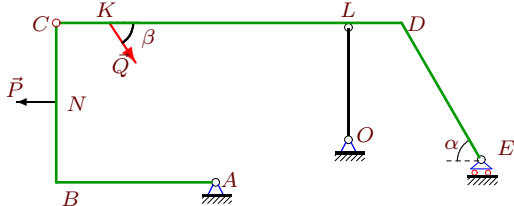


Составная конструкция

Определить реакции опор конструкции (в кН), состоящей из двух тел.

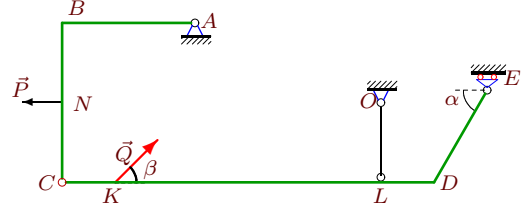
Кирсанов М.Н. **Решебник. Теоретическая механика**/Под ред. А. И. Кириллова.- М.:ФИЗМАТЛИТ, 2002.- 384 с. (с.67.)

Задача 7.1.



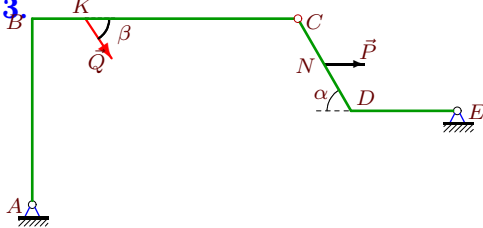
$P = 7 \text{ кН}, Q = 8 \text{ кН}, \alpha = 60^\circ, \beta = 60^\circ,$
 $AB = 6 \text{ м}, BC = 6 \text{ м}, CD = 13 \text{ м},$
 $DE = 6 \text{ м}, CN = 3 \text{ м}, CK = 2 \text{ м}. LD = 2 \text{ м}$

Задача 7.2.



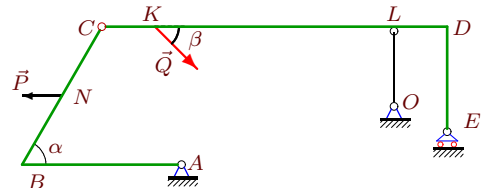
$P = 6 \text{ кН}, Q = 8 \text{ кН}, \alpha = 60^\circ, \beta = 45^\circ,$
 $AB = 5 \text{ м}, BC = 6 \text{ м}, CD = 14 \text{ м},$
 $DE = 4 \text{ м}, CN = 3 \text{ м}, CK = 2 \text{ м}. LD = 2 \text{ м}$

Задача 7.3.



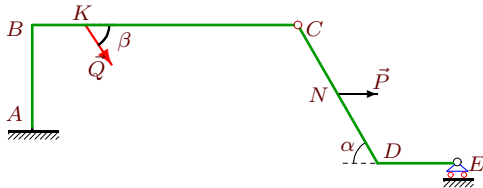
$P = 7 \text{ кН}, Q = 7 \text{ кН}, \alpha = 60^\circ, \beta = 75^\circ,$
 $AB = 7 \text{ м}, BC = 10 \text{ м}, CD = 4 \text{ м},$
 $DE = 4 \text{ м}, CN = 2 \text{ м}, BK = 2 \text{ м}.$

Задача 7.4.



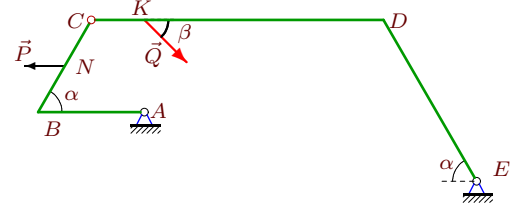
$P = 6 \text{ кН}, Q = 1 \text{ кН}, \alpha = 60^\circ, \beta = 45^\circ,$
 $AB = 6 \text{ м}, BC = 6 \text{ м}, CD = 13 \text{ м},$
 $DE = 4 \text{ м}, CN = 3 \text{ м}, CK = 2 \text{ м}. LD = 2 \text{ м}$

Задача 7.5.



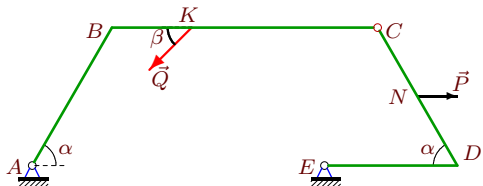
$P = 8 \text{ кН}, Q = 8 \text{ кН}, \alpha = 60^\circ, \beta = 60^\circ,$
 $AB = 4 \text{ м}, BC = 10 \text{ м}, CD = 6 \text{ м},$
 $DE = 3 \text{ м}, CN = 3 \text{ м}, BK = 2 \text{ м}.$

Задача 7.6.



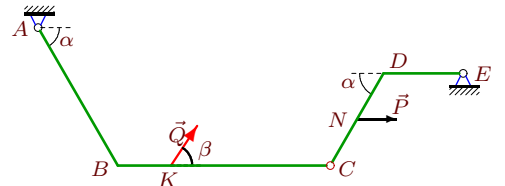
$P = 4 \text{ кН}, Q = 4 \text{ кН}, \alpha = 60^\circ, \beta = 30^\circ,$
 $AB = 4 \text{ м}, BC = 4 \text{ м}, CD = 11 \text{ м},$
 $DE = 7 \text{ м}, CN = 2 \text{ м}, CK = 2 \text{ м}.$

Задача 7.7.



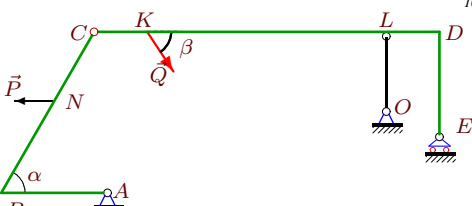
$P = 5 \text{ кН}, Q = 3 \text{ кН}, \alpha = 60^\circ, \beta = 45^\circ,$
 $AB = 6 \text{ м}, BC = 10 \text{ м}, CD = 6 \text{ м},$
 $DE = 5 \text{ м}, CN = 3 \text{ м}, BK = 3 \text{ м}.$

Задача 7.8.



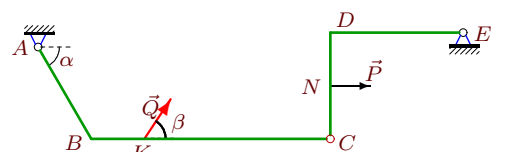
$P = 6 \text{ кН}, Q = 5 \text{ кН}, \alpha = 60^\circ, \beta = 60^\circ,$
 $AB = 6 \text{ м}, BC = 8 \text{ м}, CD = 4 \text{ м},$
 $DE = 3 \text{ м}, CN = 2 \text{ м}, BK = 2 \text{ м}.$

Задача 7.9.



$P = 7 \text{ кН}, Q = 2 \text{ кН}, \alpha = 60^\circ, \beta = 60^\circ,$
 $AB = 4 \text{ м}, BC = 7 \text{ м}, CD = 13 \text{ м},$
 $DE = 4 \text{ м}, CN = 3 \text{ м}, CK = 2 \text{ м}. LD = 2 \text{ м}$

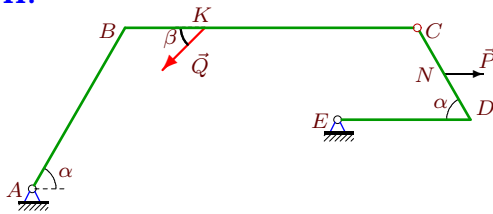
Задача 7.10.



$P = 7 \text{ кН}, Q = 2 \text{ кН}, \alpha = 60^\circ, \beta = 75^\circ,$
 $AB = 4 \text{ м}, BC = 9 \text{ м}, CD = 4 \text{ м},$
 $DE = 5 \text{ м}, CN = 2 \text{ м}, BK = 2 \text{ м}.$

Задача 7.11.

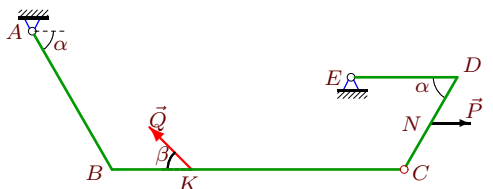
10



$P = 4 \text{ кН}, Q = 3 \text{ кН}, \alpha = 60^\circ, \beta = 30^\circ,$
 $AB = 7 \text{ м}, BC = 11 \text{ м}, CD = 4 \text{ м},$
 $DE = 5 \text{ м}, CN = 2 \text{ м}, BK = 3 \text{ м}.$

Задача 7.13.

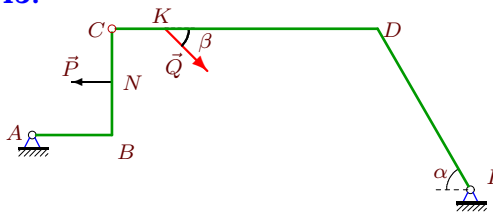
10



$P = 5 \text{ кН}, Q = 4 \text{ кН}, \alpha = 60^\circ, \beta = 45^\circ,$
 $AB = 6 \text{ м}, BC = 11 \text{ м}, CD = 4 \text{ м},$
 $DE = 4 \text{ м}, CN = 2 \text{ м}, BK = 3 \text{ м}.$

Задача 7.15.

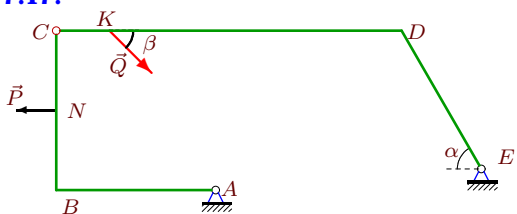
10



$P = 5 \text{ кН}, Q = 7 \text{ кН}, \alpha = 60^\circ, \beta = 45^\circ,$
 $AB = 3 \text{ м}, BC = 4 \text{ м}, CD = 10 \text{ м},$
 $DE = 7 \text{ м}, CN = 2 \text{ м}, CK = 2 \text{ м}.$

Задача 7.17.

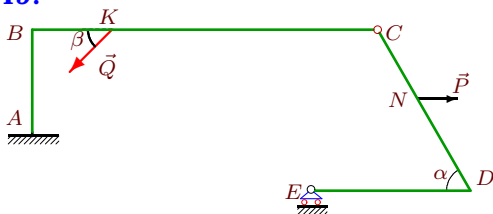
10



$P = 4 \text{ кН}, Q = 8 \text{ кН}, \alpha = 60^\circ, \beta = 30^\circ,$
 $AB = 6 \text{ м}, BC = 6 \text{ м}, CD = 13 \text{ м},$
 $DE = 6 \text{ м}, CN = 3 \text{ м}, CK = 2 \text{ м}.$

Задача 7.19.

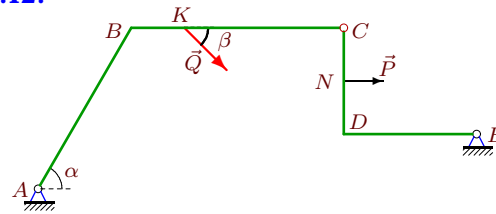
10



$P = 6 \text{ кН}, Q = 6 \text{ кН}, \alpha = 60^\circ, \beta = 30^\circ,$
 $AB = 4 \text{ м}, BC = 13 \text{ м}, CD = 7 \text{ м},$
 $DE = 6 \text{ м}, CN = 3 \text{ м}, BK = 3 \text{ м}.$

Задача 7.12.

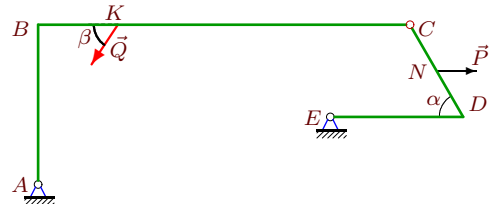
10



$P = 4 \text{ кН}, Q = 1 \text{ кН}, \alpha = 60^\circ, \beta = 30^\circ,$
 $AB = 7 \text{ м}, BC = 8 \text{ м}, CD = 4 \text{ м},$
 $DE = 5 \text{ м}, CN = 2 \text{ м}, BK = 2 \text{ м}.$

Задача 7.14.

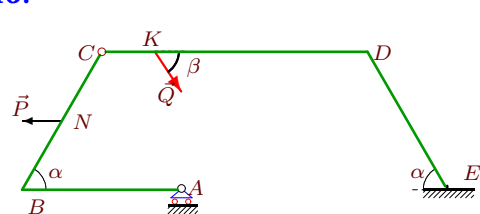
10



$P = 7 \text{ кН}, Q = 8 \text{ кН}, \alpha = 60^\circ, \beta = 75^\circ,$
 $AB = 6 \text{ м}, BC = 14 \text{ м}, CD = 4 \text{ м},$
 $DE = 5 \text{ м}, CN = 2 \text{ м}, BK = 3 \text{ м}.$

Задача 7.16.

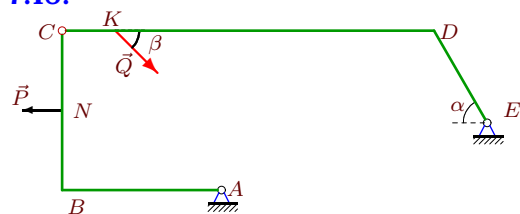
10



$P = 9 \text{ кН}, Q = 3 \text{ кН}, \alpha = 60^\circ, \beta = 75^\circ,$
 $AB = 6 \text{ м}, BC = 6 \text{ м}, CD = 10 \text{ м},$
 $DE = 6 \text{ м}, CN = 3 \text{ м}, CK = 2 \text{ м}.$

Задача 7.18.

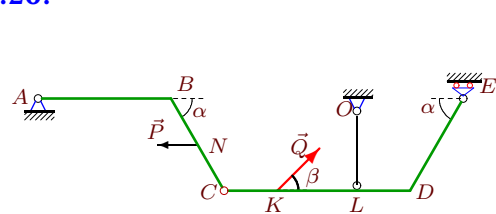
10



$P = 4 \text{ кН}, Q = 7 \text{ кН}, \alpha = 60^\circ, \beta = 30^\circ,$
 $AB = 6 \text{ м}, BC = 6 \text{ м}, CD = 14 \text{ м},$
 $DE = 4 \text{ м}, CN = 3 \text{ м}, CK = 2 \text{ м}.$

Задача 7.20.

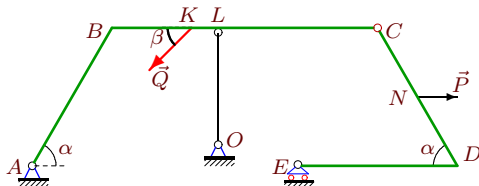
10



$P = 5 \text{ кН}, Q = 3 \text{ кН}, \alpha = 60^\circ, \beta = 30^\circ,$
 $AB = 5 \text{ м}, BC = 4 \text{ м}, CD = 7 \text{ м},$
 $DE = 4 \text{ м}, CN = 2 \text{ м}, CK = 2 \text{ м}, LD = 2 \text{ м}.$

Задача 7.21.

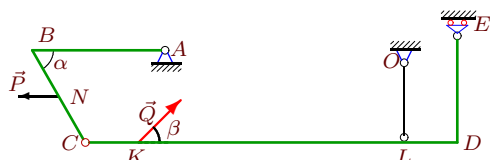
10



$P = 6 \text{ кН}, Q = 3 \text{ кН}, \alpha = 60^\circ, \beta = 45^\circ,$
 $AB = 6 \text{ м}, BC = 10 \text{ м}, CD = 6 \text{ м},$
 $DE = 6 \text{ м}, CN = 3 \text{ м}, BK = 3 \text{ м}. LC = 6 \text{ м}.$

Задача 7.23.

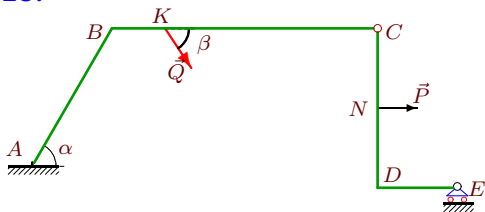
10



$P = 6 \text{ кН}, Q = 2 \text{ кН}, \alpha = 60^\circ, \beta = 45^\circ,$
 $AB = 5 \text{ м}, BC = 4 \text{ м}, CD = 14 \text{ м},$
 $DE = 4 \text{ м}, CN = 2 \text{ м}, CK = 2 \text{ м}. LD = 2 \text{ м}$

Задача 7.25.

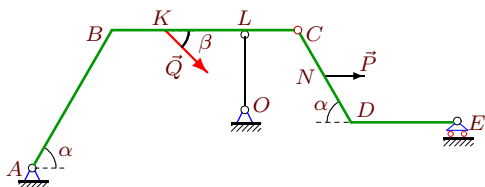
10



$P = 8 \text{ кН}, Q = 1 \text{ кН}, \alpha = 60^\circ, \beta = 60^\circ,$
 $AB = 6 \text{ м}, BC = 10 \text{ м}, CD = 6 \text{ м},$
 $DE = 3 \text{ м}, CN = 3 \text{ м}, BK = 2 \text{ м}.$

Задача 7.27.

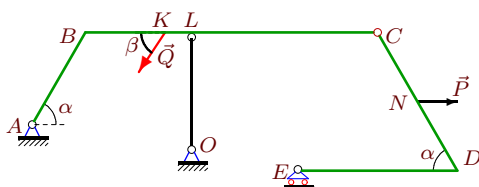
10



$P = 6 \text{ кН}, Q = 3 \text{ кН}, \alpha = 60^\circ, \beta = 45^\circ,$
 $AB = 6 \text{ м}, BC = 7 \text{ м}, CD = 4 \text{ м},$
 $DE = 4 \text{ м}, CN = 2 \text{ м}, BK = 2 \text{ м}. LC = 2 \text{ м}.$

Задача 7.29.

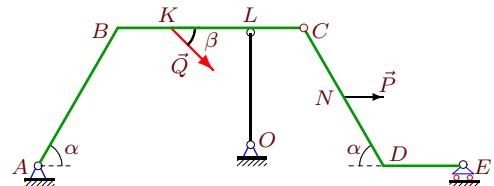
10



$P = 8 \text{ кН}, Q = 5 \text{ кН}, \alpha = 60^\circ, \beta = 75^\circ,$
 $AB = 4 \text{ м}, BC = 11 \text{ м}, CD = 6 \text{ м},$
 $DE = 6 \text{ м}, CN = 3 \text{ м}, BK = 3 \text{ м}. LC = 7 \text{ м}.$

Задача 7.22.

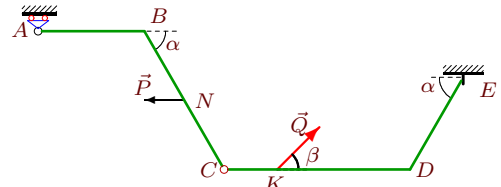
10



$P = 6 \text{ кН}, Q = 3 \text{ кН}, \alpha = 60^\circ, \beta = 45^\circ,$
 $AB = 6 \text{ м}, BC = 7 \text{ м}, CD = 6 \text{ м},$
 $DE = 3 \text{ м}, CN = 3 \text{ м}, BK = 2 \text{ м}. LC = 2 \text{ м}.$

Задача 7.24.

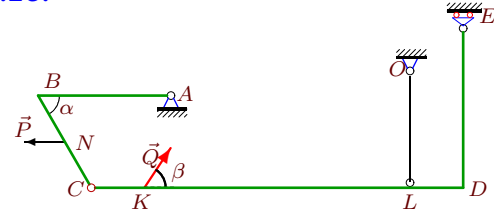
10



$P = 6 \text{ кН}, Q = 3 \text{ кН}, \alpha = 60^\circ, \beta = 30^\circ,$
 $AB = 4 \text{ м}, BC = 6 \text{ м}, CD = 7 \text{ м},$
 $DE = 4 \text{ м}, CN = 3 \text{ м}, CK = 2 \text{ м}.$

Задача 7.26.

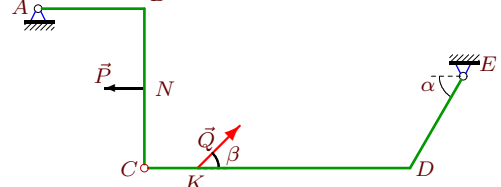
10



$P = 8 \text{ кН}, Q = 2 \text{ кН}, \alpha = 60^\circ, \beta = 75^\circ,$
 $AB = 5 \text{ м}, BC = 4 \text{ м}, CD = 14 \text{ м},$
 $DE = 6 \text{ м}, CN = 2 \text{ м}, CK = 2 \text{ м}. LD = 2 \text{ м}$

Задача 7.28.

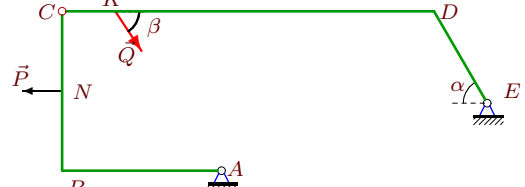
10



$P = 5 \text{ кН}, Q = 7 \text{ кН}, \alpha = 60^\circ, \beta = 45^\circ,$
 $AB = 4 \text{ м}, BC = 6 \text{ м}, CD = 10 \text{ м},$
 $DE = 4 \text{ м}, CN = 3 \text{ м}, CK = 2 \text{ м}.$

Задача 7.30.

10



$P = 6 \text{ кН}, Q = 8 \text{ кН}, \alpha = 60^\circ, \beta = 60^\circ,$
 $AB = 6 \text{ м}, BC = 6 \text{ м}, CD = 14 \text{ м},$
 $DE = 4 \text{ м}, CN = 3 \text{ м}, CK = 2 \text{ м}.$

Составная конструкция

| | X_A | Y_A | X_E | Y_E | S_{OL} | M | X_C | Y_C |
|----|---------|---------|--------|----------|----------|---------|--------|--------|
| 1 | 3.000 | 0.500 | — | -11.371 | 17.799 | | 4.000 | -0.500 |
| 2 | 0.343 | -3.188 | — | 4.577 | -7.046 | | 5.657 | 3.188 |
| 3 | -1.342 | 4.470 | -7.470 | 2.292 | — | | -0.470 | 2.292 |
| 4 | 5.293 | -3.971 | — | -25.025 | 29.703 | | 0.707 | 3.971 |
| 5 | -12.000 | 10.392 | — | -3.464 | — | 96.497 | 8.000 | -3.464 |
| 6 | 1.154 | 1.466 | -0.618 | 0.534 | — | | 2.846 | -1.466 |
| 7 | -0.893 | 0.785 | -1.986 | 1.336 | — | | 3.014 | 1.336 |
| 8 | -1.581 | -1.615 | -6.919 | -2.715 | — | | -0.919 | -2.715 |
| 9 | 6.000 | -36.373 | — | -207.846 | 245.951 | | 1.000 | 36.373 |
| 10 | -2.253 | -0.520 | -5.265 | -1.412 | — | | 1.735 | -1.412 |
| 11 | 0.025 | 0.838 | -1.427 | 0.662 | — | | 2.573 | 0.662 |
| 12 | -1.547 | -0.555 | -3.319 | 1.055 | — | | 0.681 | 1.055 |
| 13 | -0.473 | -1.441 | -1.699 | -1.388 | — | | 3.301 | -1.388 |
| 14 | -4.554 | 4.120 | -0.376 | 3.607 | — | | 6.624 | 3.607 |
| 15 | 4.248 | 2.331 | -4.198 | 2.618 | — | | 0.752 | -2.331 |
| 16 | — | 7.794 | 8.224 | -4.896 | — | 26.719 | 9.000 | -7.794 |
| 17 | -0.813 | 2.813 | -2.115 | 1.187 | — | | 4.813 | -2.813 |
| 18 | -0.786 | 2.786 | -1.276 | 0.714 | — | | 4.786 | -2.786 |
| 19 | -0.804 | -3.235 | — | 6.235 | — | -68.845 | 6.000 | 6.235 |
| 20 | 2.402 | 0.049 | — | 1.186 | -2.734 | | 2.598 | -0.049 |
| 21 | -3.879 | 1.878 | — | 5.196 | -4.953 | | 6.000 | 5.196 |
| 22 | -8.121 | -5.129 | — | -2.598 | 9.848 | | 6.000 | -2.598 |
| 23 | 4.586 | 1.831 | — | 18.058 | -21.303 | | 1.414 | -1.831 |
| 24 | — | 2.227 | 3.402 | -3.727 | — | 42.327 | 6.000 | -2.227 |
| 25 | -8.500 | 8.866 | — | -8.000 | — | 152.497 | 8.000 | -8.000 |
| 26 | 7.482 | 4.021 | — | 33.786 | -39.739 | | 0.518 | -4.021 |
| 27 | -8.121 | -4.912 | — | -1.732 | 8.766 | | 6.000 | -1.732 |
| 28 | 4.411 | -2.866 | -4.360 | -2.084 | — | | 0.589 | 2.866 |
| 29 | -6.706 | 5.016 | — | 6.928 | -7.115 | | 8.000 | 6.928 |
| 30 | -4.461 | 7.461 | 6.461 | -0.533 | — | | 10.461 | -7.461 |