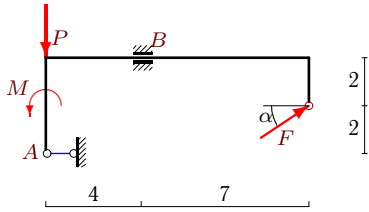# Равновесие рамы

Определить реакции опор рамы.

Кирсанов М.Н. Задачи по теоретической механике с решениями в **Maple** 11. – М.: ФИЗМАТЛИТ, 2010. — 264 с. (с.10)
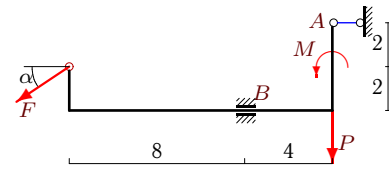

Задача S29.1. ⁹

$F = 15$ кН, $P = 18$ кН, $M = 10$ кНм, $\cos \alpha = 0.8$.

Задача S29.2. ⁹

$F = 40$ кН, $P = 24$ кН, $M = 7$ кНм, $\cos \alpha = 0.8$.

Задача S29.3. ⁹
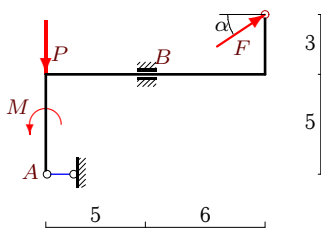
$F = 20$ кН, $P = 18$ кН, $M = 7$ кНм, $\cos \alpha = 0.8$.

Задача S29.4. ⁹
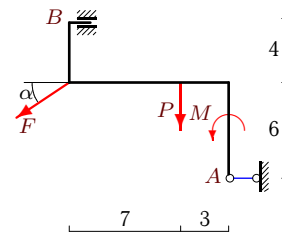
$F = 80$ кН, $P = 1$ кН, $M = 6$ кНм, $\cos \alpha = 0.8$.

Задача S29.5. ⁹
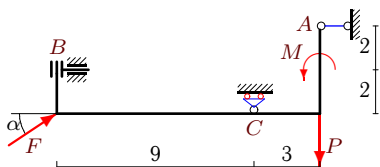
$F = 15$ кН, $P = 2$ кН, $M = 22$ кНм, $\cos \alpha = 0.8$.

Задача S29.6. ⁹
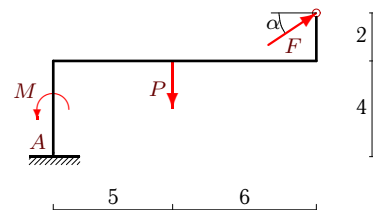
$F = 10$ кН, $P = 4$ кН, $M = 5$ кНм, $\cos \alpha = 0.8$.

Задача S29.7. ⁹
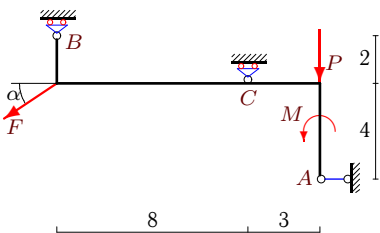
$F = 20$ кН, $P = 1$ кН, $M = 3$ кНм, $\cos \alpha = 0.8$.

Задача S29.8. ⁹
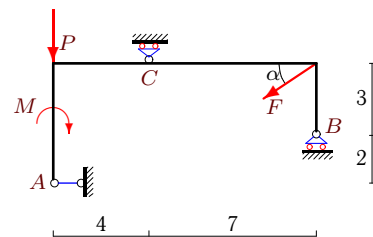
$F = 35$ кН, $P = 4$ кН, $M = 16$ кНм, $\cos \alpha = 0.8$.
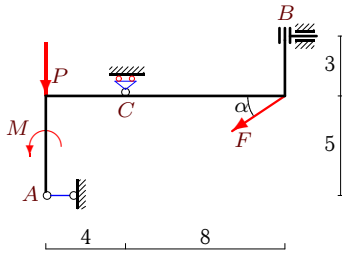
$F = 50\,\text{кН},\ P = 3\,\text{кН},\ M = 23\,\text{кНм},\ \cos\alpha = 0.8.$

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

$F = 100\,\text{кН},\ P = 3\,\text{кН},\ M = 9\,\text{кНм},\ \cos\alpha = 0.8.$

$F = 10\,\text{кН},\ P = 3\,\text{кН},\ M = 12\,\text{кНм},\ \cos\alpha = 0.8.$

$F = 5\,\text{кН},\ P = 2\,\text{кН},\ M = 7\,\text{кНм},\ \cos\alpha = 0.8.$

$F = 50\,\text{кН},\ P = 2\,\text{кН},\ M = 5\,\text{кНм},\ \cos\alpha = 0.8.$

$F = 25\,\text{кН},\ P = 3\,\text{кН},\ M = 10\,\text{кНм},\ \cos\alpha = 0.8.$

$F = 25\,\text{кН},\ P = 3\,\text{кН},\ M = 4\,\text{кНм},\ \cos\alpha = 0.8.$
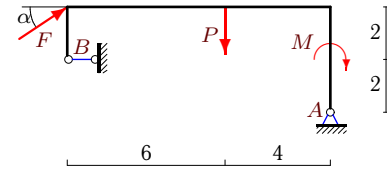
$F = 40\,\text{кН},\ P = 3\,\text{кН},\ M = 8\,\text{кНм},\ \cos\alpha = 0.8.$

$F = 30\,\text{кН},\ P = 3\,\text{кН},\ M = 12\,\text{кНм},\ \cos\alpha = 0.8.$

Задача S29.19.
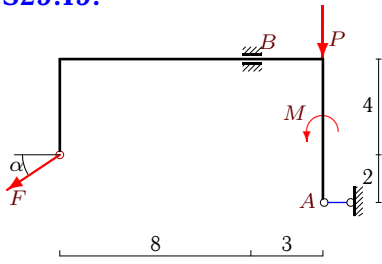
$F = 30\,\text{кН},\ P = 3\,\text{кН},\ M = 7\,\text{кНм},\ \cos\alpha = 0.8.$

Задача S29.20.
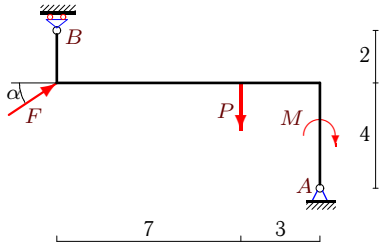

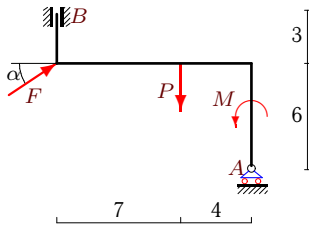$F = 40\,\text{кН},\ P = 3\,\text{кН},\ M = 9\,\text{кНм},\ \cos\alpha = 0.8.$

Задача S29.21.

$F = 40\,\text{кН},\ P = 24\,\text{кН},\ M = 7\,\text{кНм},\ \cos\alpha = 0.8.$

Задача S29.22.

$F = 35\,\text{кН},\ P = 11\,\text{кН},\ M = 6\,\text{кНм},\ \cos\alpha = 0.8.$

Задача S29.23.

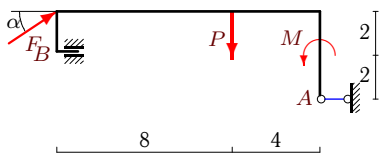$F = 55\,\text{кН},\ P = 2\,\text{кН},\ M = 8\,\text{кНм},\ \cos\alpha = 0.8.$

Задача S29.24.

$F = 15\,\text{кН},\ P = 2\,\text{кН},\ M = 8\,\text{кНм},\ \cos\alpha = 0.8.$

Задача S29.25.

$F = 35\,\text{кН},\ P = 2\,\text{кН},\ M = 17\,\text{кНм},\ \cos\alpha = 0.8.$
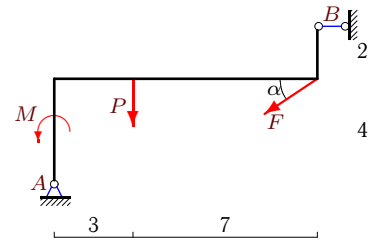
Задача S29.26.

$F = 15\,\text{кН},\ P = 2\,\text{кН},\ M = 6\,\text{кНм},\ \cos\alpha = 0.8.$

Задача S29.27.

$F = 5\,\text{кН},\ P = 2\,\text{кН},\ M = 9\,\text{кНм},\ \cos\alpha = 0.8.$
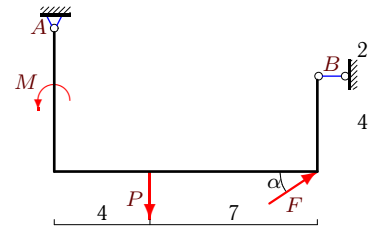
Задача S29.28.

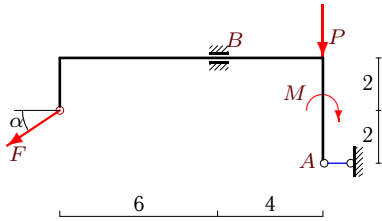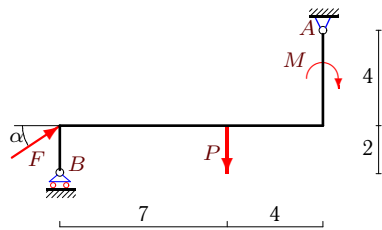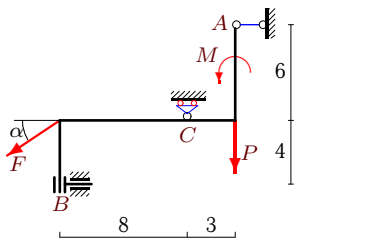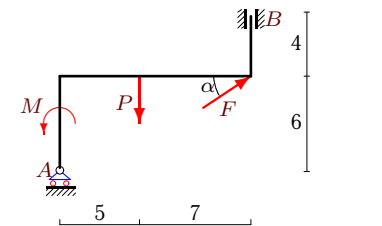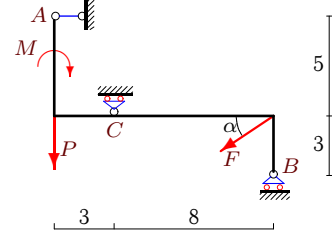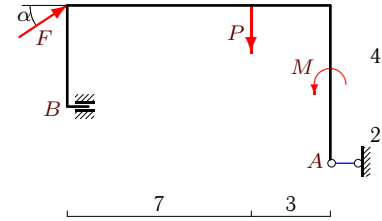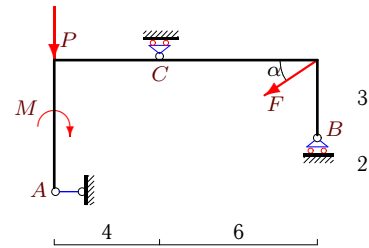$F = 10\,\text{кН},\ P = 1\,\text{кН},\ M = 4\,\text{кНм},\ \cos\alpha = 0.8.$

Задача S29.29. *9*
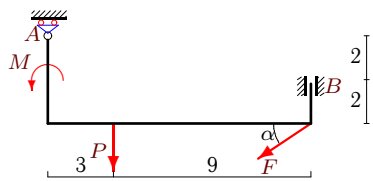
$F = 15$ кН, $P = 4$ кН, $M = 7$ кНм, $\cos \alpha = 0.8$.

Задача S29.30. *9*

$F = 15$ кН, $P = 12$ кН, $M = 7$ кНм, $\cos \alpha = 0.8$.
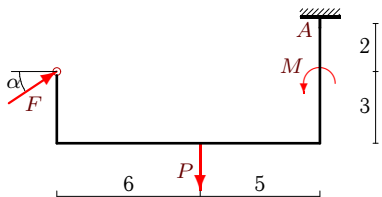
Задача S29.31. *9*

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

Задача S29.32. *9*
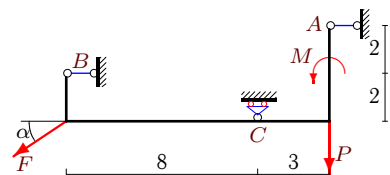
$F = 5$ кН, $P = 1$ кН, $M = 3$ кНм, $\cos \alpha = 0.8$.

Задача S29.33. *9*

$F = 60$ кН, $P = 3$ кН, $M = 9$ кНм, $\cos \alpha = 0.8$.

Задача S29.34. *9*
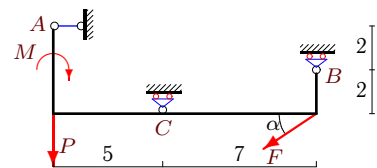
$F = 70$ кН, $P = 5$ кН, $M = 25$ кНм, $\cos \alpha = 0.8$.

№	X_A	Y_A	M_A	X_B	Y_B	M_B	Y_C
1	−12	−	−	−	9	−121	−
2	32	−	−	−	48	−39	−
3	−16	−	−	−	6	−41	−
4	64	−	−	−	49	−383	−
5	−12	−	−	−	−	17	−7
6	−8	−2	−3	−	−	−	−
7	16	−	−	−	20	−	−7
8	28	−	−	−	1	−	24
9	40	−	−	−	−	5	33
10	−	0	−	−4	−	−13	−
11	−80	35	−	−	−92	−	−
12	38	−3	−	−46	−	−	−
13	−	−1	−	−4	−	6	−
14	40	32	−233	−	−	−	−
15	−20	−	−	−	−12	94	−
16	−20	−	−	−	−12	−102	−
17	32	−	−	−	27	176	−
18	24	−	−	−	34	−	−13
19	24	−	−	−	21	−190	−
20	32	−	−	−	44	−	−17
21	32	−	−	−	48	−105	−
22	−28	−	−	−	−10	239	−
23	−44	−14	−	−	−17	−	−
24	12	−	−	−	−1	−	12
25	28	−	−	−	−	−11	23
26	19	11	−	−7	−	−	−
27	−	−1	−	−4	−	−51	−
28	49	−5	−	−57	−	−	−
29	−	13	−	12	−	137	−
30	−12	−	−	−	3	34	−
31	−4	−2	18	−	−	−	−
32	8	−	−	−4	−	−	4
33	82	39	−	−34	−	−	−
34	56	−	−	−	74	−	−27