

Расчет составной конструкции

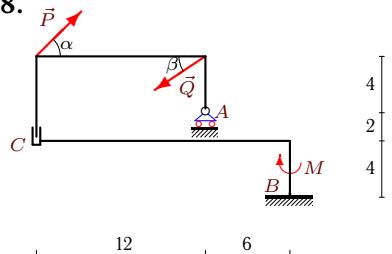
Рама состоит из двух частей, соединенных шарниром или скользящей заделкой. Дан погонный вес рамы ρ , размеры в метрах и нагрузки. Найти реакции опор.

Кирсанов М.Н. Решебник. Теоретическая механика с. 54.

Вариант 1 C8. <p>$P = 60 \text{ кН}$, $Q = 70 \text{ кН}$, $\alpha = 45^\circ$, $\beta = 60^\circ$, $\rho = 6 \text{ кН/м}$, $M = 90 \text{ кНм}$.</p>	Вариант 2 C8. <p>$P = 60 \text{ кН}$, $Q = 70 \text{ кН}$, $\alpha = 45^\circ$, $\beta = 60^\circ$, $\rho = 5 \text{ кН/м}$, $M = 60 \text{ кНм}$.</p>
Вариант 3 C8. <p>$P = 30 \text{ кН}$, $Q = 40 \text{ кН}$, $\alpha = 30^\circ$, $\beta = 45^\circ$, $\rho = 6 \text{ кН/м}$, $M = 50 \text{ кНм}$.</p>	Вариант 4 C8. <p>$P = 10 \text{ кН}$, $Q = 20 \text{ кН}$, $\alpha = 30^\circ$, $\beta = 60^\circ$, $\rho = 2 \text{ кН/м}$, $M = 70 \text{ кНм}$.</p>
Вариант 5 C8. <p>$P = 50 \text{ кН}$, $Q = 60 \text{ кН}$, $\alpha = 45^\circ$, $\beta = 30^\circ$, $\rho = 4 \text{ кН/м}$, $M = 110 \text{ кНм}$.</p>	Вариант 6 C8. <p>$P = 50 \text{ кН}$, $Q = 60 \text{ кН}$, $\alpha = 45^\circ$, $\beta = 30^\circ$, $\rho = 4 \text{ кН/м}$, $M = 30 \text{ кНм}$.</p>
Вариант 7 C8. <p>$P = 30 \text{ кН}$, $Q = 40 \text{ кН}$, $\alpha = 30^\circ$, $\beta = 45^\circ$, $\rho = 1 \text{ кН/м}$, $M = 50 \text{ кНм}$.</p>	Вариант 8 C8. <p>$P = 10 \text{ кН}$, $Q = 20 \text{ кН}$, $\alpha = 30^\circ$, $\beta = 60^\circ$, $\rho = 6 \text{ кН/м}$, $M = 90 \text{ кНм}$.</p>

Вариант 9

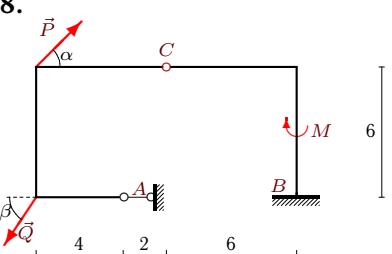
C8.



$$P = 50 \text{ kH}, Q = 60 \text{ kH}, \alpha = 45^\circ, \beta = 30^\circ, \rho = 6 \text{ kH/m}, M = 100 \text{ kNm}.$$

Вариант 10

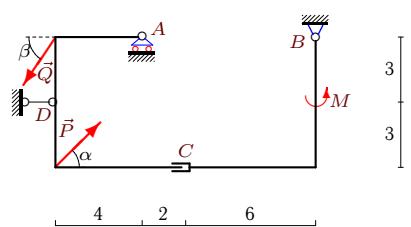
C8.



$$P = 60 \text{ kH}, Q = 70 \text{ kH}, \alpha = 45^\circ, \beta = 60^\circ, \rho = 5 \text{ kH/m}, M = 60 \text{ kNm}.$$

Вариант 11

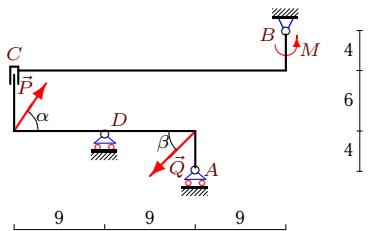
C8.



$$P = 60 \text{ kH}, Q = 70 \text{ kH}, \alpha = 45^\circ, \beta = 60^\circ, \rho = 4 \text{ kH/m}, M = 80 \text{ kNm}.$$

Вариант 12

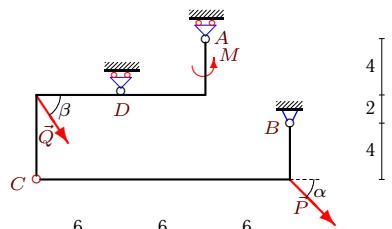
C8.



$$P = 40 \text{ kH}, Q = 50 \text{ kH}, \alpha = 60^\circ, \beta = 45^\circ, \rho = 4 \text{ kH/m}, M = 20 \text{ kNm}.$$

Вариант 13

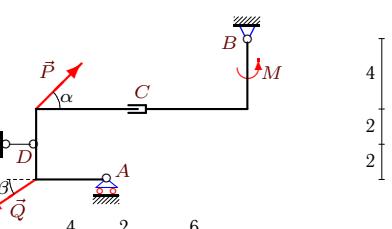
C8.



$$P = 60 \text{ kH}, Q = 70 \text{ kH}, \alpha = 45^\circ, \beta = 60^\circ, \rho = 3 \text{ kH/m}, M = 100 \text{ kNm}.$$

Вариант 14

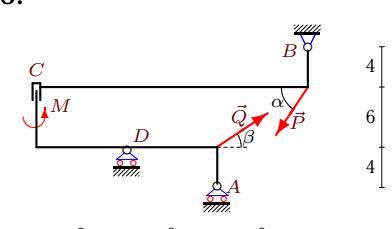
C8.



$$P = 50 \text{ kH}, Q = 60 \text{ kH}, \alpha = 45^\circ, \beta = 30^\circ, \rho = 4 \text{ kH/m}, M = 60 \text{ kNm}.$$

Вариант 15

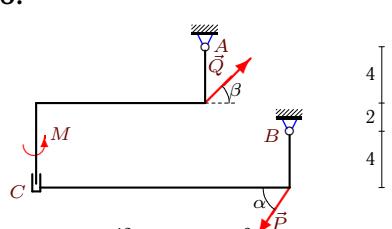
C8.



$$P = 20 \text{ kH}, Q = 30 \text{ kH}, \alpha = 60^\circ, \beta = 30^\circ, \rho = 4 \text{ kH/m}, M = 40 \text{ kNm}.$$

Вариант 16

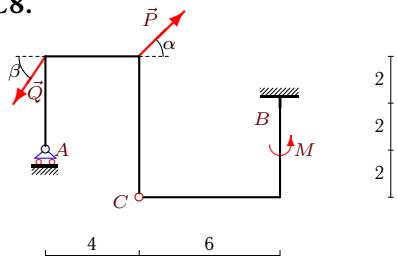
C8.



$$P = 40 \text{ kH}, Q = 50 \text{ kH}, \alpha = 60^\circ, \beta = 45^\circ, \rho = 2 \text{ kH/m}, M = 110 \text{ kNm}.$$

Вариант 17

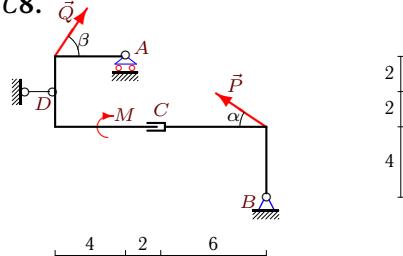
C8.



$$P = 60 \text{ kH}, Q = 70 \text{ kH}, \alpha = 45^\circ, \beta = 60^\circ, \rho = 5 \text{ kH/m}, M = 120 \text{ kNm}.$$

Вариант 18

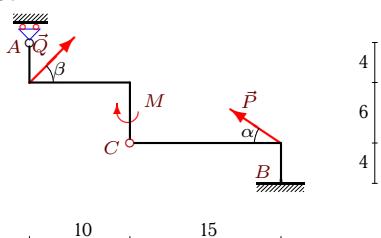
C8.



$$P = 10 \text{ kH}, Q = 20 \text{ kH}, \alpha = 30^\circ, \beta = 60^\circ, \rho = 4 \text{ kH/m}, M = 100 \text{ kNm}.$$

Вариант 19

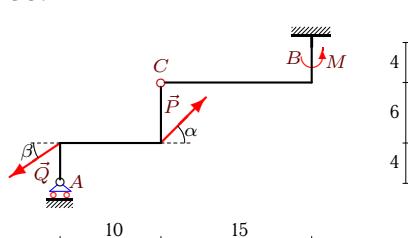
C8.



$$P = 30 \text{ kH}, Q = 40 \text{ kH}, \alpha = 30^\circ, \beta = 45^\circ, \rho = 5 \text{ kH/m}, M = 130 \text{ kNm}.$$

Вариант 20

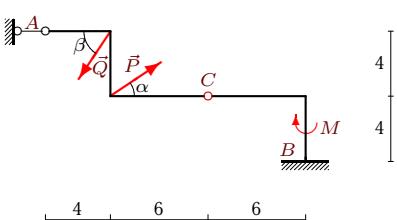
C8.



$$P = 50 \text{ kH}, Q = 60 \text{ kH}, \alpha = 45^\circ, \beta = 30^\circ, \rho = 5 \text{ kH/m}, M = 40 \text{ kNm}.$$

Вариант 21

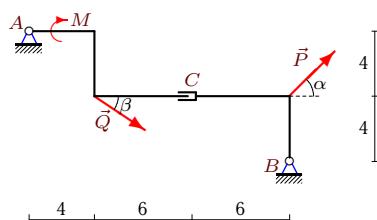
C8.



$$P = 10 \text{ kH}, Q = 20 \text{ kH}, \alpha = 30^\circ, \beta = 60^\circ, \rho = 5 \text{ kH/m}, M = 70 \text{ kNm}.$$

Вариант 22

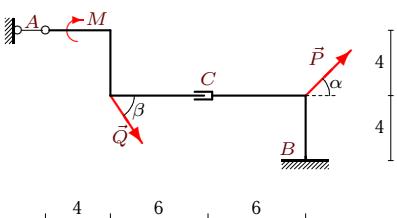
C8.



$$P = 50 \text{ kH}, Q = 60 \text{ kH}, \alpha = 45^\circ, \beta = 30^\circ, \rho = 2 \text{ kH/m}, M = 80 \text{ kNm}.$$

Вариант 23

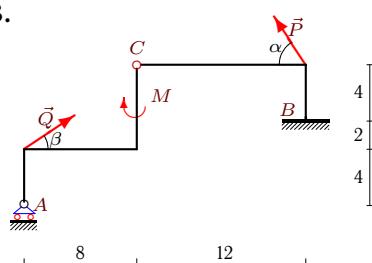
C8.



$$P = 60 \text{ kH}, Q = 70 \text{ kH}, \alpha = 45^\circ, \beta = 60^\circ, \rho = 6 \text{ kH/m}, M = 80 \text{ kNm}.$$

Вариант 24

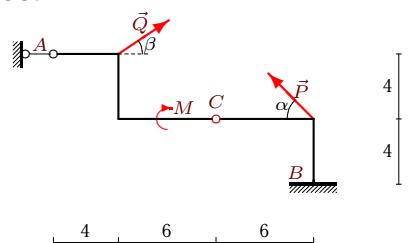
C8.



$$P = 20 \text{ kH}, Q = 30 \text{ kH}, \alpha = 60^\circ, \beta = 30^\circ, \rho = 5 \text{ kH/m}, M = 60 \text{ kNm}.$$

Вариант 25

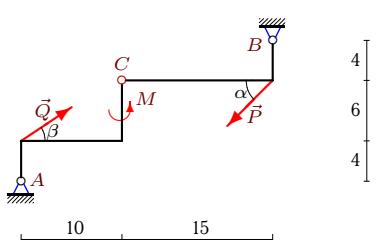
C8.



$P = 50 \text{ kH}$, $Q = 60 \text{ kH}$, $\alpha = 45^\circ$,
 $\beta = 30^\circ$, $\rho = 5 \text{ kH/m}$, $M = 90 \text{ kNm}$.

Вариант 26

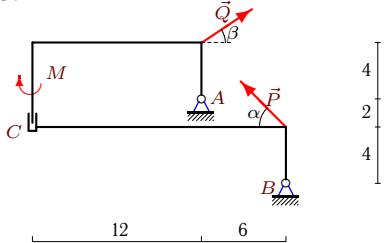
C8.



$P = 50 \text{ kH}$, $Q = 60 \text{ kH}$, $\alpha = 45^\circ$,
 $\beta = 30^\circ$, $\rho = 1 \text{ kH/m}$, $M = 60 \text{ kNm}$.

Вариант 27

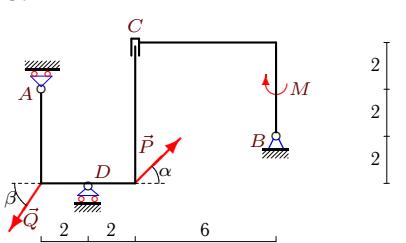
C8.



$P = 50 \text{ kH}$, $Q = 60 \text{ kH}$, $\alpha = 45^\circ$,
 $\beta = 30^\circ$, $\rho = 2 \text{ kH/m}$, $M = 120 \text{ kNm}$.

Вариант 28

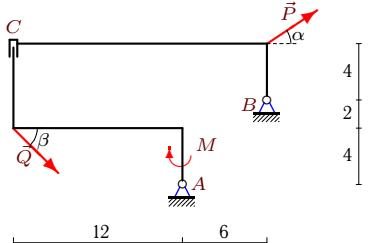
C8.



$P = 60 \text{ kH}$, $Q = 70 \text{ kH}$, $\alpha = 45^\circ$,
 $\beta = 60^\circ$, $\rho = 4 \text{ kH/m}$, $M = 30 \text{ kNm}$.

Вариант 29

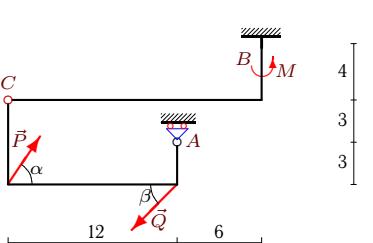
C8.



$P = 30 \text{ kH}$, $Q = 40 \text{ kH}$, $\alpha = 30^\circ$,
 $\beta = 45^\circ$, $\rho = 2 \text{ kH/m}$, $M = 30 \text{ kNm}$.

Вариант 30

C8.



$P = 40 \text{ kH}$, $Q = 50 \text{ kH}$, $\alpha = 60^\circ$,
 $\beta = 45^\circ$, $\rho = 5 \text{ kH/m}$, $M = 10 \text{ kNm}$.

Ответы

	X_A	Y_A	X_B	Y_B	X_D	Y_D	M_B
1	-35	—	42.43	40.95	—	—	-408.24
2	-198.43	—	121	223.05	—	—	-389.7
3	2.3	—	0	157.28	—	—	-1161.49
4	1.34	45.95	0	30.37	—	—	—
5	—	158.57	16.6	76	—	-83.92	—
6	—	-134.75	-87.32	52.64	—	252.75	—
7	128.34	39.27	-130.65	-18.55	—	—	—
8	-10	—	8.66	179.68	—	—	-1156.87
9	—	126.64	16.6	132	—	—	-1477.8
10	-41.53	—	34.1	158.2	—	—	-823.79
11	—	158.33	0	-28.13	-7.43	—	—
12	—	-85.16	15.36	124	—	197.88	—
13	—	-92.5	-77.43	64.22	—	263.32	—
14	—	57.64	0	33	16.6	—	—
15	—	-213.87	-15.98	141.32	—	310.87	—
16	95.21	8.64	-110.57	78.64	—	—	—
17	—	79.48	-7.43	58.71	—	—	-291.98
18	—	43.35	8.66	30.33	-10	—	—
19	—	-13.25	-2.3	164.97	—	—	-1827.84
20	—	65.04	16.6	124.6	—	—	-980.2
21	120.98	—	-119.64	132.32	—	—	-35.36
22	-51.96	43.65	-35.36	-1	—	—	—
23	-35	—	-42.43	162.2	—	—	-1673.76
24	—	36.99	-15.98	100.7	—	—	-752.25
25	-26.96	—	10.36	54.64	—	—	-371.42
26	-19.43	-3.25	2.82	47.6	—	—	—
27	18.97	14	-35.57	8.64	—	—	—
28	—	123.47	-7.43	40	—	-49.28	—
29	-145.68	72.28	91.41	29	—	—	—
30	—	88.03	15.36	127.68	—	—	-1076.84