Система с односторонней связью

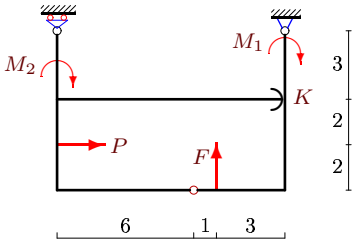
Рама, состоящая из двух частей, содержит одностороннюю связь (гладкая опора в точке K). Размеры на рисунке даны в метрах. Для каких значений силы F система находится в положении равновесия?

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.

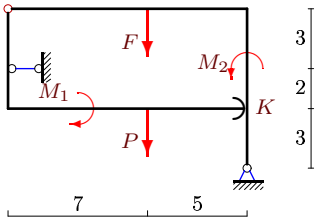
9



$P = 9$ кН, $M_1 = 12$ кНм, $M_2 = 18$ кНм.

Задача S-37.2.

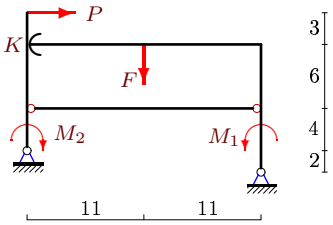
9



$P = 15$ кН, $M_1 = 9$ кНм, $M_2 = 24$ кНм.

Задача S-37.3.

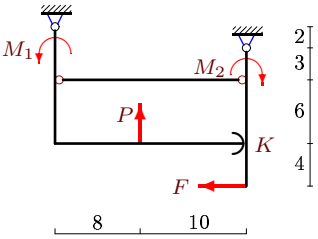
9



$P = 22$ кН, $M_1 = 21$ кНм, $M_2 = 14$ кНм.

Задача S-37.4.

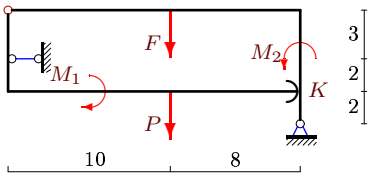
9



$P = 65$ кН, $M_1 = 20$ кНм, $M_2 = 12$ кНм.

Задача S-37.5.

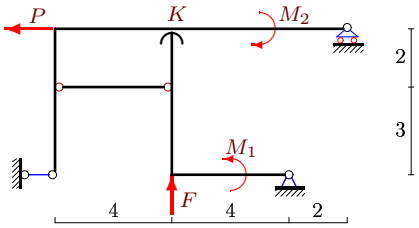
9



$P = 24$ кН, $M_1 = 21$ кНм, $M_2 = 49$ кНм.

Задача S-37.6.

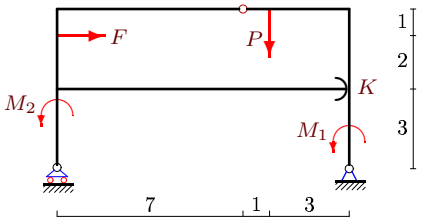
9



$P = 4$ кН, $M_1 = M_2 = 2$ кНм.

Задача S-37.7.

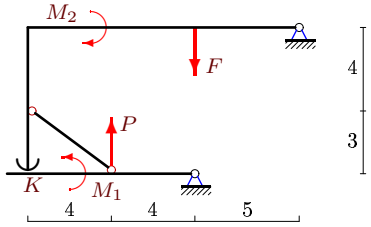
9



$P = 46$ кН, $M_1 = 20$ кНм, $M_2 = 35$ кНм.

Задача S-37.8.

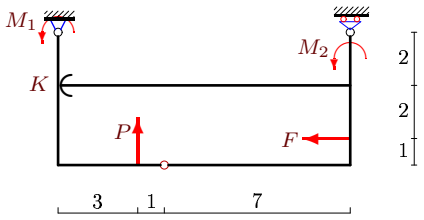
9



$P = 15$ кН, $M_1 = 12$ кНм, $M_2 = 55$ кНм.

Задача S-37.9.

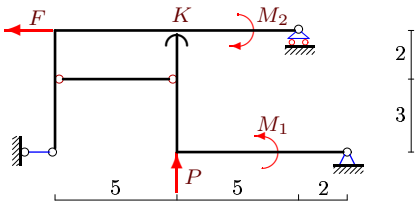
9



$P = 39$ кН, $M_1 = 16$ кНм, $M_2 = 28$ кНм.

Задача S-37.10.

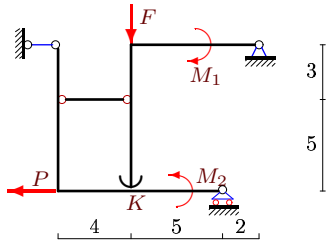
9



$P = 5$ кН, $M_1 = M_2 = 23$ кНм.

Задача S-37.11.

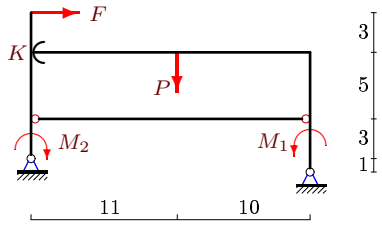
9



$P = 7$ кН, $M_1 = M_2 = 18$ кНм.

Задача S-37.12.

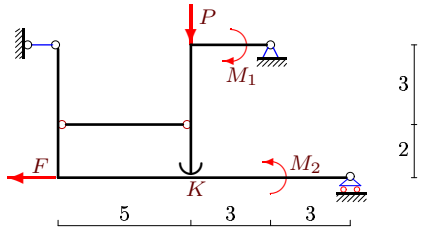
9



$P = 44$ кН, $M_1 = 20$ кНм, $M_2 = 15$ кНм.

Задача S-37.13.

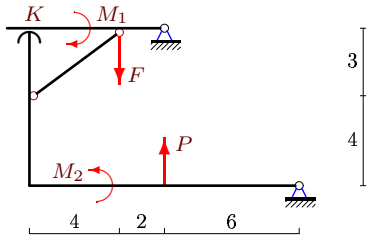
9



$P = 5$ кН, $M_1 = M_2 = 22$ кНм.

Задача S-37.14.

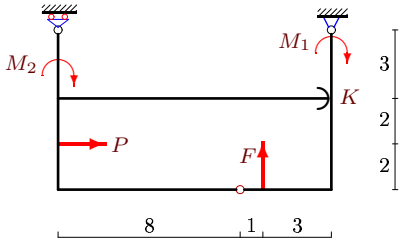
9



$P = 52$ кН, $M_1 = 3$ кНм, $M_2 = 26$ кНм.

Задача S-37.15.

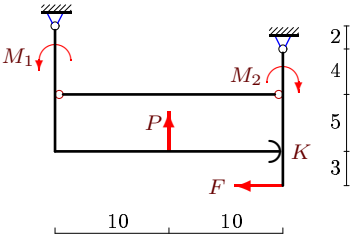
9



$P = 3$ кН, $M_1 = 3$ кНм, $M_2 = 6$ кНм.

Задача S-37.16.

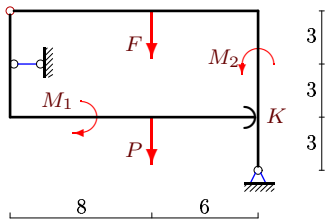
9



$P = 36$ кН, $M_1 = 9$ кНм, $M_2 = 6$ кНм.

Задача S-37.17.

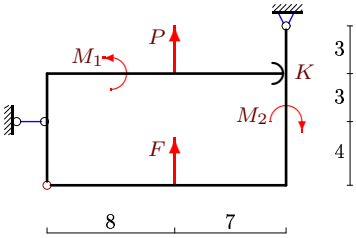
9



$P = 3$ кН, $M_1 = 2$ кНм, $M_2 = 6$ кНм.

Задача S-37.18.

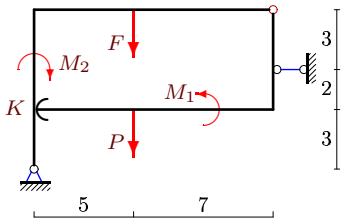
9



$P = 7$ кН, $M_1 = 4$ кНм, $M_2 = 10$ кНм.

Задача S-37.19.

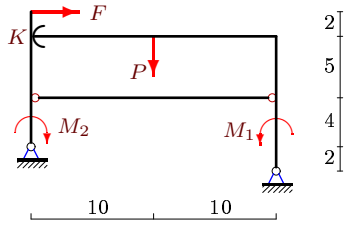
9



$P = 15$ кН, $M_1 = 12$ кНм, $M_2 = 32$ кНм.

Задача S-37.20.

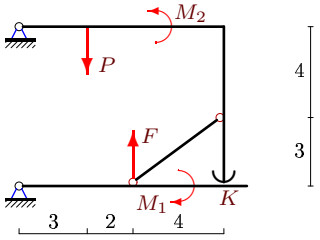
9



$P = 33$ кН, $M_1 = 18$ кНм, $M_2 = 12$ кНм.

Задача S-37.21.

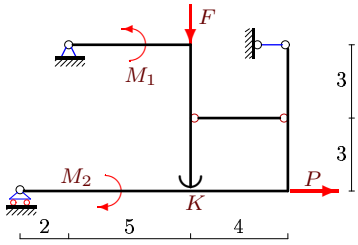
9



$P = 43$ кН, $M_1 = 30$ кНм, $M_2 = 86$ кНм.

Задача S-37.22.

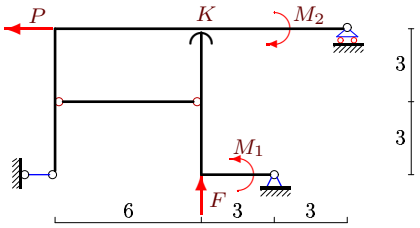
9



$P = 5$ кН, $M_1 = M_2 = 12$ кНм.

Задача S-37.23.

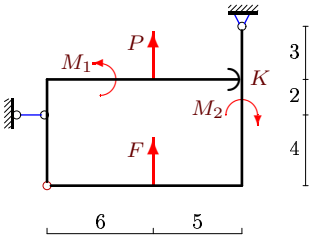
9



$P = 3$ кН, $M_1 = M_2 = 2$ кНм.

Задача S-37.24.

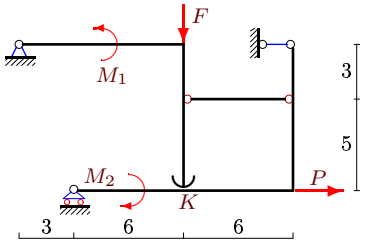
9



$P = 4$ кН, $M_1 = 4$ кНм, $M_2 = 9$ кНм.

Задача S-37.25.

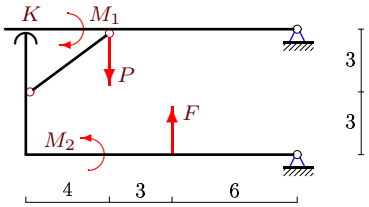
9



$P = 9$ кН, $M_1 = M_2 = 10$ кНм.

Задача S-37.26.

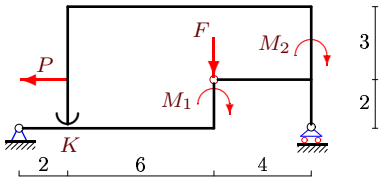
9



$P = 12$ кН, $M_1 = 9$ кНм, $M_2 = 17$ кНм.

Задача S-37.27.

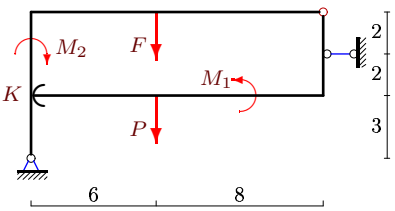
9



$P = 12$ кН, $M_1 = 8$ кНм, $M_2 = 4$ кНм.

Задача S-37.28.

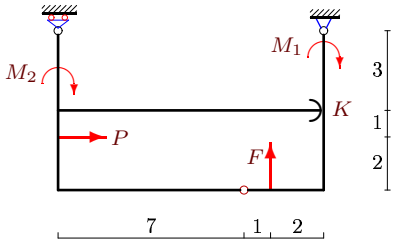
9



$P = 12$ кН, $M_1 = 6$ кНм, $M_2 = 21$ кНм.

Задача S-37.29.

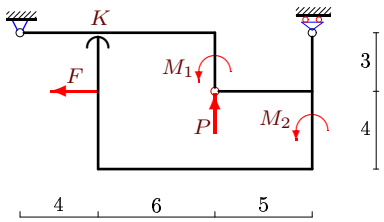
9



$P = 14$ кН, $M_1 = 9$ кНм, $M_2 = 21$ кНм.

Задача S-37.30.

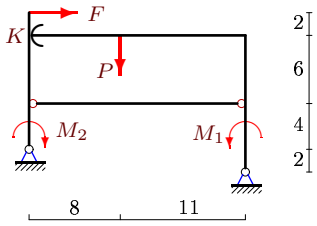
9



$P = 10$ кН, $M_1 = 50$ кНм, $M_2 = 25$ кНм.

Задача S-37.31.

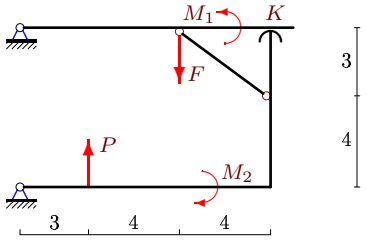
9



$P = 36$ кН, $M_1 = 27$ кНм, $M_2 = 18$ кНм.

Задача S-37.32.

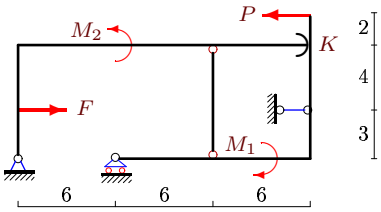
9



$P = 49$ кН, $M_1 = 21$ кНм, $M_2 = 49$ кНм.

Задача S-37.33.

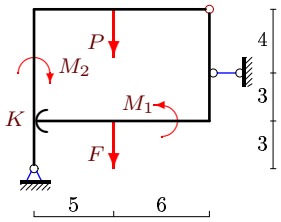
9



$P = 1$ кН, $M_1 = 1$ кНм, $M_2 = 2$ кНм.

Задача S-37.34.

9



$P = 8$ кН, $M_1 = 10$ кНм, $M_2 = 25$ кНм.

Ответы.

Система с односторонней связью 16.02.2015

№	F
1	$F < 25$ кН
2	$F > 20$ кН
3	$F < 39$ кН
4	$F > 24$ кН
5	$F > 16$ кН
6	$F > 5$ кН
7	$F > 21$ кН
8	$F < 55$ кН
9	$F > 21$ кН
10	$F < 7$ кН
11	$F > 8$ кН
12	$F > 30$ кН
13	$F < 3$ кН
14	$F > 18$ кН
15	$F < 8$ кН
16	$F > 20$ кН
17	$F > 5$ кН
18	$F > 5$ кН
19	$F > 20$ кН
20	$F > 20$ кН
21	$F > 9$ кН
22	$F > 6$ кН
23	$F > 6$ кН
24	$F > 2$ кН
25	$F > 8$ кН
26	$F < 34$ кН
27	$F > 3$ кН
28	$F > 28$ кН
29	$F < 48$ кН
30	$F < 3$ кН
31	$F > 22$ кН
32	$F > 9$ кН
33	$F < 4$ кН
34	$F < 10$ кН

S-37 файл o37s9A