

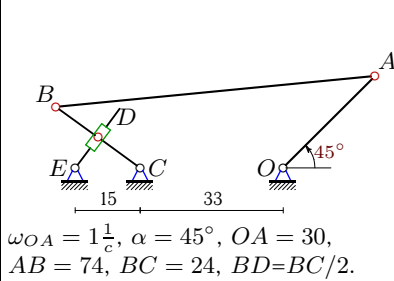
Механизм с муфтой

Плоский механизм с одной степенью свободы состоит из шарнирно соединенных стержней и муфты, скользящей по направляющему стержню и шарнирно закрепленной на другом стержне или вращающейся на неподвижном шарнире. Кривошип OA вращается против часовой стрелки с постоянной угловой скоростью ω_{OA} . Горизонтальные и вертикальные размеры на рисунках даны для неподвижных шарниров и для линий движения ползунков (в см). Найти скорость муфты D (или E) относительно направляющего стержня (в см/с).

Кирсанов М.Н. Решебник. Теоретическая механика с. 216.

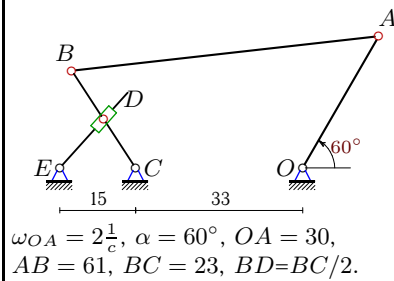
Вариант 1

K13.



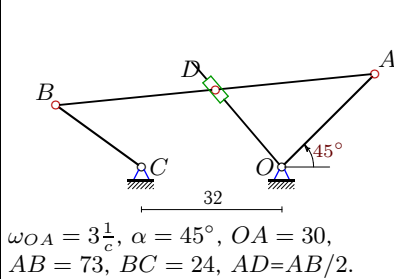
Вариант 2

K13.



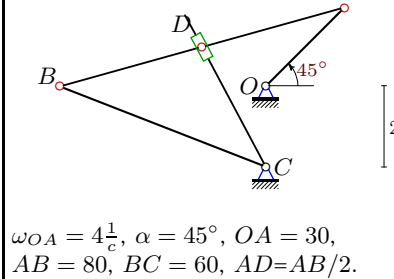
Вариант 3

K13.



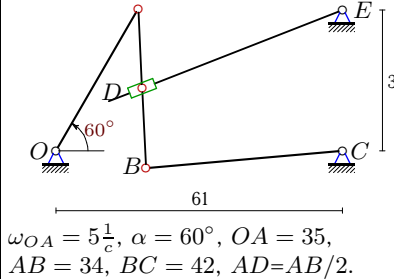
Вариант 4

K13.



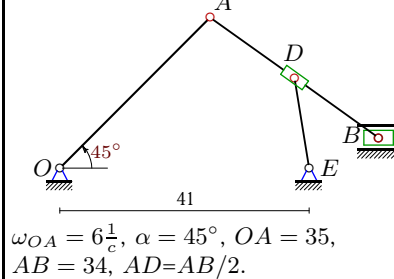
Вариант 5

K13.



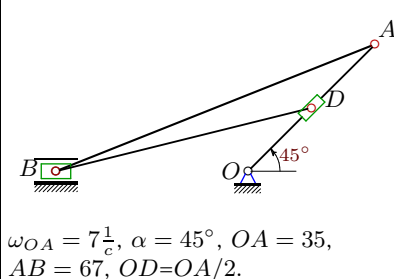
Вариант 6

K13.



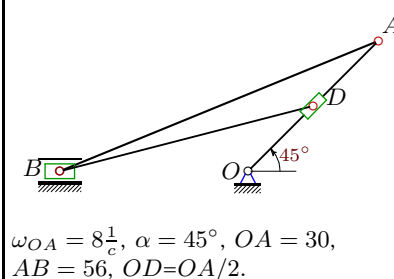
Вариант 7

K13.



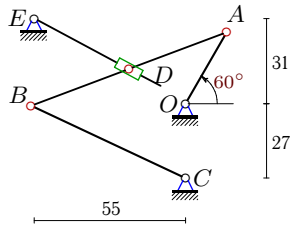
Вариант 8

K13.



Вариант 9

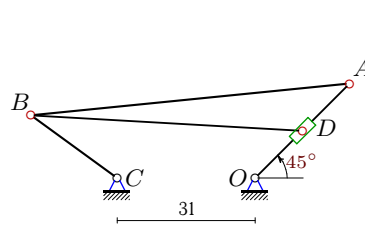
K13.



$\omega_{OA} = 9\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 30$,
 $AB = 76$, $BC = 62$, $AD = AB/2$.

Вариант 10

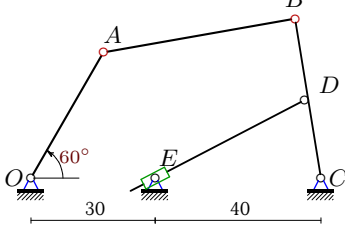
K13.



$\omega_{OA} = 10\frac{1}{c}$, $\alpha = 45^\circ$, $OA = 30$,
 $AB = 72$, $BC = 24$, $OD = OA/2$.

Вариант 11

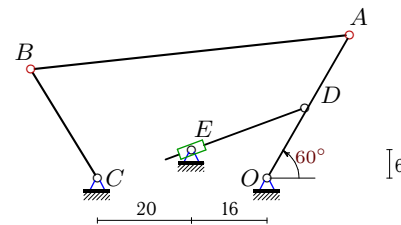
K13.



$\omega_{OA} = 11\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 35$,
 $AB = 47$, $BC = 39$, $BD = BC/2$.

Вариант 12

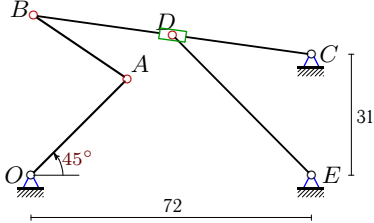
K13.



$\omega_{OA} = 12\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 35$,
 $AB = 68$, $BC = 27$, $OD = OA/2$.

Вариант 13

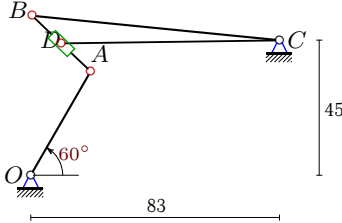
K13.



$\omega_{OA} = 13\frac{1}{c}$, $\alpha = 45^\circ$, $OA = 35$,
 $AB = 29$, $BC = 72$, $BD = BC/2$.

Вариант 14

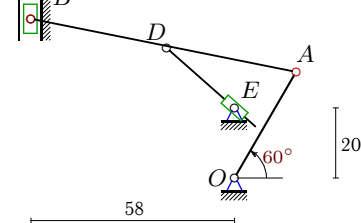
K13.



$\omega_{OA} = 14\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 40$,
 $AB = 27$, $BC = 83$, $AD = AB/2$.

Вариант 15

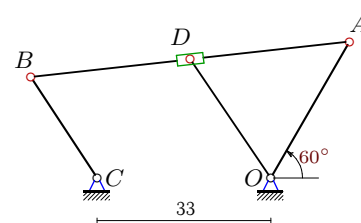
K13.



$\omega_{OA} = 15\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 35$,
 $AB = 77$, $AD = AB/2$.

Вариант 16

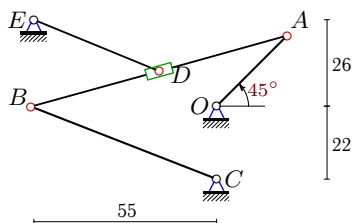
K13.



$\omega_{OA} = 16\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 30$,
 $AB = 61$, $BC = 23$, $AD = AB/2$.

Вариант 17

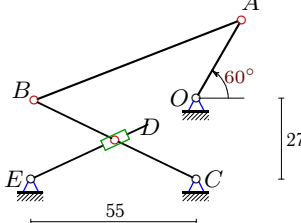
K13.



$\omega_{OA} = 17\frac{1}{c}$, $\alpha = 45^\circ$, $OA = 30$,
 $AB = 80$, $BC = 60$, $AD = AB/2$.

Вариант 18

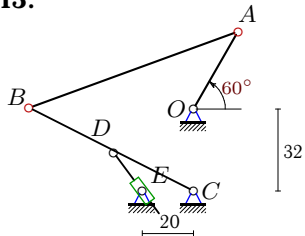
K13.



$\omega_{OA} = 18\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 30$,
 $AB = 74$, $BC = 60$, $BD = BC/2$.

Вариант 19

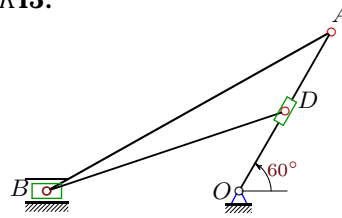
K13.



$\omega_{OA} = 19\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 35$,
 $AB = 87$, $BC = 72$, $BD = BC/2$.

Вариант 20

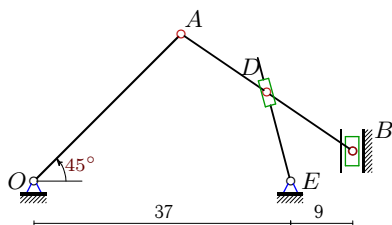
K13.



$\omega_{OA} = 20\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 35$,
 $AB = 62$, $OD = OA/2$.

Вариант 21

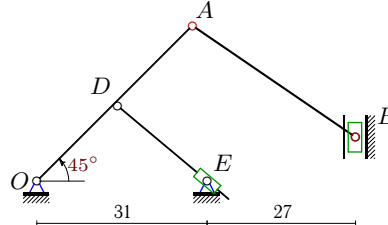
K13.



$\omega_{OA} = 21\frac{1}{c}$, $\alpha = 45^\circ$, $OA = 30$,
 $AB = 30$, $AD = AB/2$.

Вариант 22

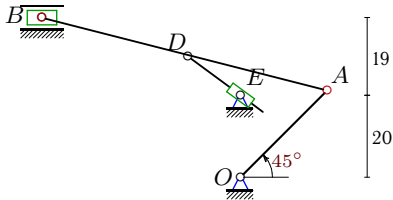
K13.



$\omega_{OA} = 22\frac{1}{c}$, $\alpha = 45^\circ$, $OA = 40$,
 $AB = 36$, $OD = OA/2$.

Вариант 23

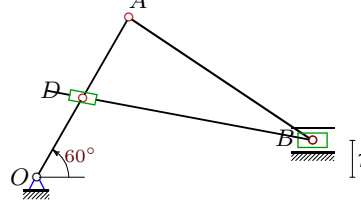
K13.



$\omega_{OA} = 23\frac{1}{c}$, $\alpha = 45^\circ$, $OA = 30$,
 $AB = 72$, $AD = AB/2$.

Вариант 24

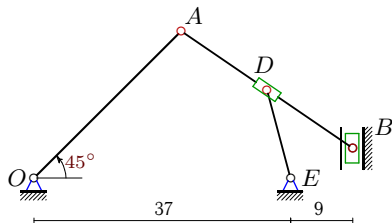
K13.



$\omega_{OA} = 24\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 35$,
 $AB = 42$, $OD = OA/2$.

Вариант 25

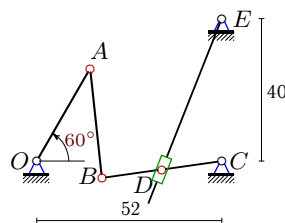
K13.



$\omega_{OA} = 25\frac{1}{c}$, $\alpha = 45^\circ$, $OA = 30$,
 $AB = 30$, $AD = AB/2$.

Вариант 26

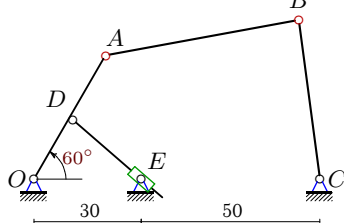
K13.



$\omega_{OA} = 26\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 30$,
 $AB = 31$, $BC = 34$, $BD = BC/2$.

Вариант 27

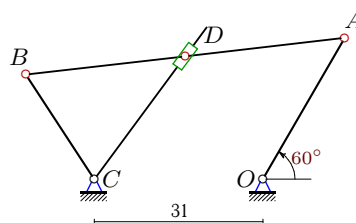
K13.



$\omega_{OA} = 27\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 40$,
 $AB = 55$, $BC = 45$, $OD = OA/2$.

Вариант 28

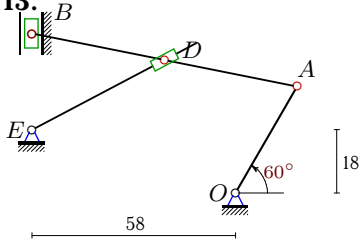
K13.



$\omega_{OA} = 28\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 30$,
 $AB = 59$, $BC = 23$, $AD = AB/2$.

Вариант 29

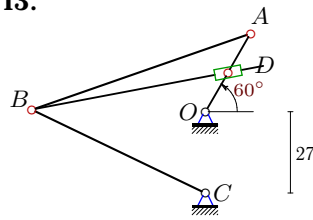
K13.



$\omega_{OA} = 29\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 35$,
 $AB = 77$, $AD = AB/2$.

Вариант 30

K13.



$\omega_{OA} = 30\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 30$,
 $AB = 77$, $BC = 64$, $OD = OA/2$.

Ответы

	v_A	v_B	v_D	v_r	x_B	y_B
1	30	28.8119	14.4060	14.4039	-52.441	14.072
2	60	54.1984	27.0992	26.2239	-45.625	19.225
3	90	86.1539	57.1706	-34.8044	-51.437	14.078
4	120	98.5749	60.4733	-25.3220	-55.881	-0.152
5	175	94.8589	121.0976	-41.3091	19.159	-3.649
6	210	254.4502	214.7165	-149.9933	52.425	5.000
7	245	104.3784	122.5000	44.4688	-37.513	0.000
8	240	100.2433	120.0000	41.8696	-30.613	0.000
9	270	239.8293	172.7049	128.6314	-56.155	-0.721
10	300	286.2189	150.0000	63.9622	-50.433	14.084
11	385	294.8073	147.4037	139.8832	63.781	38.501
12	420	375.2465	210.0000	134.1404	-50.108	23.021
13	455	1018.5106	509.2553	-388.1804	0.689	40.940
14	560	888.6032	615.0276	265.4494	0.408	53.219
15	525	2532.1366	1415.6900	-1095.0945	-58.000	45.435
16	480	433.5870	389.0620	470.3152	-45.625	19.225
17	510	418.9434	257.0117	293.3482	-55.881	-0.152
18	540	461.6219	230.8110	179.2280	-53.981	-0.808
19	665	585.3360	292.6680	130.3593	-64.239	0.517
20	700	410.0692	350.0000	209.5760	-36.586	0.000
21	630	1098.8420	803.6436	-803.4668	46.000	4.313
22	880	1532.1503	440.0000	-438.3213	58.000	7.962
23	690	612.2901	601.7633	-587.3655	-48.555	39.000
24	840	1007.6955	420.0000	594.4923	52.437	7.000
25	750	1308.1452	956.7185	-1264.0160	46.000	4.313
26	780	460.9082	230.4541	199.9435	18.346	-4.838
27	1080	822.9871	540.0000	-530.2695	74.089	44.610
28	840	755.1075	679.4570	401.2331	-43.613	19.233
29	1015	4895.4642	2737.0007	-869.5306	-58.000	45.435
30	900	834.4975	450.0000	-153.0696	-57.716	0.656