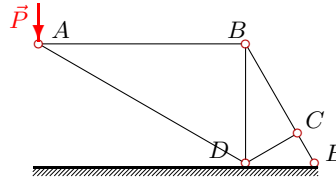


Простая стержневая система.

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

Вариант 1

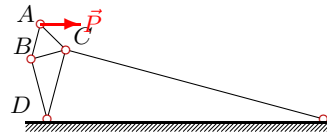
C1.



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

Вариант 2

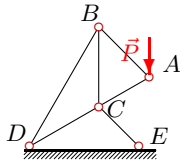
C1.



$P = 2 \text{ кН}$,
 $\angle ACB = 60^\circ$,
 $\angle ABC = 60^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 60^\circ$,
 $\angle CDE = 75^\circ$,
 $\angle CED = 15^\circ$.

Вариант 3

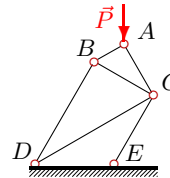
C1.



$P = 3 \text{ кН}$,
 $\angle ACB = 60^\circ$,
 $\angle ABC = 45^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 120^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 45^\circ$.

Вариант 4

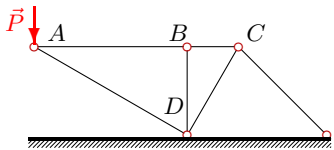
C1.



$P = 4 \text{ кН}$,
 $\angle ACB = 30^\circ$,
 $\angle ABC = 60^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 60^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 120^\circ$.

Вариант 5

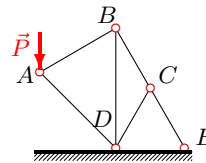
C1.



$P = 5 \text{ кН}$,
 $\angle ABD = 90^\circ$,
 $\angle ADB = 60^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 60^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 45^\circ$.

Вариант 6

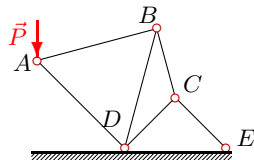
C1.



$P = 6 \text{ кН}$,
 $\angle ABD = 60^\circ$,
 $\angle ADB = 45^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 120^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 60^\circ$.

Вариант 7

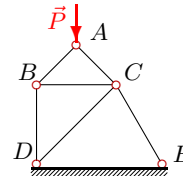
C1.



$P = 7 \text{ кН}$,
 $\angle ABD = 60^\circ$,
 $\angle ADB = 60^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 120^\circ$,
 $\angle CDE = 45^\circ$,
 $\angle CED = 45^\circ$.

Вариант 8

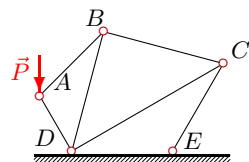
C1.



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

Вариант 9

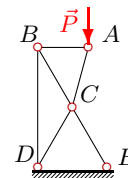
C1.



$P = 9 \text{ кН}$,
 $\angle ABD = 30^\circ$,
 $\angle ADB = 45^\circ$,
 $\angle BDC = 45^\circ$,
 $\angle BCD = 45^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 120^\circ$.

Вариант 10

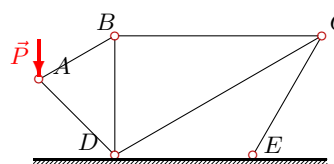
C1.



$P = 10 \text{ кН}$,
 $\angle ACB = 45^\circ$,
 $\angle ABC = 60^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 120^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 60^\circ$.

Вариант 11

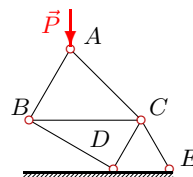
C1.



$P = 11 \text{ кН}$,
 $\angle ABD = 60^\circ$,
 $\angle ADB = 45^\circ$,
 $\angle BDC = 60^\circ$,
 $\angle BCD = 30^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 120^\circ$.

Вариант 12

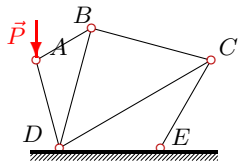
C1.



$P = 12 \text{ кН}$,
 $\angle ACB = 45^\circ$,
 $\angle ABC = 60^\circ$,
 $\angle BDC = 90^\circ$,
 $\angle BCD = 60^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 60^\circ$.

Вариант 13

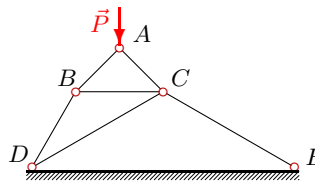
C1.



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

Вариант 14

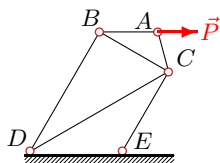
C1.



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

Вариант 15

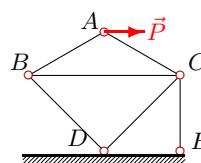
C1.



$P = 15 \text{ кН}$,
 $\angle ACB = 45^\circ$,
 $\angle ABC = 30^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 60^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 120^\circ$.

Вариант 16

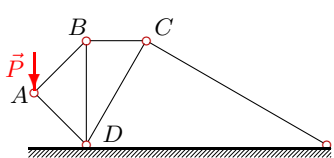
C1.



$P = 16 \text{ кН}$,
 $\angle ACB = 30^\circ$,
 $\angle ABC = 30^\circ$,
 $\angle BDC = 90^\circ$,
 $\angle BCD = 45^\circ$,
 $\angle CDE = 45^\circ$,
 $\angle CED = 90^\circ$.

Вариант 17

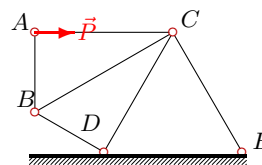
C1.



$P = 17 \text{ кН}$,
 $\angle ABD = 45^\circ$,
 $\angle ADB = 45^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 60^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 30^\circ$.

Вариант 18

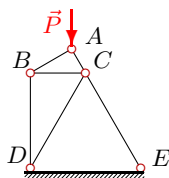
C1.



$P = 18 \text{ кН}$,
 $\angle ACB = 30^\circ$,
 $\angle ABC = 60^\circ$,
 $\angle BDC = 90^\circ$,
 $\angle BCD = 30^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 60^\circ$.

Вариант 19

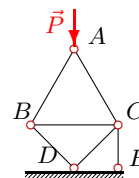
C1.



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

Вариант 20

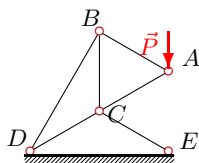
C1.



$P = 20 \text{ кН}$,
 $\angle ACB = 60^\circ$,
 $\angle ABC = 60^\circ$,
 $\angle BDC = 90^\circ$,
 $\angle BCD = 45^\circ$,
 $\angle CDE = 45^\circ$,
 $\angle CED = 90^\circ$.

Вариант 21

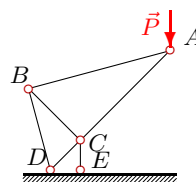
C1.



$P = 21 \text{ кН}$,
 $\angle ACB = 60^\circ$,
 $\angle ABC = 60^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 120^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 30^\circ$.

Вариант 22

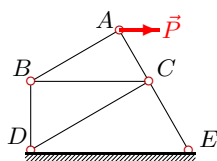
C1.



$P = 22 \text{ кН}$,
 $\angle ACB = 90^\circ$,
 $\angle ABC = 60^\circ$,
 $\angle BDC = 60^\circ$,
 $\angle BCD = 90^\circ$,
 $\angle CDE = 45^\circ$,
 $\angle CED = 90^\circ$.

Вариант 23

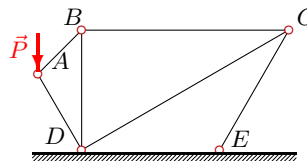
C1.



$P = 23 \text{ кН}$,
 $\angle ACB = 60^\circ$,
 $\angle ABC = 30^\circ$,
 $\angle BDC = 60^\circ$,
 $\angle BCD = 30^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 60^\circ$.

Вариант 24

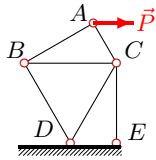
C1.



$P = 24 \text{ кН}$,
 $\angle ABD = 45^\circ$,
 $\angle ADB = 30^\circ$,
 $\angle BDC = 60^\circ$,
 $\angle BCD = 30^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 120^\circ$.

Вариант 25

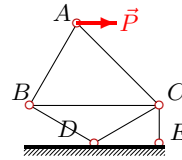
C1.



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

Вариант 26

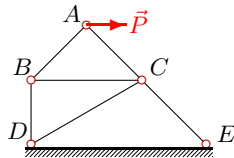
C1.



$P = 26 \text{ кН}$,
 $\angle ACB = 45^\circ$,
 $\angle ABC = 60^\circ$,
 $\angle BDC = 120^\circ$,
 $\angle BCD = 30^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 90^\circ$.

Вариант 27

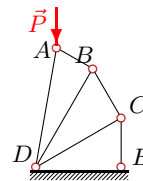
C1.



$P = 27 \text{ кН}$,
 $\angle ACB = 45^\circ$,
 $\angle ABC = 45^\circ$,
 $\angle BDC = 60^\circ$,
 $\angle BCD = 30^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 45^\circ$.

Вариант 28

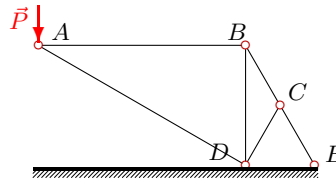
C1.



$P = 28 \text{ кН}$,
 $\angle ABD = 90^\circ$,
 $\angle ADB = 20^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 90^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 90^\circ$.

Вариант 29

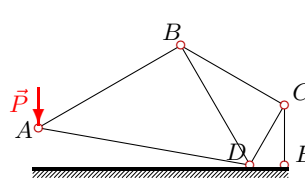
C1.



$P = 29 \text{ кН}$,
 $\angle ABD = 90^\circ$,
 $\angle ADB = 60^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 120^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 60^\circ$.

Вариант 30

C1.



$P = 30 \text{ кН}$,
 $\angle ABD = 90^\circ$,
 $\angle ADB = 50^\circ$,
 $\angle BDC = 60^\circ$,
 $\angle BCD = 90^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 90^\circ$.

Отвѣты

	S_{AB}	S_{AC}	S_{AD}	S_{BC}	S_{BD}	S_{CD}	S_{CE}
1	1.732	—	-2.000	3.464	-3.000	0.000	3.464
2	1.633	-2.231	—	-0.816	1.414	-0.707	-2.639
3	2.690	-2.196	—	-5.196	3.804	-6.000	-4.659
4	-2.000	-3.464	—	1.000	-1.732	4.000	-5.196
5	8.660	—	-10.000	8.660	0.000	-6.340	7.765
6	4.392	—	-5.379	7.608	-8.785	-0.000	7.608
7	5.715	—	-7.807	9.899	-11.431	4.950	8.573
8	-5.657	-5.657	—	4.000	-4.000	-2.071	-2.928
9	4.659	—	-6.588	2.329	-4.035	-4.500	3.294
10	2.679	-10.353	—	-5.359	4.641	-8.453	-8.453
11	8.053	—	-9.862	6.974	-4.026	-12.079	6.974
12	-8.785	-6.212	—	17.569	-15.215	-15.713	10.641
13	3.483	—	-11.655	2.463	-2.463	-4.758	3.483
14	-9.899	-9.899	—	2.959	-8.083	-4.667	-9.333
15	15.000	0.000	—	-12.990	7.500	25.981	-22.500
16	9.238	-9.238	—	-12.619	6.532	29.159	-25.238
17	12.021	—	-12.021	8.500	-8.500	-4.250	7.361
18	0.000	-18.000	—	0.000	0.000	18.000	-18.000
19	-9.500	-16.454	—	8.227	-4.750	-8.227	-8.227
20	-11.547	-11.547	—	15.774	-14.142	-14.142	0.000
21	21.000	-21.000	—	-42.000	36.373	-63.000	-42.000
22	31.113	-42.501	—	-62.225	53.889	19.725	-88.000
23	19.919	-11.500	—	-17.250	9.959	14.939	-20.125
24	12.423	—	-17.569	8.785	-8.785	-15.215	8.785
25	21.651	-12.500	—	-25.000	12.500	62.500	-64.952
26	19.033	-23.311	—	-38.067	32.967	62.989	-47.978
27	19.092	-19.092	—	-13.500	13.500	9.883	-26.080
28	-5.174	—	-25.805	-5.975	2.987	3.449	-6.899
29	50.229	—	-58.000	100.459	-87.000	0.000	100.459
30	45.963	—	-40.419	91.925	-79.610	-159.219	183.851