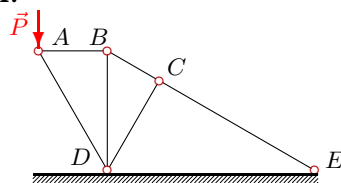


Простая стержневая система.

Кирсанов М.Н. **Решебник. Теоретическая механика** с. 14.

Вариант 1

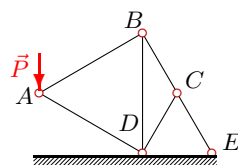
C1.



$P = 1 \text{ кН}$,
 $\angle ABD = 90^\circ$,
 $\angle ADB = 30^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 90^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 30^\circ$.

Вариант 2

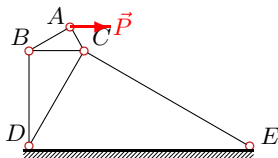
C1.



$P = 2 \text{ кН}$,
 $\angle ABD = 60^\circ$,
 $\angle ADB = 60^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 120^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 60^\circ$.

Вариант 3

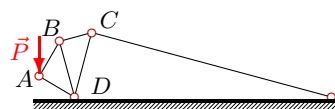
C1.



$P = 3 \text{ кН}$,
 $\angle ACB = 60^\circ$,
 $\angle ABC = 30^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 60^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 30^\circ$.

Вариант 4

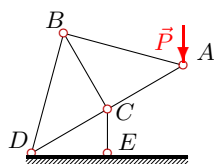
C1.



$P = 4 \text{ кН}$,
 $\angle ABD = 45^\circ$,
 $\angle ADB = 45^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 60^\circ$,
 $\angle CDE = 75^\circ$,
 $\angle CED = 15^\circ$.

Вариант 5

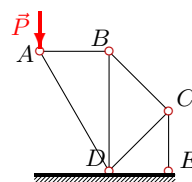
C1.



$P = 5 \text{ кН}$,
 $\angle ACB = 90^\circ$,
 $\angle ABC = 45^\circ$,
 $\angle BDC = 45^\circ$,
 $\angle BCD = 90^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 90^\circ$.

Вариант 6

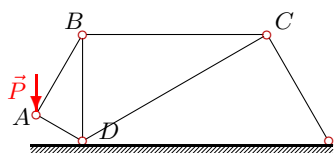
C1.



$P = 6 \text{ кН}$,
 $\angle ABD = 90^\circ$,
 $\angle ADB = 30^\circ$,
 $\angle BDC = 45^\circ$,
 $\angle BCD = 90^\circ$,
 $\angle CDE = 45^\circ$,
 $\angle CED = 90^\circ$.

Вариант 7

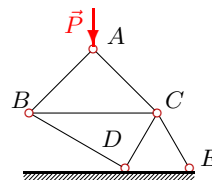
C1.



$P = 7 \text{ кН}$,
 $\angle ABD = 30^\circ$,
 $\angle ADB = 60^\circ$,
 $\angle BDC = 60^\circ$,
 $\angle BCD = 30^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 60^\circ$.

Вариант 8

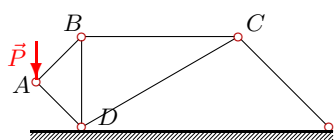
C1.



$P = 8 \text{ кН}$,
 $\angle ACB = 45^\circ$,
 $\angle ABC = 45^\circ$,
 $\angle BDC = 90^\circ$,
 $\angle BCD = 60^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 60^\circ$.

Вариант 9

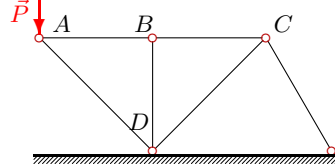
C1.



$P = 9 \text{ кН}$,
 $\angle ABD = 45^\circ$,
 $\angle ADB = 45^\circ$,
 $\angle BDC = 60^\circ$,
 $\angle BCD = 30^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 45^\circ$.

Вариант 10

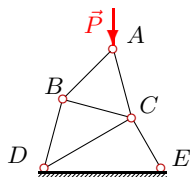
C1.



$P = 10 \text{ кН}$,
 $\angle ABD = 90^\circ$,
 $\angle ADB = 45^\circ$,
 $\angle BDC = 45^\circ$,
 $\angle BCD = 45^\circ$,
 $\angle CDE = 45^\circ$,
 $\angle CED = 60^\circ$.

Вариант 11

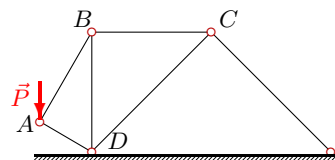
C1.



$P = 11 \text{ кН}$,
 $\angle ACB = 60^\circ$,
 $\angle ABC = 60^\circ$,
 $\angle BDC = 45^\circ$,
 $\angle BCD = 45^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 60^\circ$.

Вариант 12

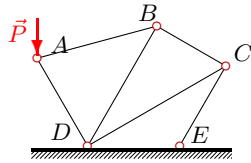
C1.



$P = 12 \text{ кН}$,
 $\angle ABD = 30^\circ$,
 $\angle ADB = 60^\circ$,
 $\angle BDC = 45^\circ$,
 $\angle BCD = 45^\circ$,
 $\angle CDE = 45^\circ$,
 $\angle CED = 45^\circ$.

Вариант 13

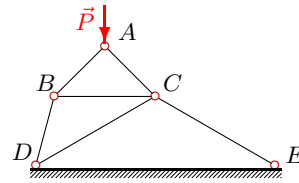
C1.



$P = 13 \text{ кН}$,
 $\angle ABD = 45^\circ$,
 $\angle ADB = 60^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 60^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 120^\circ$.

Вариант 14

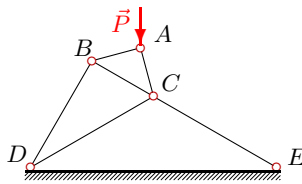
C1.



$P = 14 \text{ кН}$,
 $\angle ACB = 45^\circ$,
 $\angle ABC = 45^\circ$,
 $\angle BDC = 45^\circ$,
 $\angle BCD = 30^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 30^\circ$.

Вариант 15

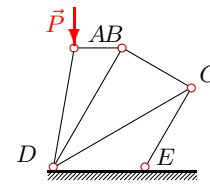
C1.



$P = 15 \text{ кН}$,
 $\angle ACB = 45^\circ$,
 $\angle ABC = 45^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 60^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 30^\circ$.

Вариант 16

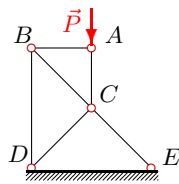
C1.



$P = 16 \text{ кН}$,
 $\angle ABD = 60^\circ$,
 $\angle ADB = 20^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 60^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 120^\circ$.

Вариант 17

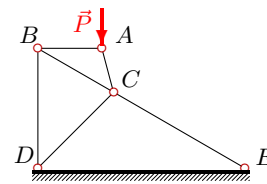
C1.



$P = 17 \text{ кН}$,
 $\angle ACB = 45^\circ$,
 $\angle ABC = 45^\circ$,
 $\angle BDC = 45^\circ$,
 $\angle BCD = 90^\circ$,
 $\angle CDE = 45^\circ$,
 $\angle CED = 45^\circ$.

Вариант 18

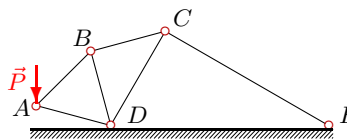
C1.



$P = 18 \text{ кН}$,
 $\angle ACB = 45^\circ$,
 $\angle ABC = 30^\circ$,
 $\angle BDC = 45^\circ$,
 $\angle BCD = 75^\circ$,
 $\angle CDE = 45^\circ$,
 $\angle CED = 30^\circ$.

Вариант 19

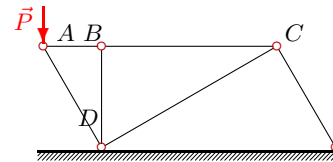
C1.



$P = 19 \text{ кН}$,
 $\angle ABD = 60^\circ$,
 $\angle ADB = 60^\circ$,
 $\angle BDC = 45^\circ$,
 $\angle BCD = 45^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 30^\circ$.

Вариант 20

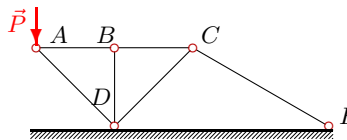
C1.



$P = 20 \text{ кН}$,
 $\angle ABD = 90^\circ$,
 $\angle ADB = 30^\circ$,
 $\angle BDC = 60^\circ$,
 $\angle BCD = 30^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 60^\circ$.

Вариант 21

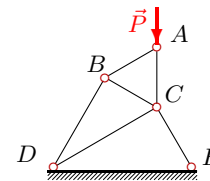
C1.



$P = 21 \text{ кН}$,
 $\angle ABD = 90^\circ$,
 $\angle ADB = 45^\circ$,
 $\angle BDC = 45^\circ$,
 $\angle BCD = 45^\circ$,
 $\angle CDE = 45^\circ$,
 $\angle CED = 30^\circ$.

Вариант 22

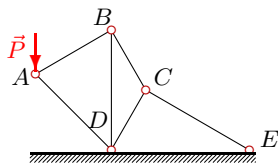
C1.



$P = 22 \text{ кН}$,
 $\angle ACB = 60^\circ$,
 $\angle ABC = 60^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 60^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 60^\circ$.

Вариант 23

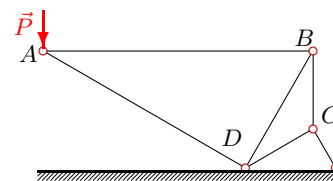
C1.



$P = 23 \text{ кН}$,
 $\angle ABD = 60^\circ$,
 $\angle ADB = 45^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 120^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 30^\circ$.

Вариант 24

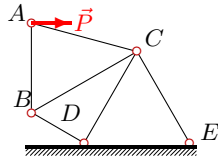
C1.



$P = 24 \text{ кН}$,
 $\angle ABD = 60^\circ$,
 $\angle ADB = 90^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 120^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 60^\circ$.

Вариант 25

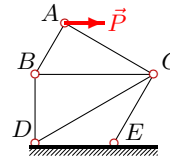
C1.



$P = 25 \text{ кН}$,
 $\angle ACB = 45^\circ$,
 $\angle ABC = 60^\circ$,
 $\angle BDC = 90^\circ$,
 $\angle BCD = 30^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 60^\circ$.

Вариант 26

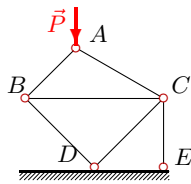
C1.



$P = 26 \text{ кН}$,
 $\angle ACB = 30^\circ$,
 $\angle ABC = 60^\circ$,
 $\angle BDC = 60^\circ$,
 $\angle BCD = 30^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 120^\circ$.

Вариант 27

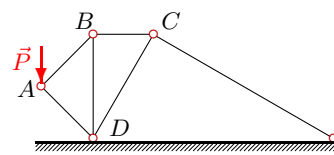
C1.



$P = 27 \text{ кН}$,
 $\angle ACB = 30^\circ$,
 $\angle ABC = 45^\circ$,
 $\angle BDC = 90^\circ$,
 $\angle BCD = 45^\circ$,
 $\angle CDE = 45^\circ$,
 $\angle CED = 90^\circ$.

Вариант 28

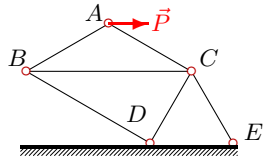
C1.



$P = 28 \text{ кН}$,
 $\angle ABD = 45^\circ$,
 $\angle ADB = 45^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 60^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 30^\circ$.

Вариант 29

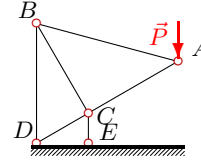
C1.



$P = 29 \text{ кН}$,
 $\angle ACB = 30^\circ$,
 $\angle ABC = 30^\circ$,
 $\angle BDC = 90^\circ$,
 $\angle BCD = 60^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 60^\circ$.

Вариант 30

C1.



$P = 30 \text{ кН}$,
 $\angle ACB = 90^\circ$,
 $\angle ABC = 45^\circ$,
 $\angle BDC = 60^\circ$,
 $\angle BCD = 90^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 90^\circ$.

Отвѣты

	S_{AB}	S_{AC}	S_{AD}	S_{BC}	S_{BD}	S_{CD}	S_{CE}
1	0.577	—	-1.155	0.667	-0.333	0.000	0.667
2	2.000	—	-2.000	3.464	-4.000	-0.000	3.464
3	2.598	-1.500	—	-2.250	1.299	0.375	-3.248
4	3.464	—	-2.000	2.449	-2.449	-1.225	2.121
5	6.124	-6.830	—	-8.660	6.124	-1.830	-10.000
6	3.464	—	-6.928	4.899	-3.464	-4.899	6.928
7	6.062	—	-3.500	3.031	-5.250	-2.625	1.516
8	-5.657	-5.657	—	10.928	-8.000	-9.238	4.619
9	6.364	—	-6.364	4.500	-4.500	-3.294	2.329
10	10.000	—	-14.142	10.000	0.000	-8.966	7.321
11	-3.287	-8.981	—	1.644	-2.847	-3.487	-7.513
12	10.392	—	-6.000	5.196	-9.000	-3.674	3.674
13	6.729	—	-13.000	4.758	-4.758	-9.517	8.242
14	-9.899	-9.899	—	5.124	-7.247	-5.917	-8.083
15	-3.882	-14.489	—	2.745	-2.745	-11.830	-13.415
16	-2.821	—	-16.247	-2.443	1.411	4.887	-4.232
17	0.000	-17.000	—	-0.000	0.000	-12.021	-12.021
18	-4.823	-18.635	—	5.569	-2.785	-13.642	-11.138
19	21.192	—	-15.513	18.353	-10.596	-12.977	12.977
20	11.547	—	-23.094	11.547	0.000	-10.000	5.774
21	21.000	—	-29.698	21.000	0.000	-10.870	15.373
22	0.000	-22.000	—	-0.000	0.000	-11.000	-19.053
23	16.837	—	-20.621	29.163	-33.674	14.581	25.256
24	41.569	—	-48.000	72.000	-83.138	36.000	62.354
25	6.699	-25.882	—	-6.699	6.699	28.868	-32.735
26	13.000	-22.517	—	-6.500	11.258	56.292	-45.500
27	-24.208	-19.765	—	34.235	-24.208	-24.208	7.235
28	19.799	—	-19.799	14.000	-14.000	-7.000	12.124
29	16.743	-16.743	—	-29.000	16.743	38.667	-48.333
30	36.742	-40.981	—	-70.981	51.962	0.000	-81.962