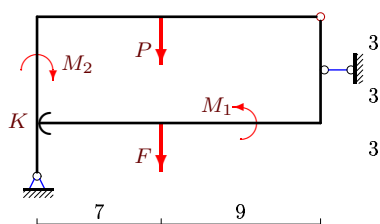
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$$P = 12 \text{ кН}, M_1 = 20 \text{ кНм}, M_2 = 45 \text{ кНм}.$$

**Задача S-37.2.**

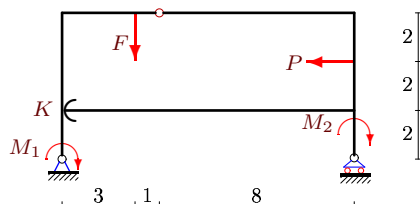
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$$P = 11 \text{ кН}, M_1 = 4 \text{ кНм}, M_2 = 12 \text{ кНм}.$$

**Задача S-37.3.**

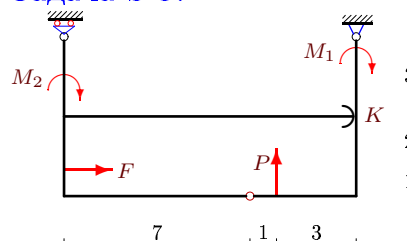
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$$P = 3 \text{ кН}, M_1 = 3 \text{ кНм}, M_2 = 6 \text{ кНм}.$$

**Задача S-37.4.**

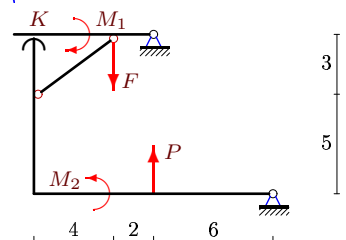
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$$P = 46 \text{ кН}, M_1 = 16 \text{ кНм}, M_2 = 28 \text{ кНм}.$$

**Задача S-37.5.**

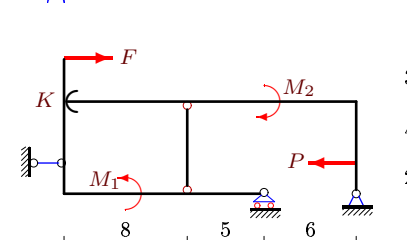
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$$P = 28 \text{ кН}, M_1 = 3 \text{ кНм}, M_2 = 28 \text{ кНм}.$$

**Задача S-37.6.**

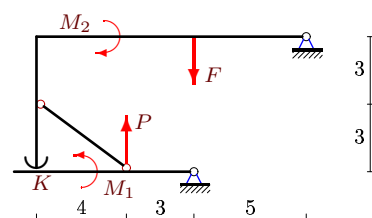
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$$P = 77 \text{ кН}, M_1 = 25 \text{ кНм}, M_2 = 55 \text{ кНм}.$$

**Задача S-37.7.**

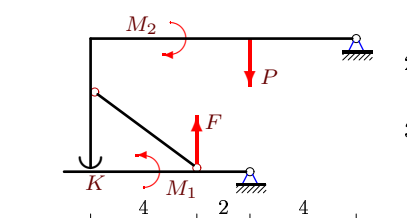
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$$P = 10 \text{ кН}, M_1 = 3 \text{ кНм}, M_2 = 16 \text{ кНм}.$$

**Задача S-37.8.**

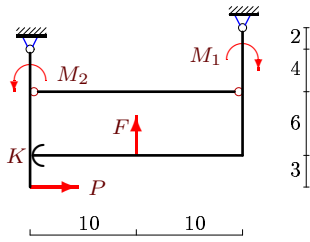
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$$P = 38 \text{ кН}, M_1 = 3 \text{ кНм}, M_2 = 19 \text{ кНм}.$$

**Задача S-37.9.**

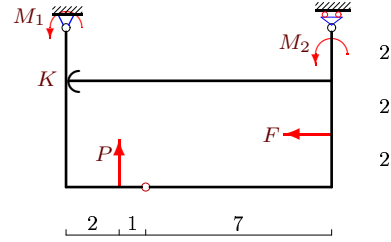
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$P = 20 \text{ кН}, M_1 = 12 \text{ кНм}, M_2 = 8 \text{ кНм}.$

**Задача S-37.10.**

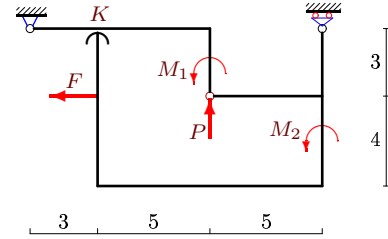
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$P = 24 \text{ кН}, M_1 = 6 \text{ кНм}, M_2 = 14 \text{ кНм}.$

**Задача S-37.11.**

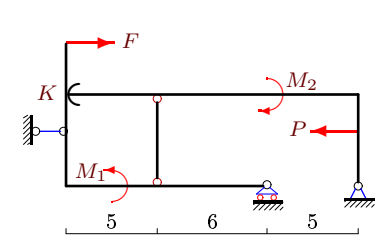
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$P = 8 \text{ кН}, M_1 = 40 \text{ кНм}, M_2 = 25 \text{ кНм}.$

**Задача S-37.12.**

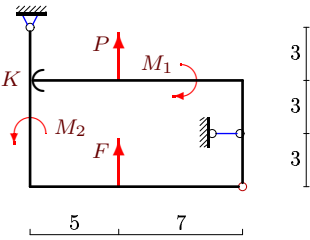
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$P = 55 \text{ кН}, M_1 = 30 \text{ кНм}, M_2 = 55 \text{ кНм}.$

**Задача S-37.13.**

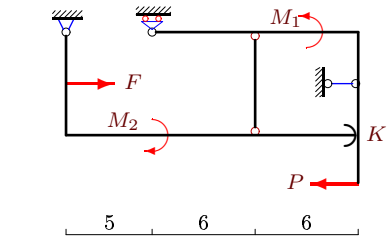
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$P = 5 \text{ кН}, M_1 = 6 \text{ кНм}, M_2 = 18 \text{ кНм}.$

**Задача S-37.14.**

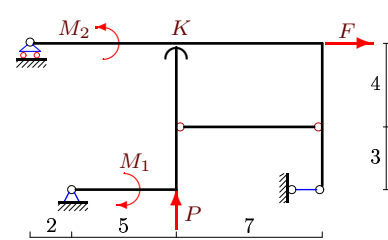
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$P = 9 \text{ кН}, M_1 = 12 \text{ кНм}, M_2 = 22 \text{ кНм}.$

**Задача S-37.15.**

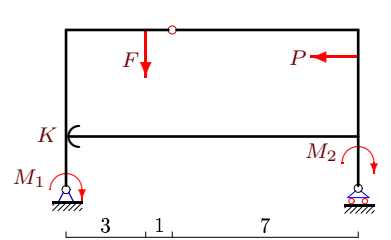
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$P = 7 \text{ кН}, M_1 = M_2 = 31 \text{ кНм}.$

**Задача S-37.16.**

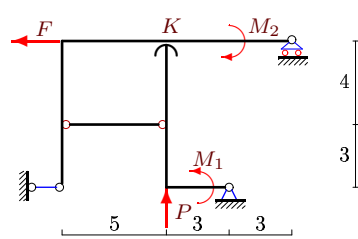
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$P = 21 \text{ кН}, M_1 = 16 \text{ кНм}, M_2 = 28 \text{ кНм}.$

**Задача S-37.17.**

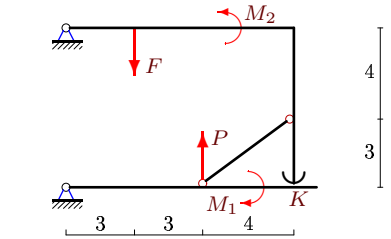
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$P = 7 \text{ кН}, M_1 = M_2 = 24 \text{ кНм}.$

**Задача S-37.18.**

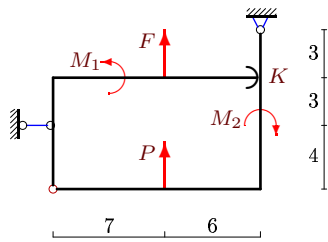
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$P = 9 \text{ кН}, M_1 = 18 \text{ кНм}, M_2 = 46 \text{ кНм}.$

Задача S-37.19.

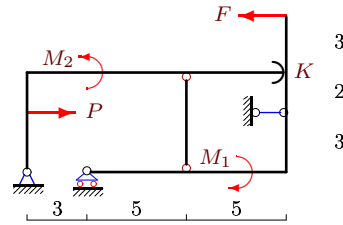
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$P = 9 \text{ кН}$ ,  $M_1 = 10 \text{ кНм}$ ,  $M_2 = 25 \text{ кНм}$ .

Задача S-37.20.

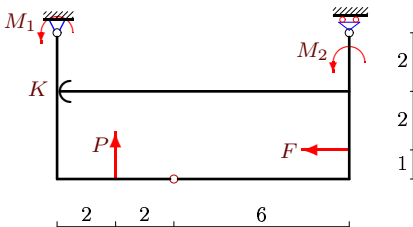
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$P = 40 \text{ кН}$ ,  $M_1 = 30 \text{ кНм}$ ,  $M_2 = 48 \text{ кНм}$ .

Задача S-37.21.

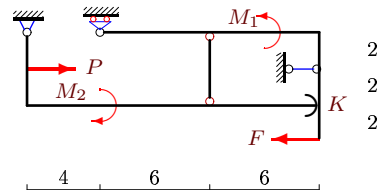
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$P = 17 \text{ кН}$ ,  $M_1 = 6 \text{ кНм}$ ,  $M_2 = 9 \text{ кНм}$ .

Задача S-37.22.

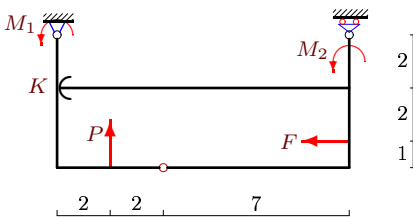
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$P = 10 \text{ кН}$ ,  $M_1 = 6 \text{ кНм}$ ,  $M_2 = 10 \text{ кНм}$ .

Задача S-37.23.

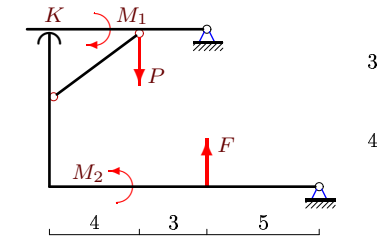
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$P = 39 \text{ кН}$ ,  $M_1 = 8 \text{ кНм}$ ,  $M_2 = 14 \text{ кНм}$ .

Задача S-37.24.

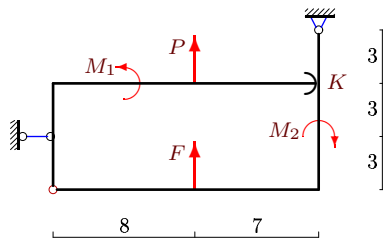
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$P = 30 \text{ кН}$ ,  $M_1 = 9 \text{ кНм}$ ,  $M_2 = 52 \text{ кНм}$ .

Задача S-37.25.

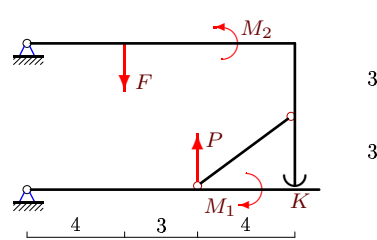
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$P = 7 \text{ кН}$ ,  $M_1 = 4 \text{ кНм}$ ,  $M_2 = 12 \text{ кНм}$ .

Задача S-37.26.

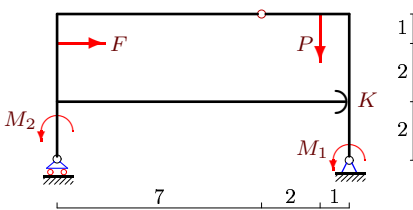
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$P = 4 \text{ кН}$ ,  $M_1 = 7 \text{ кНм}$ ,  $M_2 = 15 \text{ кНм}$ .

Задача S-37.27.

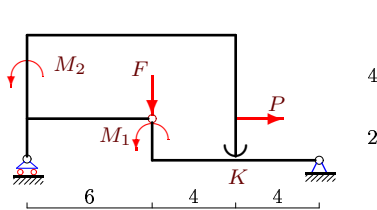
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$P = 38 \text{ кН}$ ,  $M_1 = 12 \text{ кНм}$ ,  $M_2 = 28 \text{ кНм}$ .

Задача S-37.28.

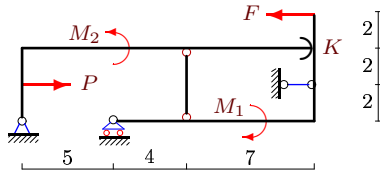
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$P = 4 \text{ кН}$ ,  $M_1 = 4 \text{ кНм}$ ,  $M_2 = 3 \text{ кНм}$ .

Задача S-37.29.

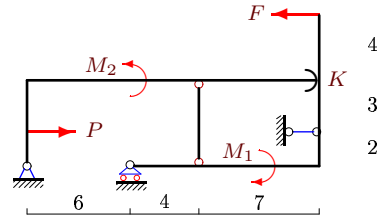
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$P = 36 \text{ кН}, M_1 = 12 \text{ кНм}, M_2 = 27 \text{ кНм}.$

Задача S-37.30.

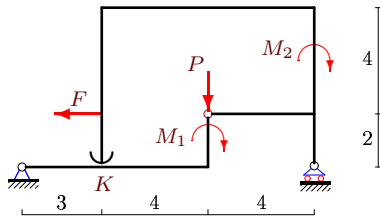
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$P = 35 \text{ кН}, M_1 = 12 \text{ кНм}, M_2 = 30 \text{ кНм}.$

Задача S-37.31.

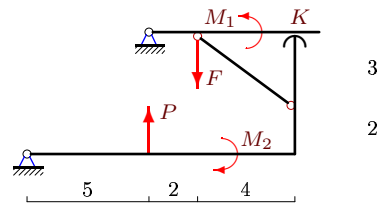
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$P = 28 \text{ кН}, M_1 = 35 \text{ кНм}, M_2 = 20 \text{ кНм}.$

Задача S-37.32.

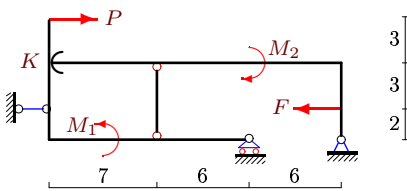
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$P = 41 \text{ кН}, M_1 = 6 \text{ кНм}, M_2 = 41 \text{ кНм}.$

Задача S-37.33.

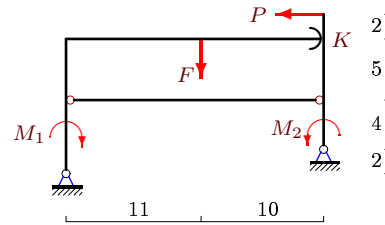
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$P = 2 \text{ кН}, M_1 = 3 \text{ кНм}, M_2 = 6 \text{ кНм}.$

Задача S-37.34.

5



$P = 22 \text{ кН}, M_1 = 15 \text{ кНм}, M_2 = 10 \text{ кНм}.$

**Ответы.****Система с односторонней связью**

16.02.2015

№	$F$
1	$F < 28$ кН
2	$F < 7$ кН
3	$F < 7$ кН
4	$F > 21$ кН
5	$F > 9$ кН
6	$F > 10$ кН
7	$F < 32$ кН
8	$F > 12$ кН
9	$F < 39$ кН
10	$F > 7$ кН
11	$F < 3$ кН
12	$F > 18$ кН
13	$F > 9$ кН
14	$F < 33$ кН
15	$F < 5$ кН
16	$F < 46$ кН
17	$F < 3$ кН
18	$F < 46$ кН
19	$F < 12$ кН
20	$F > 15$ кН
21	$F > 6$ кН
22	$F > 3$ кН
23	$F > 14$ кН
24	$F < 104$ кН
25	$F > 9$ кН
26	$F < 15$ кН
27	$F > 7$ кН
28	$F > 1$ кН
29	$F > 8$ кН
30	$F > 4$ кН
31	$F < 8$ кН
32	$F > 15$ кН
33	$F < 12$ кН
34	$F < 33$ кН