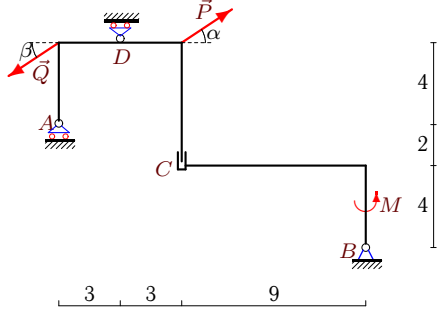


Составная прямоугольная рама

Рама состоит из двух частей, соединенных шарниром или скользящей заделкой. Размеры даны в метрах. Найти реакции опор.

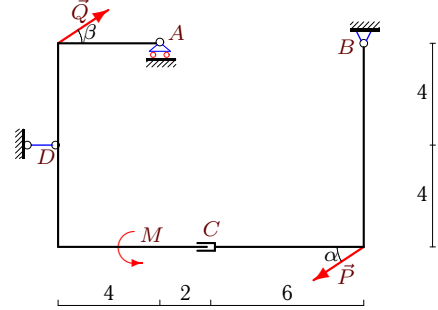
Кирсанов М.Н. **Решебник. Теоретическая механика**/Под ред. А. И. Кириллова.– М.:ФИЗМАТЛИТ, 2008.– 384 с. (с.54.)

Задача 8.1.



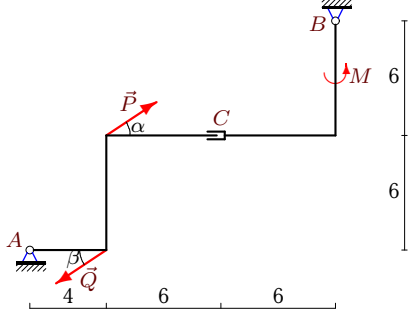
$P=5\text{кН}$, $Q=7\text{кН}$, $\alpha=45^\circ$, $\beta=30^\circ$, $M=1\text{кНм}$.

Задача 8.2.



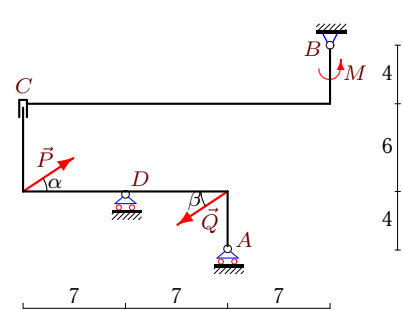
$P=7\text{кН}$, $Q=8\text{кН}$, $\alpha=60^\circ$, $\beta=45^\circ$, $M=6\text{кНм}$.

Задача 8.3.



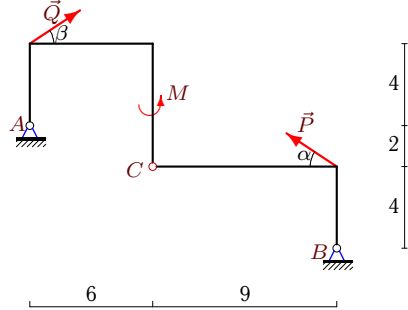
$P=3\text{кН}$, $Q=6\text{кН}$, $\alpha=45^\circ$, $\beta=60^\circ$, $M=5\text{кНм}$.

Задача 8.4.



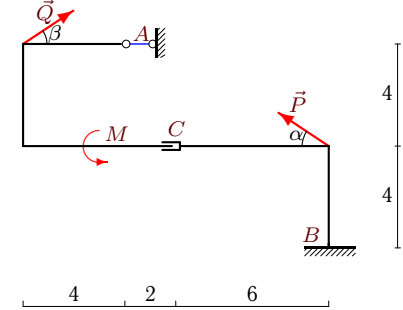
$P=5\text{кН}$, $Q=8\text{кН}$, $\alpha=60^\circ$, $\beta=30^\circ$, $M=6\text{кНм}$.

Задача 8.5.



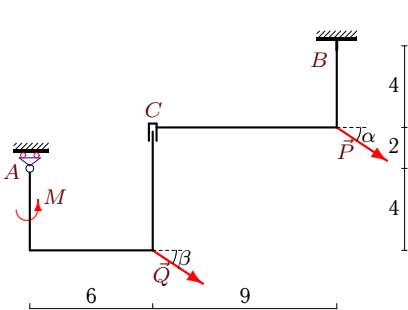
$P=4\text{кН}$, $Q=6\text{кН}$, $\alpha=60^\circ$, $\beta=45^\circ$, $M=7\text{кНм}$.

Задача 8.6.



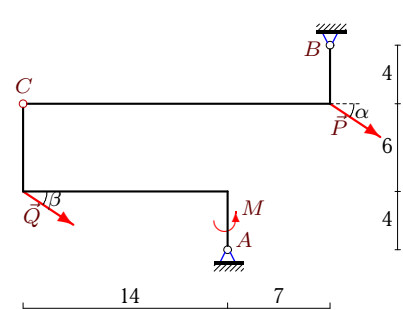
$P=9\text{кН}$, $Q=4\text{кН}$, $\alpha=30^\circ$, $\beta=60^\circ$, $M=2\text{кНм}$.

Задача 8.7.



$P=8\text{кН}$, $Q=8\text{кН}$, $\alpha=30^\circ$, $\beta=60^\circ$, $M=1\text{кНм}$.

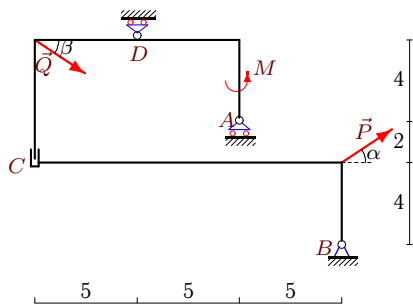
Задача 8.8.



$P=3\text{кН}$, $Q=1\text{кН}$, $\alpha=60^\circ$, $\beta=30^\circ$, $M=5\text{кНм}$.

Задача 8.9.

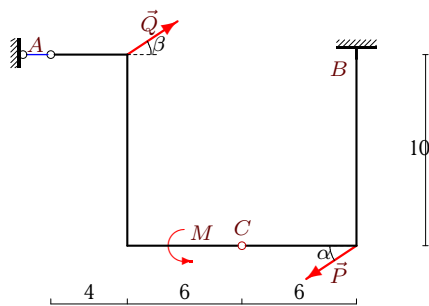
4



$P=6\text{кН}$, $Q=6\text{кН}$, $\alpha=45^\circ$, $\beta=60^\circ$, $M=4\text{ кНм}$.

Задача 8.11.

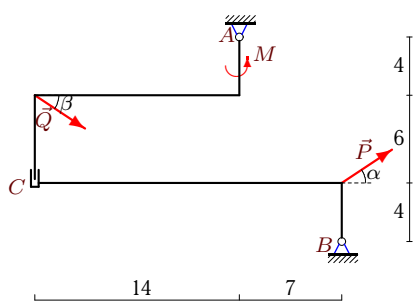
4



$P=8\text{кН}$, $Q=5\text{кН}$, $\alpha=45^\circ$, $\beta=60^\circ$, $M=2\text{ кНм}$.

Задача 8.13.

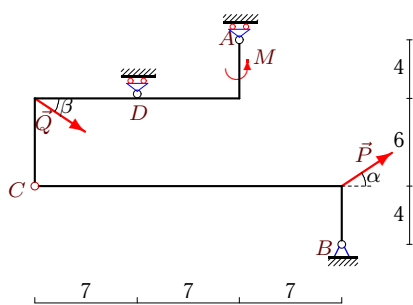
4



$P=4\text{кН}$, $Q=7\text{кН}$, $\alpha=60^\circ$, $\beta=30^\circ$, $M=3\text{ кНм}$.

Задача 8.15.

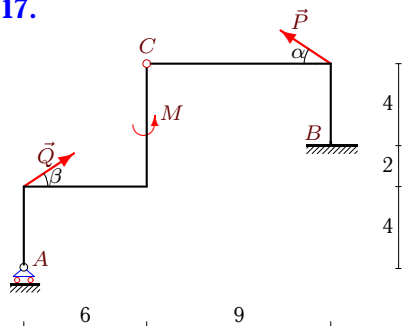
4



$P=5\text{кН}$, $Q=1\text{кН}$, $\alpha=60^\circ$, $\beta=30^\circ$, $M=5\text{ кНм}$.

Задача 8.17.

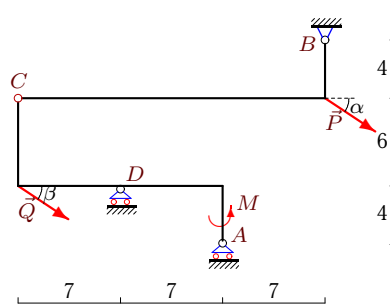
4



$P=8\text{кН}$, $Q=2\text{кН}$, $\alpha=45^\circ$, $\beta=30^\circ$, $M=8\text{ кНм}$.

Задача 8.10.

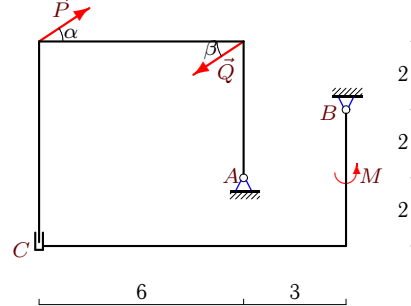
4



$P=5\text{кН}$, $Q=6\text{кН}$, $\alpha=45^\circ$, $\beta=60^\circ$, $M=1\text{ кНм}$.

Задача 8.12.

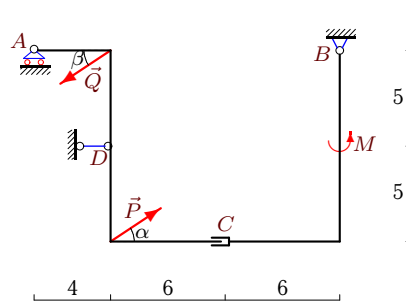
4



$P=3\text{кН}$, $Q=7\text{кН}$, $\alpha=60^\circ$, $\beta=45^\circ$, $M=1\text{ кНм}$.

Задача 8.14.

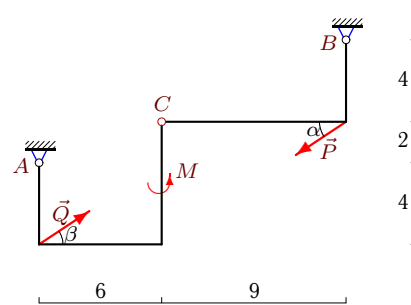
4



$P=5\text{кН}$, $Q=1\text{кН}$, $\alpha=60^\circ$, $\beta=30^\circ$, $M=5\text{ кНм}$.

Задача 8.16.

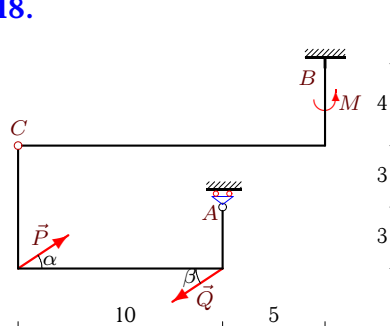
4



$P=4\text{кН}$, $Q=4\text{кН}$, $\alpha=60^\circ$, $\beta=30^\circ$, $M=3\text{ кНм}$.

Задача 8.18.

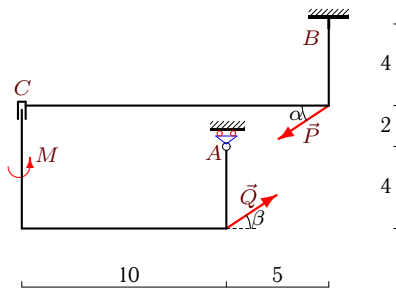
4



$P=6\text{кН}$, $Q=6\text{кН}$, $\alpha=60^\circ$, $\beta=45^\circ$, $M=3\text{ кНм}$.

Задача 8.19.

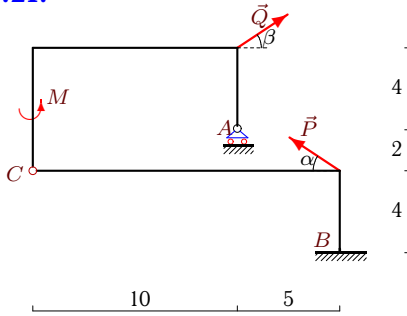
4



$P=9\text{кН}$, $Q=4\text{кН}$, $\alpha=60^\circ$, $\beta=45^\circ$, $M=4\text{ кНм}$.

Задача 8.21.

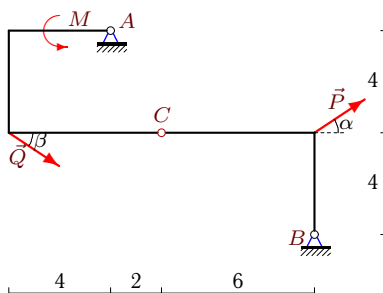
4



$P=8\text{кН}$, $Q=4\text{кН}$, $\alpha=60^\circ$, $\beta=45^\circ$, $M=2\text{ кНм}$.

Задача 8.23.

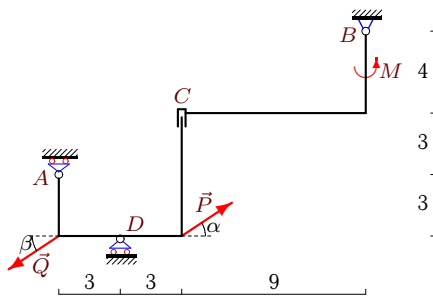
4



$P=3\text{кН}$, $Q=1\text{кН}$, $\alpha=45^\circ$, $\beta=30^\circ$, $M=6\text{ кНм}$.

Задача 8.25.

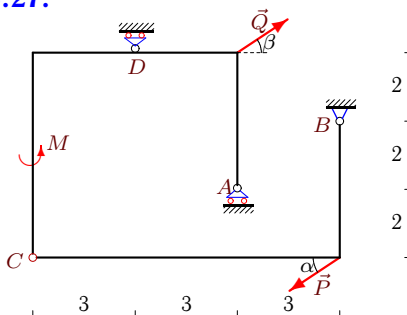
4



$P=5\text{кН}$, $Q=2\text{кН}$, $\alpha=45^\circ$, $\beta=60^\circ$, $M=4\text{ кНм}$.

Задача 8.27.

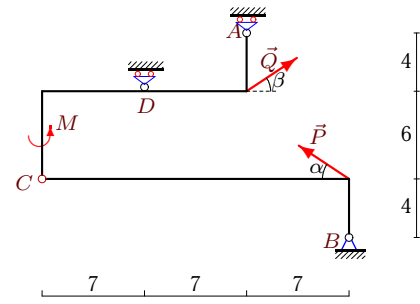
4



$P=6\text{кН}$, $Q=6\text{кН}$, $\alpha=60^\circ$, $\beta=45^\circ$, $M=6\text{ кНм}$.

Задача 8.20.

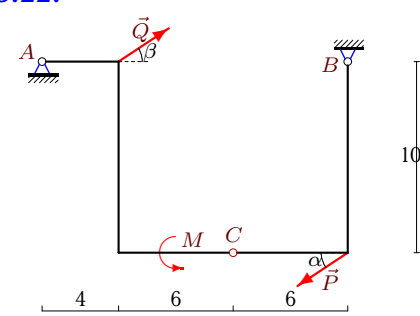
4



$P=6\text{кН}$, $Q=4\text{кН}$, $\alpha=60^\circ$, $\beta=30^\circ$, $M=4\text{ кНм}$.

Задача 8.22.

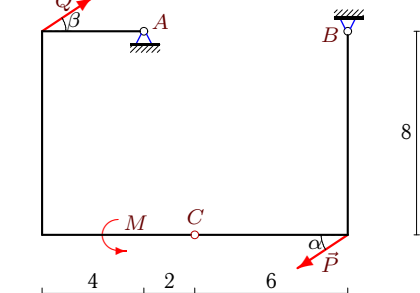
4



$P=4\text{кН}$, $Q=4\text{кН}$, $\alpha=60^\circ$, $\beta=30^\circ$, $M=6\text{ кНм}$.

Задача 8.24.

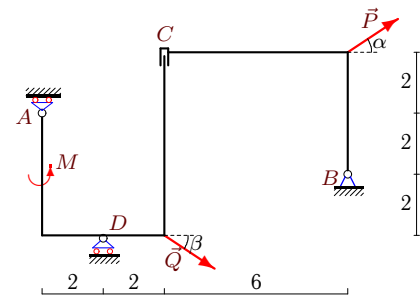
4



$P=4\text{кН}$, $Q=9\text{кН}$, $\alpha=30^\circ$, $\beta=45^\circ$, $M=7\text{ кНм}$.

Задача 8.26.

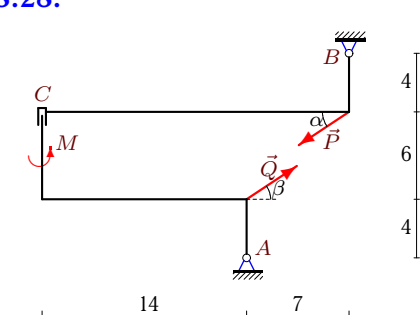
4



$P=6\text{кН}$, $Q=4\text{кН}$, $\alpha=60^\circ$, $\beta=45^\circ$, $M=3\text{ кНм}$.

Задача 8.28.

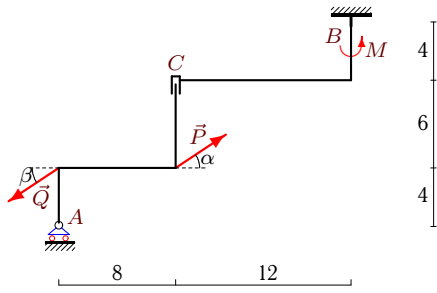
4



$P=5\text{кН}$, $Q=2\text{кН}$, $\alpha=30^\circ$, $\beta=60^\circ$, $M=7\text{ кНм}$.

Задача 8.29.

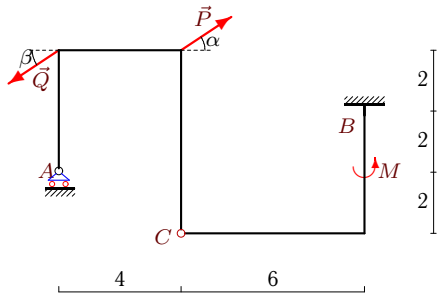
4



$P=7\text{кН}, Q=7\text{кН}, \alpha=60^\circ, \beta=45^\circ, M=6\text{ кНм}.$

Задача 8.31.

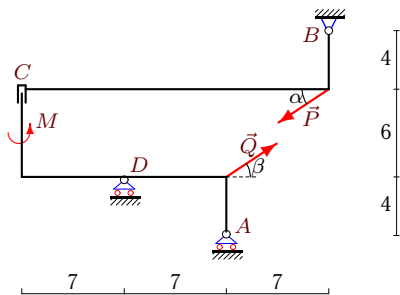
4



$P=6\text{кН}, Q=1\text{кН}, \alpha=60^\circ, \beta=45^\circ, M=6\text{ кНм}.$

Задача 8.33.

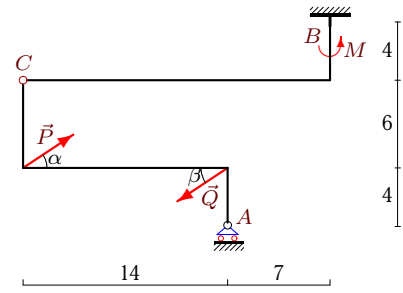
4



$P=7\text{кН}, Q=5\text{кН}, \alpha=60^\circ, \beta=30^\circ, M=2\text{ кНм}.$

Задача 8.30.

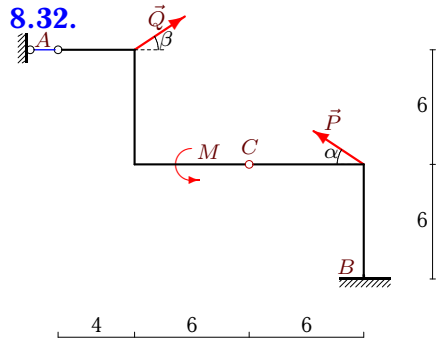
4



$P=6\text{кН}, Q=7\text{кН}, \alpha=60^\circ, \beta=45^\circ, M=5\text{ кНм}.$

Задача 8.32.

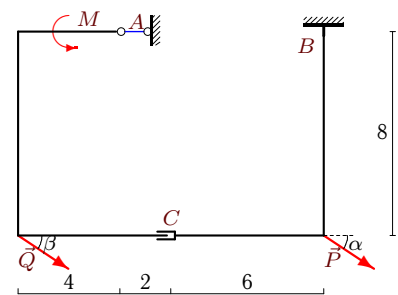
4



$P=8\text{кН}, Q=2\text{кН}, \alpha=30^\circ, \beta=45^\circ, M=4\text{ кНм}.$

Задача 8.34.

4



$P=8\text{кН}, Q=3\text{кН}, \alpha=45^\circ, \beta=60^\circ, M=9\text{ кНм}.$

Составная прямоугольная рама

| | X_A | Y_A | X_B | Y_B | X_D | Y_D | M_B |
|----|--------|---------|---------|---------|--------|---------|---------|
| 1 | — | 15.791 | 2.527 | 0.000 | — | -15.827 | — |
| 2 | — | -14.064 | 3.500 | 14.469 | -5.657 | — | — |
| 3 | 0.879 | 1.823 | 0.000 | 1.252 | — | — | — |
| 4 | — | 13.799 | 4.428 | -0.000 | — | -14.129 | — |
| 5 | 18.713 | -13.556 | -20.956 | 5.850 | — | — | — |
| 6 | -2.000 | — | 7.794 | -7.964 | — | — | 8.392 |
| 7 | — | 6.928 | -10.928 | 4.000 | — | — | -27.144 |
| 8 | -1.856 | 0.597 | -0.510 | 2.501 | — | — | — |
| 9 | — | 3.398 | -7.243 | -4.243 | — | 1.798 | — |
| 10 | — | -9.155 | -6.536 | 2.291 | — | 15.596 | — |
| 11 | -4.898 | — | 8.055 | 1.327 | — | — | 106.530 |
| 12 | 3.844 | 2.352 | -0.395 | 0.000 | — | — | — |
| 13 | -1.187 | 3.500 | -6.875 | -3.464 | — | — | — |
| 14 | — | -1.508 | 0.000 | -2.322 | -1.634 | — | — |
| 15 | — | 0.169 | -3.366 | -3.689 | — | -0.310 | — |
| 16 | 29.821 | 11.904 | -31.285 | -10.440 | — | — | — |
| 17 | — | 2.065 | 3.925 | -8.722 | — | — | 11.889 |
| 18 | — | 4.988 | 1.243 | -5.942 | — | — | 91.097 |
| 19 | — | -2.828 | 1.672 | 7.794 | — | — | -14.284 |
| 20 | — | 0.486 | -0.464 | -5.108 | — | -2.575 | — |
| 21 | — | -1.331 | 1.172 | -8.425 | — | — | 17.770 |
| 22 | -1.689 | -2.375 | 0.225 | 3.839 | — | — | — |
| 23 | 4.494 | -4.487 | -7.481 | 2.866 | — | — | — |
| 24 | -7.228 | -12.135 | 4.328 | 7.771 | — | — | — |
| 25 | — | 15.053 | -2.536 | 0.000 | — | -16.856 | — |
| 26 | — | -4.500 | -5.828 | -5.196 | — | 7.328 | — |
| 27 | — | 1.690 | -1.243 | 4.644 | — | -5.381 | — |
| 28 | 0.023 | -1.732 | 3.307 | 2.500 | — | — | — |
| 29 | — | -1.112 | 1.450 | 0.000 | — | — | -40.000 |
| 30 | — | 5.785 | 1.950 | -6.032 | — | — | 129.466 |
| 31 | — | -2.732 | -2.293 | -1.757 | — | — | -4.631 |
| 32 | -2.162 | — | 7.676 | -5.414 | — | — | -37.569 |
| 33 | — | -6.972 | -0.830 | 6.062 | — | 4.472 | — |
| 34 | -1.500 | — | -5.657 | 8.255 | — | — | -97.432 |