

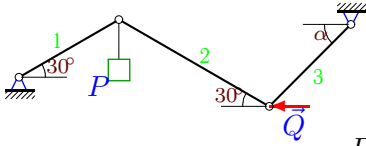
Равновесие цепи из 3 звеньев

Найти угол α в положении равновесия цепи и усилия в стержнях.

Кирсанов М.Н. **Решебник. Теоретическая механика**/Под ред. А. И. Кириллова.– М.:ФИЗМАТЛИТ, 2008.– 384 с. (с.21.)

Задача 2.1.

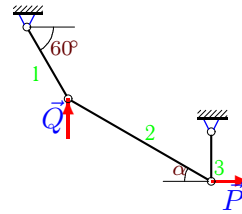
5



$P=30$ кН, $Q=40$ кН.

Задача 2.2.

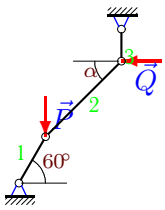
5



$P=3$ кН, $Q=1$ кН.

Задача 2.3.

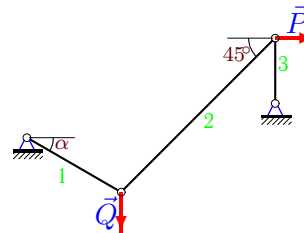
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$P=29$ кН, $Q=40$ кН.

Задача 2.4.

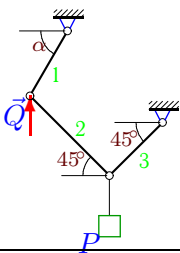
5



$P=22$ кН, $Q=30$ кН.

Задача 2.5.

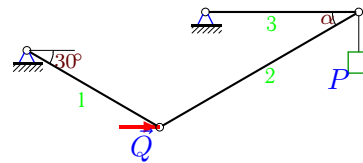
5



$P=33$ кН, $Q=50$ кН.

Задача 2.6.

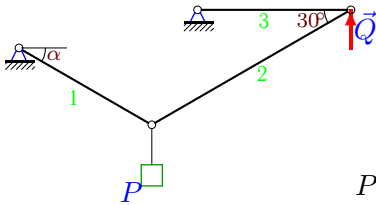
5



$P=20$ кН, $Q=70$ кН.

Задача 2.7.

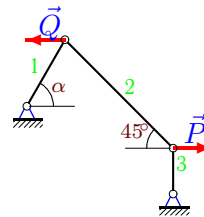
5



$P=25$ кН, $Q=10$ кН.

Задача 2.8.

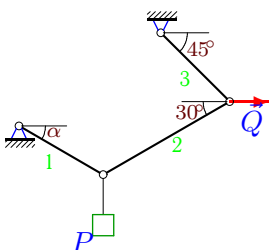
5



$P=10$ кН, $Q=20$ кН.

Задача 2.9.

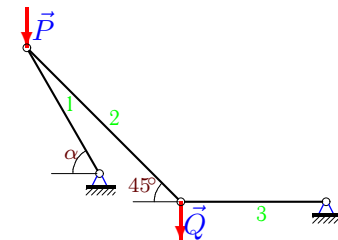
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$P=3$ кН, $Q=1$ кН.

Задача 2.10.

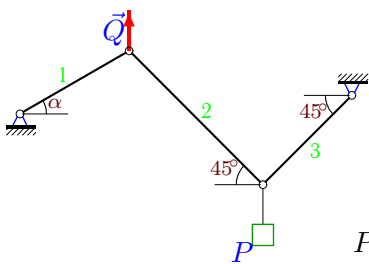
5



$P=16$ кН, $Q=20$ кН.

Задача 2.11.

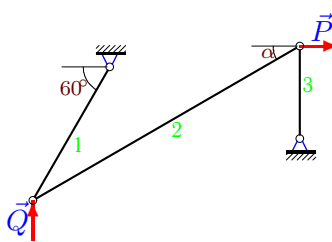
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$P=28$ кН, $Q=20$ кН.

Задача 2.12.

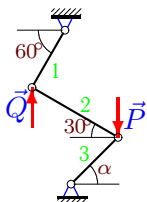
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$P=15$ кН, $Q=20$ кН.

Задача 2.13.

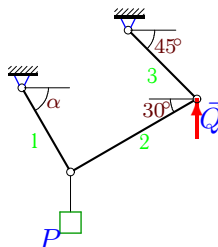
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$P=12$ кН, $Q=20$ кН.

Задача 2.14.

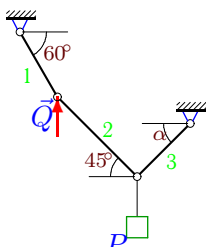
5



$P=22$ кН, $Q=20$ кН.

Задача 2.15.

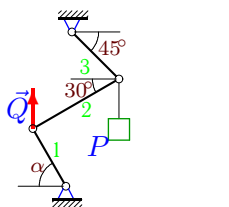
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$P=13$ кН, $Q=1$ кН.

Задача 2.16.

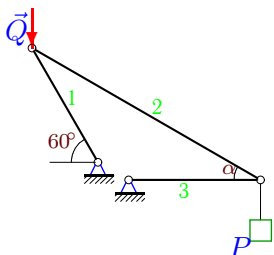
5



$P=11$ кН, $Q=20$ кН.

Задача 2.17.

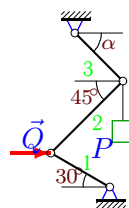
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$P=12$ кН, $Q=20$ кН.

Задача 2.18.

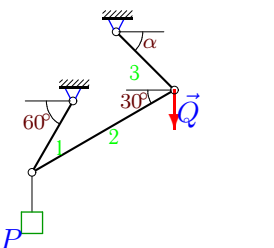
5



$P=1$ кН, $Q=1$ кН.

Задача 2.19.

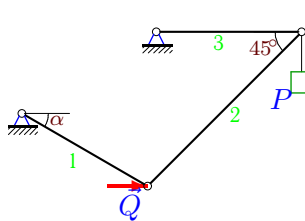
5



$P=32$ кН, $Q=40$ кН.

Задача 2.20.

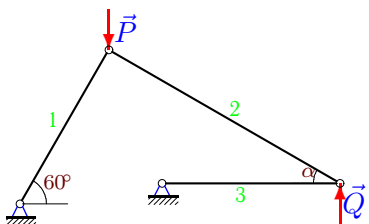
5



$P=33$ кН, $Q=90$ кН.

Задача 2.21.

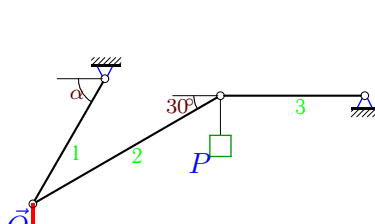
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$P=25$ кН, $Q=10$ кН.

Задача 2.22.

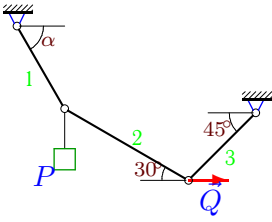
5



$P=29$ кН, $Q=60$ кН.

Задача 2.23.

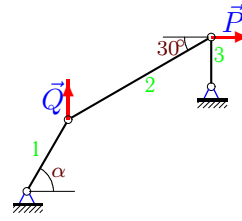
5



$P=31 \text{ кН}, Q=40 \text{ кН}.$

Задача 2.24.

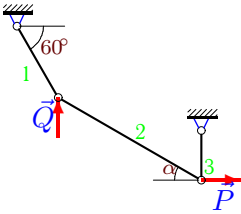
5



$P=19 \text{ кН}, Q=20 \text{ кН}.$

Задача 2.25.

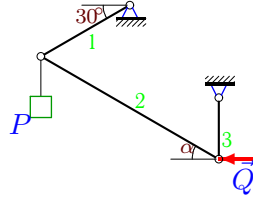
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$P=3 \text{ кН}, Q=1 \text{ кН}.$

Задача 2.26.

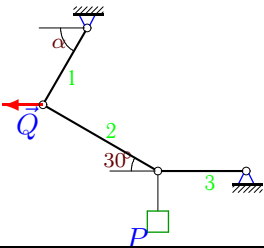
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$P=30 \text{ кН}, Q=30 \text{ кН}.$

Задача 2.27.

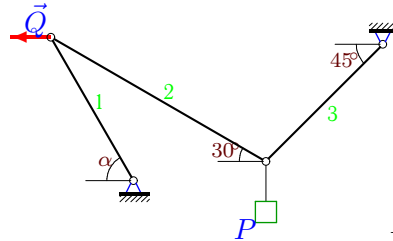
5



$P=32 \text{ кН}, Q=70 \text{ кН}.$

Задача 2.28.

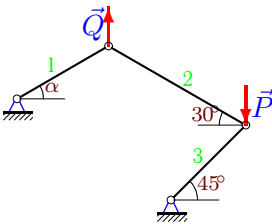
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$P=17 \text{ кН}, Q=10 \text{ кН}.$

Задача 2.29.

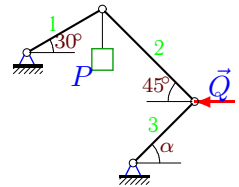
5



$P=8 \text{ кН}, Q=10 \text{ кН}.$

Задача 2.30.

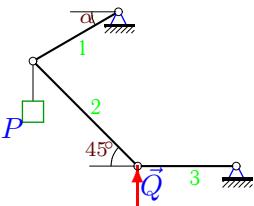
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$P=20 \text{ кН}, Q=30 \text{ кН}.$

Задача 2.31.

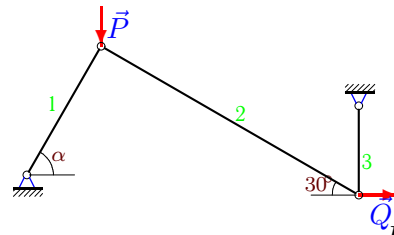
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$P=5 \text{ кН}, Q=1 \text{ кН}.$

Задача 2.32.

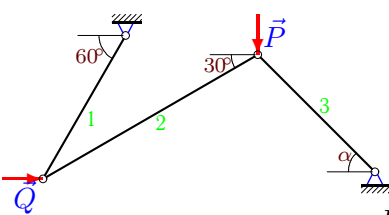
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$P=11 \text{ кН}, Q=1 \text{ кН}.$

Задача 2.33.

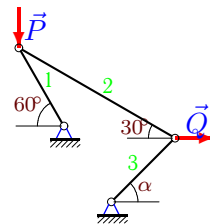
5



$P=23 \text{ кН}, Q=10 \text{ кН}.$

Задача 2.34.

5



$P=12 \text{ кН}, Q=20 \text{ кН}.$

Равновесие цепи из 3 звеньев

	$\operatorname{tg}\alpha$	α	S_1	S_2	S_3
1	1.070	0.819	-30.000	-30.000	20.531
2	2.065	1.120	6.000	6.884	-6.196
3	1.007	0.789	-80.000	-56.768	-40.282
4	0.364	0.349	23.409	31.113	-22.000
5	2.030	1.113	-37.343	23.335	23.335
6	0.566	0.515	40.000	-40.623	35.359
7	0.866	0.714	22.913	20.000	-17.321
8	1.000	0.785	-14.142	14.142	10.000
9	4.155	1.335	2.709	0.732	0.518
10	1.800	1.064	-41.183	28.284	20.000
11	0.429	0.405	15.232	19.799	19.799
12	0.399	0.379	-30.000	16.148	-5.981
13	0.808	0.680	-17.321	10.000	-11.136
14	1.158	0.858	19.397	14.641	-17.932
15	10.517	1.476	-2.732	-1.932	-14.431
16	2.291	1.159	17.430	-8.053	9.862
17	0.650	0.576	-36.950	22.030	-18.475
18	1.732	1.047	-0.732	-0.518	0.732
19	0.866	0.714	55.426	-32.000	36.661
20	0.579	0.525	65.863	-46.669	33.000
21	1.155	0.857	-17.321	-13.229	8.660
22	1.772	1.057	102.196	-58.000	-50.229
23	1.800	1.064	52.213	29.282	-20.706
24	1.630	1.021	36.333	21.939	-10.970
25	2.065	1.120	6.000	6.884	-6.196
26	0.423	0.400	34.641	-32.569	12.679
27	2.196	1.143	35.163	64.000	55.426
28	8.002	1.446	-6.271	12.445	15.242
29	1.394	0.949	8.702	5.856	-7.173
30	0.732	0.632	-14.641	-17.932	-21.466
31	4.000	1.326	4.123	-1.414	-1.000
32	11.577	1.485	11.620	1.155	-0.577
33	0.956	0.763	10.000	-17.321	-20.752
34	0.624	0.558	-20.785	12.000	11.327