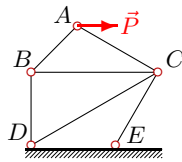


Простая стержневая система.

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

Вариант 1

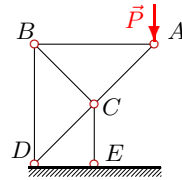
C1.



$P = 1 \text{ кН}$,
 $\angle ACB = 30^\circ$,
 $\angle ABC = 45^\circ$,
 $\angle BDC = 60^\circ$,
 $\angle BCD = 30^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 120^\circ$.

Вариант 2

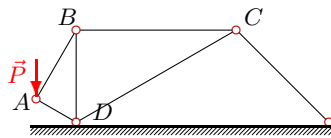
C1.



$P = 2 \text{ кН}$,
 $\angle ACB = 90^\circ$,
 $\angle ABC = 45^\circ$,
 $\angle BDC = 45^\circ$,
 $\angle BCD = 90^\circ$,
 $\angle CDE = 45^\circ$,
 $\angle CED = 90^\circ$.

Вариант 3

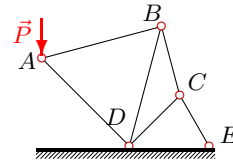
C1.



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

Вариант 4

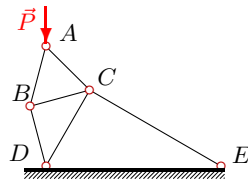
C1.



$P = 4 \text{ кН}$,
 $\angle ABD = 60^\circ$,
 $\angle ADB = 60^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 120^\circ$,
 $\angle CDE = 45^\circ$,
 $\angle CED = 60^\circ$.

Вариант 5

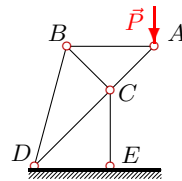
C1.



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

Вариант 6

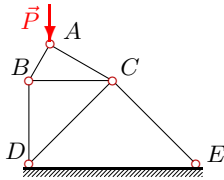
C1.



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

Вариант 7

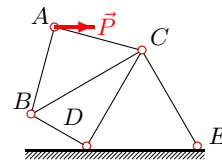
C1.



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

Вариант 8

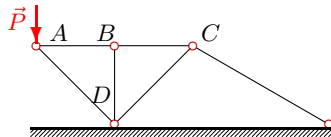
C1.



$P = 8 \text{ кН}$,
 $\angle ACB = 45^\circ$,
 $\angle ABC = 45^\circ$,
 $\angle BDC = 90^\circ$,
 $\angle BCD = 30^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 60^\circ$.

Вариант 9

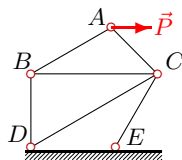
C1.



$P = 9 \text{ кН}$,
 $\angle ABD = 90^\circ$,
 $\angle ADB = 45^\circ$,
 $\angle BDC = 45^\circ$,
 $\angle BCD = 45^\circ$,
 $\angle CDE = 45^\circ$,
 $\angle CED = 30^\circ$.

Вариант 10

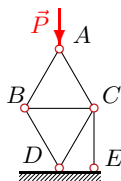
C1.



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

Вариант 11

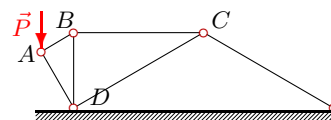
C1.



$P = 11 \text{ кН}$,
 $\angle ACB = 60^\circ$,
 $\angle ABC = 60^\circ$,
 $\angle BDC = 60^\circ$,
 $\angle BCD = 60^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 90^\circ$.

Вариант 12

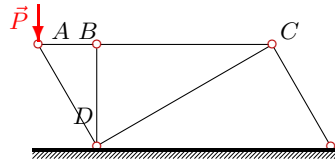
C1.



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

Вариант 13

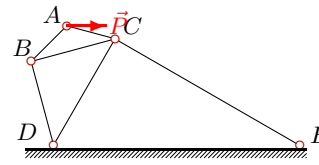
C1.



$P = 13 \text{ кН}$,
 $\angle ABD = 90^\circ$,
 $\angle ADB = 30^\circ$,
 $\angle BDC = 60^\circ$,
 $\angle BCD = 30^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 60^\circ$.

Вариант 14

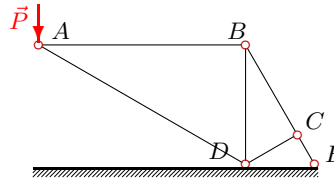
C1.



$P = 14 \text{ кН}$,
 $\angle ACB = 30^\circ$,
 $\angle ABC = 30^\circ$,
 $\angle BDC = 45^\circ$,
 $\angle BCD = 45^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 30^\circ$.

Вариант 15

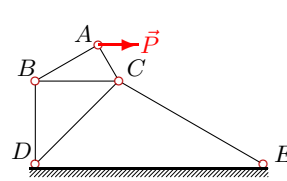
C1.



$P = 15 \text{ кН}$,
 $\angle ABD = 90^\circ$,
 $\angle ADB = 60^\circ$,
 $\angle BDC = 60^\circ$,
 $\angle BCD = 90^\circ$,
 $\angle CDE = 30^\circ$,
 $\angle CED = 60^\circ$.

Вариант 16

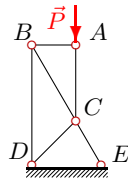
C1.



$P = 16 \text{ кН}$,
 $\angle ACB = 60^\circ$,
 $\angle ABC = 30^\circ$,
 $\angle BDC = 45^\circ$,
 $\angle BCD = 45^\circ$,
 $\angle CDE = 45^\circ$,
 $\angle CED = 30^\circ$.

Вариант 17

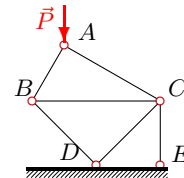
C1.



$P = 17 \text{ кН}$,
 $\angle ACB = 30^\circ$,
 $\angle ABC = 60^\circ$,
 $\angle BDC = 45^\circ$,
 $\angle BCD = 105^\circ$,
 $\angle CDE = 45^\circ$,
 $\angle CED = 60^\circ$.

Вариант 18

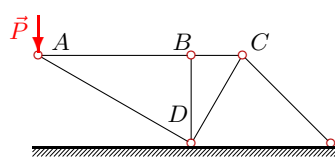
C1.



$P = 18 \text{ кН}$,
 $\angle ACB = 30^\circ$,
 $\angle ABC = 60^\circ$,
 $\angle BDC = 90^\circ$,
 $\angle BCD = 45^\circ$,
 $\angle CDE = 45^\circ$,
 $\angle CED = 90^\circ$.

Вариант 19

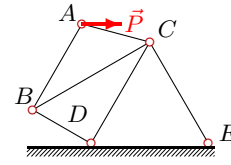
C1.



$P = 19 \text{ кН}$,
 $\angle ABD = 90^\circ$,
 $\angle ADB = 60^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 60^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 45^\circ$.

Вариант 20

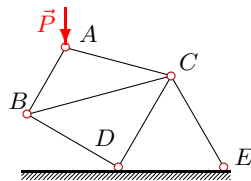
C1.



$P = 20 \text{ кН}$,
 $\angle ACB = 45^\circ$,
 $\angle ABC = 30^\circ$,
 $\angle BDC = 90^\circ$,
 $\angle BCD = 30^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 60^\circ$.

Вариант 21

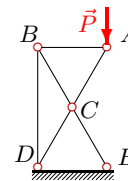
C1.



$P = 21 \text{ кН}$,
 $\angle ACB = 30^\circ$,
 $\angle ABC = 45^\circ$,
 $\angle BDC = 90^\circ$,
 $\angle BCD = 45^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 60^\circ$.

Вариант 22

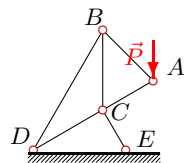
C1.



$P = 22 \text{ кН}$,
 $\angle ACB = 60^\circ$,
 $\angle ABC = 60^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 120^\circ$,
 $\angle CDE = 60^\circ$,
 $\angle CED = 60^\circ$.

Вариант 23

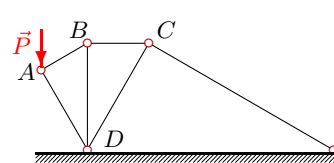
C1.



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

Вариант 24

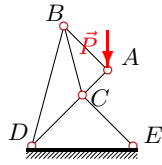
C1.



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

Вариант 25

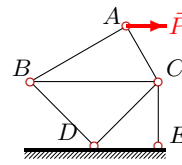
C1.



$P = 25 \text{ кН}$,
 $\angle ACB = 60^\circ$,
 $\angle ABC = 30^\circ$,
 $\angle BDC = 30^\circ$,
 $\angle BCD = 120^\circ$,
 $\angle CDE = 45^\circ$,
 $\angle CED = 45^\circ$.

Вариант 26

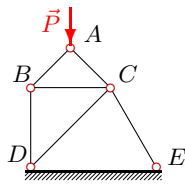
C1.



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

Вариант 27

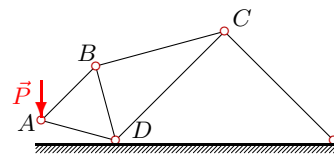
C1.



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

Вариант 28

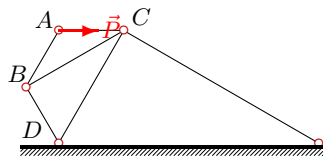
C1.



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

Вариант 29

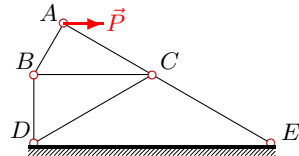
C1.



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

Вариант 30

C1.



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

Отвѣты

	S_{AB}	S_{AC}	S_{AD}	S_{BC}	S_{BD}	S_{CD}	S_{CE}
1	0.518	-0.732	—	-0.366	0.366	2.098	-1.634
2	2.000	-2.828	—	-2.828	2.000	0.000	-4.000
3	2.598	—	-1.500	1.299	-2.250	-0.951	0.672
4	3.266	—	-4.461	5.657	-6.532	1.516	5.072
5	-4.082	-1.494	—	2.041	-3.536	-1.830	0.000
6	6.000	-8.485	—	-6.692	4.899	-1.793	-9.464
7	-6.062	-3.500	—	3.031	-5.250	-1.237	-1.237
8	2.071	-7.727	—	-2.309	1.691	8.976	-9.952
9	9.000	—	-12.728	9.000	0.000	-4.659	6.588
10	7.321	-5.176	—	-6.340	3.660	20.981	-16.340
11	-6.351	-6.351	—	6.351	-6.351	-6.351	0.000
12	6.000	—	-10.392	5.196	-3.000	-3.000	3.000
13	7.506	—	-15.011	7.506	0.000	-6.500	3.753
14	4.184	-11.431	—	-3.623	2.092	5.521	-13.604
15	25.981	—	-30.000	51.962	-45.000	0.000	51.962
16	13.856	-8.000	—	-12.000	6.928	2.071	-16.785
17	0.000	-17.000	—	0.000	0.000	-8.800	-12.445
18	-15.588	-9.000	—	21.294	-19.092	-19.092	9.000
19	32.909	—	-38.000	32.909	0.000	-24.091	29.505
20	5.359	-17.932	—	-6.188	3.094	21.786	-23.573
21	-21.000	-10.870	—	29.698	-21.000	-24.249	12.124
22	12.702	-25.403	—	-25.403	22.000	-25.403	-25.403
23	20.621	-16.837	—	-39.837	29.163	-36.756	-34.500
24	12.000	—	-20.785	10.392	-6.000	-5.196	9.000
25	17.678	-17.678	—	-30.619	17.678	-32.987	-26.517
26	22.517	-13.000	—	-30.758	15.922	52.691	-48.517
27	-19.092	-19.092	—	13.500	-13.500	-6.988	-9.883
28	31.230	—	-22.862	27.046	-15.615	-23.422	13.523
29	0.000	-29.000	—	0.000	0.000	14.500	-25.115
30	15.000	-25.981	—	-7.500	12.990	4.330	-30.311