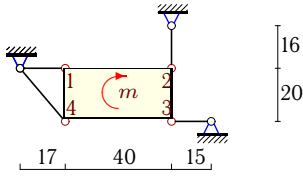


Статически неопределимая стержневая система (1)

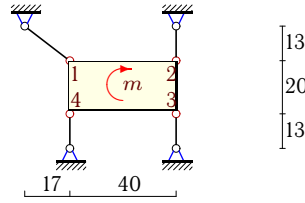
Однородная пластина весом P удерживается в вертикальной плоскости четырьмя стержнями одинаковой жесткости. На пластину действует момент m . Размеры даны в см. Найти усилия в стержнях.

Задача 23.1.



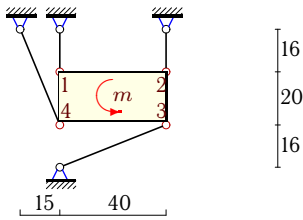
$P = 5 \text{ Н}$, $m = 0.14 \text{ Нм}$.

Задача 23.2.



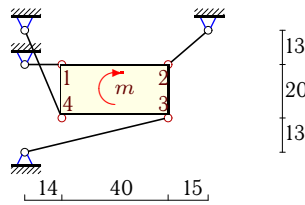
$P = 6 \text{ Н}$, $m = 0.07 \text{ Нм}$.

Задача 23.3.



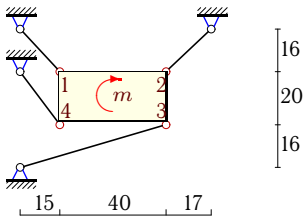
$P = 7 \text{ Н}$, $m = 0.1 \text{ Нм}$.

Задача 23.4.



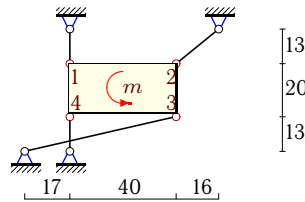
$P = 5 \text{ Н}$, $m = 0.18 \text{ Нм}$.

Задача 23.5.



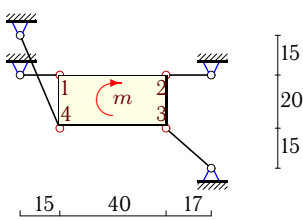
$P = 6 \text{ Н}$, $m = 0.09 \text{ Нм}$.

Задача 23.6.



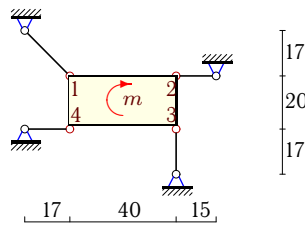
$P = 7 \text{ Н}$, $m = 0.1 \text{ Нм}$.

Задача 23.7.



$P = 5 \text{ Н}$, $m = 0.22 \text{ Нм}$.

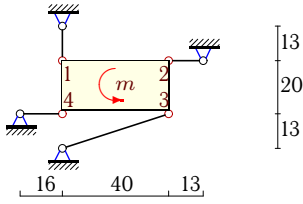
Задача 23.8.



$P = 6 \text{ Н}$, $m = 0.11 \text{ Нм}$.

Задача 23.9.

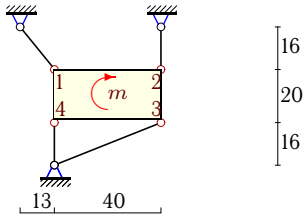
1



$P = 7 \text{ Н}, m = 0.1 \text{ Нм.}$

Задача 23.11.

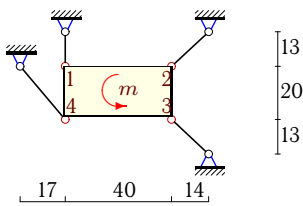
1



$P = 6 \text{ Н}, m = 0.07 \text{ Нм.}$

Задача 23.13.

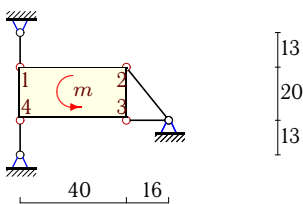
1



$P = 7 \text{ Н}, m = 0.1 \text{ Нм.}$

Задача 23.15.

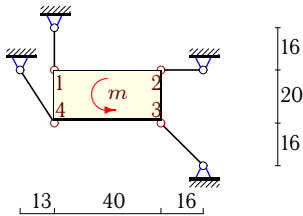
1



$P = 7 \text{ Н}, m = 0.1 \text{ Нм.}$

Задача 23.17.

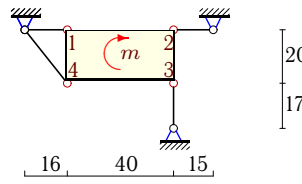
1



$P = 7 \text{ Н}, m = 0.1 \text{ Нм.}$

Задача 23.10.

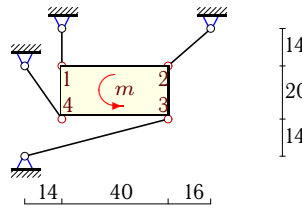
1



$P = 5 \text{ Н}, m = 0.22 \text{ Нм.}$

Задача 23.12.

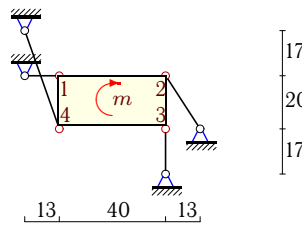
1



$P = 7 \text{ Н}, m = 0.1 \text{ Нм.}$

Задача 23.14.

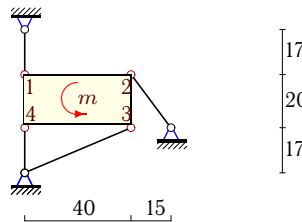
1



$P = 5 \text{ Н}, m = 0.26 \text{ Нм.}$

Задача 23.16.

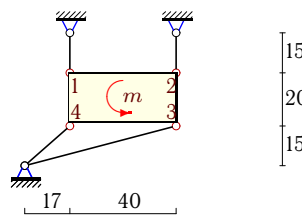
1



$P = 7 \text{ Н}, m = 0.1 \text{ Нм.}$

Задача 23.18.

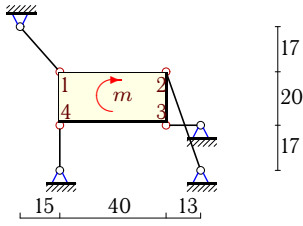
1



$P = 7 \text{ Н}, m = 0.1 \text{ Нм.}$

Задача 23.19.

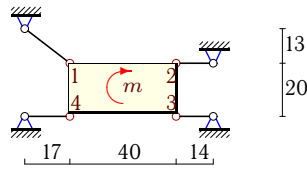
1



$P = 6 \text{ Н}, m = 0.15 \text{ Нм.}$

Задача 23.20.

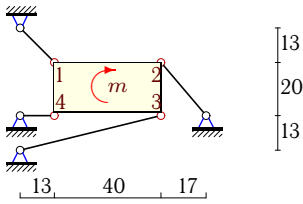
1



$P = 6 \text{ Н}, m = 0.11 \text{ Нм.}$

Задача 23.21.

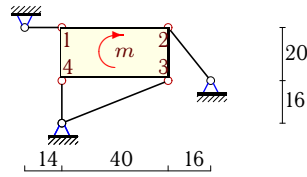
1



$P = 6 \text{ Н}, m = 0.13 \text{ Нм.}$

Задача 23.22.

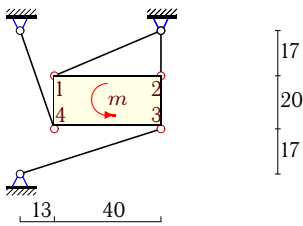
1



$P = 5 \text{ Н}, m = 0.26 \text{ Нм.}$

Задача 23.23.

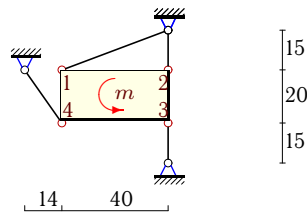
1



$P = 8 \text{ Н}, m = 0.07 \text{ Нм.}$

Задача 23.24.

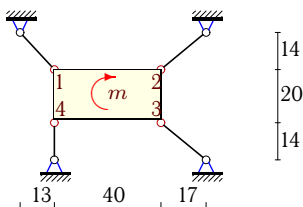
1



$P = 8 \text{ Н}, m = 0.07 \text{ Нм.}$

Задача 23.25.

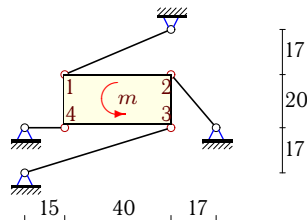
1



$P = 6 \text{ Н}, m = 0.09 \text{ Нм.}$

Задача 23.26.

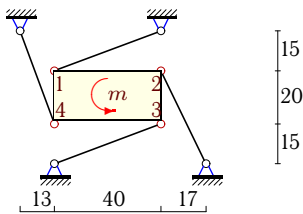
1



$P = 8 \text{ Н}, m = 0.13 \text{ Нм.}$

Задача 23.27.

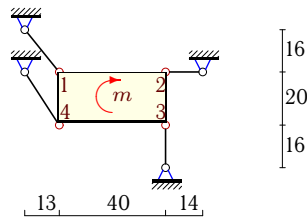
1



$P = 8 \text{ Н}, m = 0.15 \text{ Нм.}$

Задача 23.28.

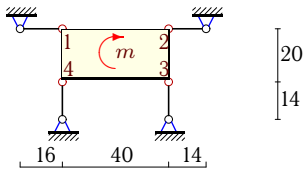
1



$P = 6 \text{ Н}, m = 0.11 \text{ Нм.}$

Задача 23.29.

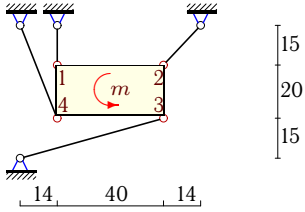
1



$P = 5 \text{ Н}, m = 0.22 \text{ Нм.}$

Задача 23.31.

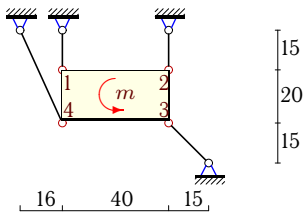
1



$P = 7 \text{ Н}, m = 0.1 \text{ Нм.}$

Задача 23.33.

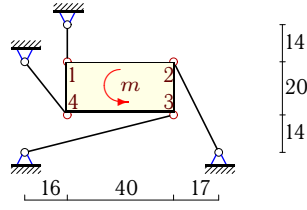
1



$P = 7 \text{ Н}, m = 0.1 \text{ Нм.}$

Задача 23.30.

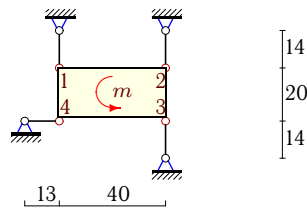
1



$P = 7 \text{ Н}, m = 0.1 \text{ Нм.}$

Задача 23.32.

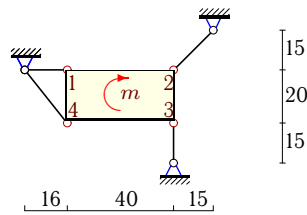
1



$P = 7 \text{ Н}, m = 0.1 \text{ Нм.}$

Задача 23.34.

1



$P = 5 \text{ Н}, m = 0.18 \text{ Нм.}$

Статически неопределимая стержневая система (1)

№	S_1	S_2	S_3	S_4
1	-1.034	3.367	0.355	2.144
2	0.000	1.587	-1.587	-2.825
3	2.781	3.089	-0.435	1.049
4	3.156	4.268	-0.808	2.189
5	5.534	3.129	-1.172	-0.636
6	-7.748	49.598	39.482	7.748
7	-3.521	3.107	-9.619	-1.484
8	3.524	2.958	-3.508	0.466
9	6.141	-4.783	-2.778	-2.140
10	-0.539	0.575	-3.607	1.784
11	1.013	2.600	-0.688	-2.358
12	-12.974	11.418	-0.111	15.170
13	2.297	3.425	-3.195	0.260
14	-1.170	-1.133	-2.477	1.668
15	2.339	-2.973	1.857	-2.339
16	2.235	-2.399	-1.564	-2.235
17	4.679	3.207	-6.864	-3.021
18	3.470	3.333	0.328	-0.423
19	1.562	-2.577	1.888	-2.397
20	9.877	1.296	3.592	-2.958
21	7.745	-0.195	-1.575	-4.073
22	-0.328	-2.565	-1.373	-2.487
23	1.217	4.391	0.018	3.327
24	1.936	2.366	-2.366	3.160
25	1.232	3.948	-2.863	-0.768
26	7.506	-6.376	-0.697	3.445
27	1.638	-3.463	-1.481	4.042
28	1.430	1.694	-3.671	1.454
29	0.000	0.000	-3.050	-1.950
30	4.036	-2.595	-1.439	0.377
31	-7.523	12.295	5.768	7.624
32	3.750	1.625	-1.625	0.000
33	3.288	3.461	0.299	0.508
34	-0.194	1.382	-2.558	1.875

1	$S_1(-518.119) + S_2(243.821) + S_3(-651.458) + S_4(-524.976) = 0$
2	$S_1(0.000) + S_2(413.066) + S_3(413.066) + S_4(0.000) = 0$
3	$S_1(548.515) + S_2(91.419) + S_3(662.790) + S_4(-1448.424) = 0$
4	$S_1(28.354) + S_2(-562.673) + S_3(-1623.646) + S_4(456.502) = 0$
5	$S_1(20.206) + S_2(-327.363) + S_3(-859.199) + S_4(148.394) = 0$
6	$S_1(-33.221) + S_2(0.000) + S_3(0.000) + S_4(-33.221) = 0$
7	$S_1(-236.300) + S_2(-267.807) + S_3(0.000) + S_4(0.000) = 0$
8	$S_1(-480.833) + S_2(212.132) + S_3(-240.416) + S_4(480.833) = 0$
9	$S_1(-80.362) + S_2(160.725) + S_3(-841.190) + S_4(502.146) = 0$
10	$S_1(-699.658) + S_2(-655.930) + S_3(0.000) + S_4(0.000) = 0$
11	$S_1(-765.641) + S_2(337.243) + S_3(1086.670) + S_4(-273.829) = 0$
12	$S_1(8.355) + S_2(122.389) + S_3(361.133) + S_4(-82.337) = 0$
13	$S_1(-372.707) + S_2(336.777) + S_3(155.436) + S_4(765.171) = 0$
14	$S_1(-314.341) + S_2(-1058.345) + S_3(632.403) + S_4(0.000) = 0$
15	$S_1(-568.472) + S_2(0.000) + S_3(0.000) + S_4(-568.472) = 0$
16	$S_1(847.993) + S_2(0.000) + S_3(0.000) + S_4(847.993) = 0$
17	$S_1(-313.035) + S_2(246.634) + S_3(-246.634) + S_4(337.343) = 0$
18	$S_1(-383.902) + S_2(114.497) + S_3(1767.837) + S_4(-877.004) = 0$
19	$S_1(-1005.895) + S_2(-518.941) + S_3(-324.591) + S_4(-353.339) = 0$
20	$S_1(0.000) + S_2(0.000) + S_3(-170.086) + S_4(-206.533) = 0$
21	$S_1(-56.729) + S_2(88.431) + S_3(-1087.851) + S_4(308.418) = 0$
22	$S_1(698.338) + S_2(856.102) + S_3(-1345.634) + S_4(-232.006) = 0$
23	$S_1(1561.833) + S_2(520.060) + S_3(2561.440) + S_4(-1271.625) = 0$
24	$S_1(0.000) + S_2(742.141) + S_3(742.141) + S_4(0.000) = 0$
25	$S_1(522.334) + S_2(149.699) + S_3(381.053) + S_4(186.991) = 0$
26	$S_1(-166.249) + S_2(263.954) + S_3(-1785.289) + S_4(489.321) = 0$
27	$S_1(-1968.183) + S_2(1275.139) + S_3(-1833.267) + S_4(1218.237) = 0$
28	$S_1(-916.103) + S_2(-155.443) + S_3(-135.351) + S_4(740.528) = 0$
29	$S_1(640.000) + S_2(560.000) + S_3(0.000) + S_4(0.000) = 0$
30	$S_1(-540.706) + S_2(230.376) + S_3(-1612.633) + S_4(1222.349) = 0$
31	$S_1(87.201) + S_2(81.581) + S_3(324.619) + S_4(-291.095) = 0$
32	$S_1(0.000) + S_2(560.000) + S_3(560.000) + S_4(0.000) = 0$
33	$S_1(-385.857) + S_2(176.392) + S_3(352.784) + S_4(1088.485) = 0$
34	$S_1(-494.733) + S_2(-927.625) + S_3(-463.812) + S_4(-0.000) = 0$