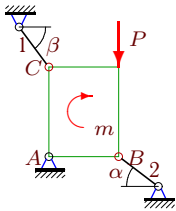


Статически неопределимая стержневая система (1)

Шарнирно закрепленная пластина удерживается в равновесии двумя стержнями одинаковой жесткости. Длины стержней l_1 и l_2 . На пластину действует момент m и вертикальная сила P . Найти усилия в стержнях.

Задача 23.1.

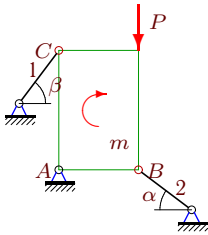
3



$P = 130$ Н, $m = 746$ Нм, $AB = 7$ м,
 $AC = 9$ м, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (3/5)l_1$.

Задача 23.3.

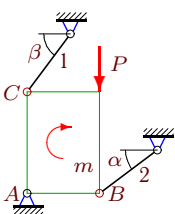
3



$P = 60$ Н, $m = 1395$ Нм, $AB = 6$ м,
 $AC = 9$ м, $\cos \alpha = \sin \beta = 0.8$, $l_1 = l_2$.

Задача 23.5.

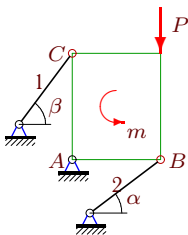
3



$P = 60$ Н, $m = 585$ Нм, $AB = 5$ м,
 $AC = 7$ м, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (2/5)l_1$.

Задача 23.7.

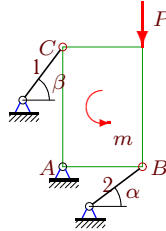
3



$P = 340$ Н, $m = 1010$ Нм, $AB = 5$ м,
 $AC = 6$ м, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (2/5)l_1$.

Задача 23.2.

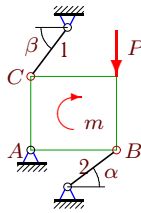
3



$P = 320$ Н, $m = 57$ Нм, $AB = 6$ м,
 $AC = 9$ м, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (6/5)l_1$.

Задача 23.4.

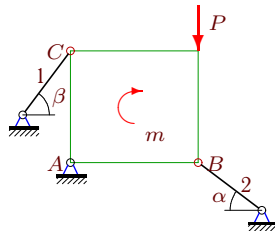
3



$P = 80$ Н, $m = 421$ Нм, $AB = 7$ м,
 $AC = 6$ м, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (3/5)l_1$.

Задача 23.6.

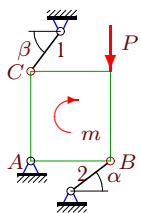
3



$P = 90$ Н, $m = 783$ Нм, $AB = 8$ м,
 $AC = 7$ м, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (4/5)l_1$.

Задача 23.8.

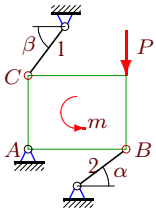
3



$P = 220$ Н, $m = 31$ Нм, $AB = 8$ м,
 $AC = 9$ м, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (3/5)l_1$.

Задача 23.9.

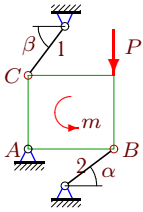
3



$P = 360 \text{ Н}$, $m = 1380 \text{ Нм}$, $AB = 8 \text{ м}$,
 $AC = 6 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_1 = l_2$.

Задача 23.11.

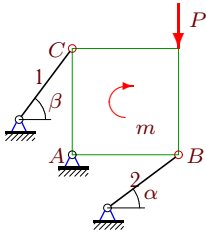
3



$P = 200 \text{ Н}$, $m = 566 \text{ Нм}$, $AB = 7 \text{ м}$,
 $AC = 6 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (2/5)l_1$.

Задача 23.13.

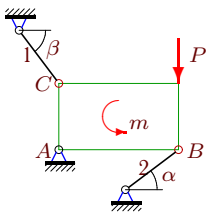
3



$P = 140 \text{ Н}$, $m = 240 \text{ Нм}$, $AB = 6 \text{ м}$,
 $AC = 6 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_1 = l_2$.

Задача 23.15.

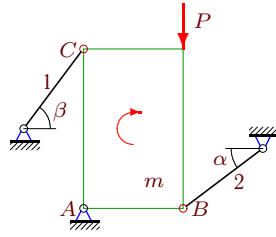
3



$P = 170 \text{ Н}$, $m = 426 \text{ Нм}$, $AB = 9 \text{ м}$,
 $AC = 5 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (3/5)l_1$.

Задача 23.10.

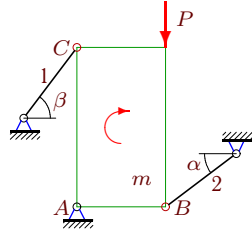
3



$P = 70 \text{ Н}$, $m = 910 \text{ Нм}$, $AB = 5 \text{ м}$,
 $AC = 8 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (4/5)l_1$.

Задача 23.12.

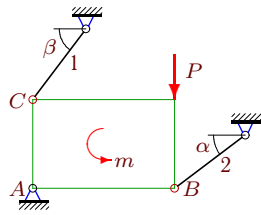
3



$P = 120 \text{ Н}$, $m = 915 \text{ Нм}$, $AB = 5 \text{ м}$,
 $AC = 9 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (4/5)l_1$.

Задача 23.14.

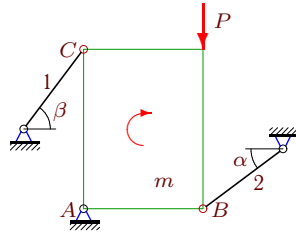
3



$P = 230 \text{ Н}$, $m = 889 \text{ Нм}$, $AB = 8 \text{ м}$,
 $AC = 5 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (3/5)l_1$.

Задача 23.16.

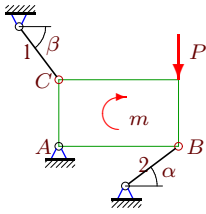
3



$P = 120 \text{ Н}$, $m = 564 \text{ Нм}$, $AB = 6 \text{ м}$,
 $AC = 8 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (3/5)l_1$.

Задача 23.17.

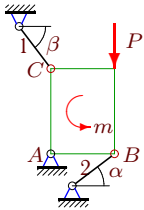
3



$P = 160 \text{ Н}$, $m = 150 \text{ Нм}$, $AB = 9 \text{ м}$,
 $AC = 5 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_1 = l_2$.

Задача 23.19.

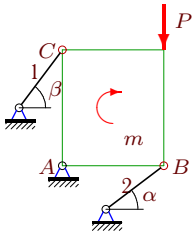
3



$P = 370 \text{ Н}$, $m = 828 \text{ Нм}$, $AB = 6 \text{ м}$,
 $AC = 8 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (4/5)l_1$.

Задача 23.21.

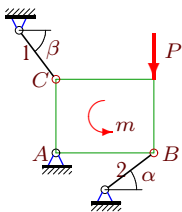
3



$P = 140 \text{ Н}$, $m = 274 \text{ Нм}$, $AB = 7 \text{ м}$,
 $AC = 8 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (2/5)l_1$.

Задача 23.23.

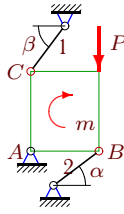
3



$P = 200 \text{ Н}$, $m = 676 \text{ Нм}$, $AB = 8 \text{ м}$,
 $AC = 6 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (2/5)l_1$.

Задача 23.18.

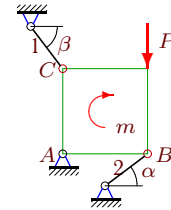
3



$P = 110 \text{ Н}$, $m = 723 \text{ Нм}$, $AB = 6 \text{ м}$,
 $AC = 7 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (6/5)l_1$.

Задача 23.20.

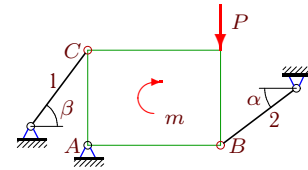
3



$P = 130 \text{ Н}$, $m = 1072 \text{ Нм}$, $AB = 8 \text{ м}$,
 $AC = 8 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (6/5)l_1$.

Задача 23.22.

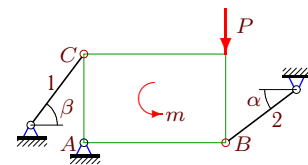
3



$P = 80 \text{ Н}$, $m = 403 \text{ Нм}$, $AB = 7 \text{ м}$,
 $AC = 5 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (4/5)l_1$.

Задача 23.24.

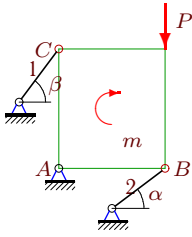
3



$P = 180 \text{ Н}$, $m = 681 \text{ Нм}$, $AB = 8 \text{ м}$,
 $AC = 5 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (2/5)l_1$.

Задача 23.25.

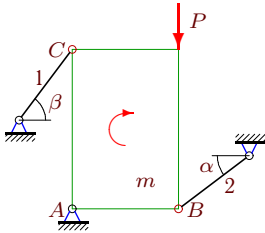
3



$P = 210 \text{ Н}$, $m = 303 \text{ Нм}$, $AB = 8 \text{ м}$,
 $AC = 9 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (4/5)l_1$.

Задача 23.27.

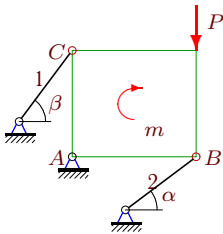
3



$P = 70 \text{ Н}$, $m = 1011 \text{ Нм}$, $AB = 6 \text{ м}$,
 $AC = 9 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (2/5)l_1$.

Задача 23.29.

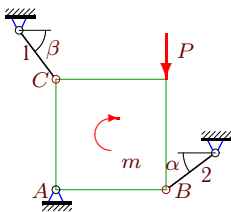
3



$P = 130 \text{ Н}$, $m = 365 \text{ Нм}$, $AB = 7 \text{ м}$,
 $AC = 6 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_1 = l_2$.

Задача 23.31.

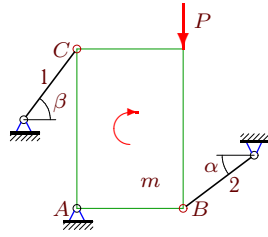
3



$P = 150 \text{ Н}$, $m = 594 \text{ Нм}$, $AB = 9 \text{ м}$,
 $AC = 9 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (3/5)l_1$.

Задача 23.26.

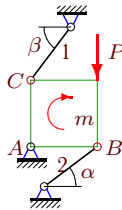
3



$P = 160 \text{ Н}$, $m = 471 \text{ Нм}$, $AB = 6 \text{ м}$,
 $AC = 9 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (2/5)l_1$.

Задача 23.28.

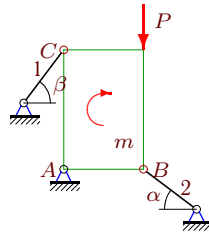
3



$P = 60 \text{ Н}$, $m = 450 \text{ Нм}$, $AB = 5 \text{ м}$,
 $AC = 5 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_1 = l_2$.

Задача 23.30.

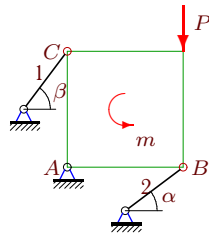
3



$P = 40 \text{ Н}$, $m = 1191 \text{ Нм}$, $AB = 6 \text{ м}$,
 $AC = 9 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (2/5)l_1$.

Задача 23.32.

3



$P = 340 \text{ Н}$, $m = 608 \text{ Нм}$, $AB = 8 \text{ м}$,
 $AC = 8 \text{ м}$, $\cos \alpha = \sin \beta = 0.8$, $l_2 = (6/5)l_1$.

Статически неопределимая стержневая система (1)

№	S_1	S_2
1	105	225
2	-180	225
3	150	225
4	-105	-150
5	50	-175
6	160	175
7	-50	150
8	-120	-225
9	-200	-150
10	100	200
11	-70	-150
12	100	225
13	-150	150
14	120	-125
15	-135	125
16	90	200
17	-225	125
18	-180	-175
19	-120	200
20	-240	200
21	-70	200
22	140	125
23	-80	150
24	80	125
25	-160	225
26	60	225
27	60	225
28	-125	-125
29	-175	150
30	60	225
31	135	225
32	-240	200