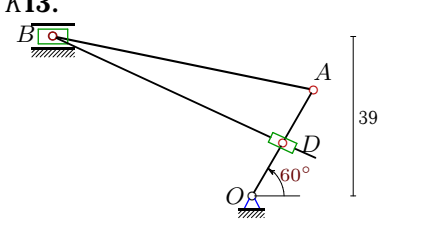
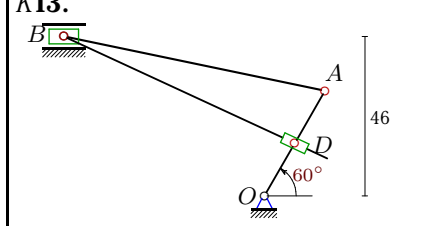
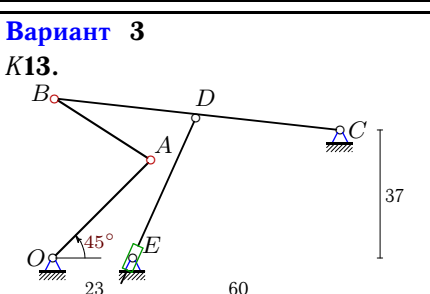
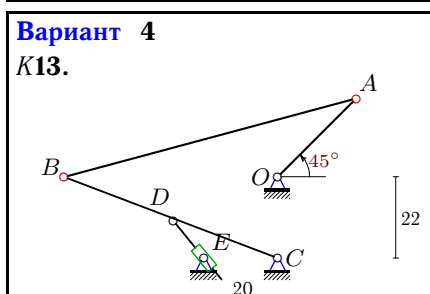
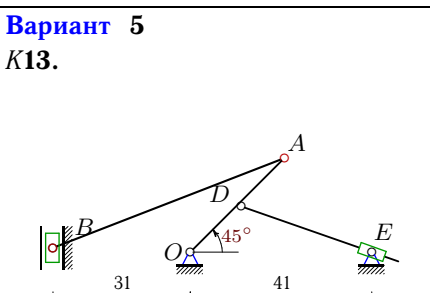
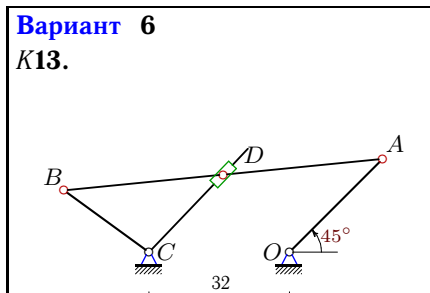
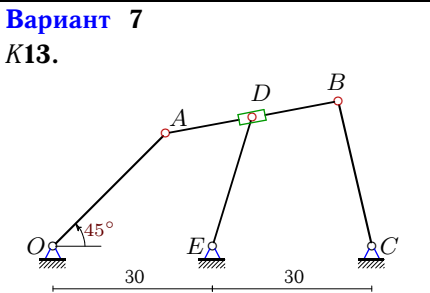
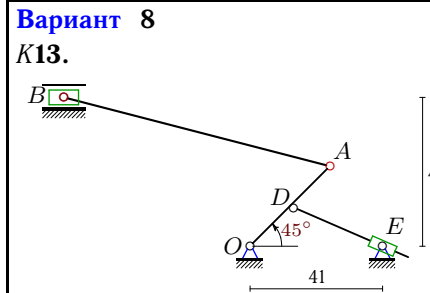
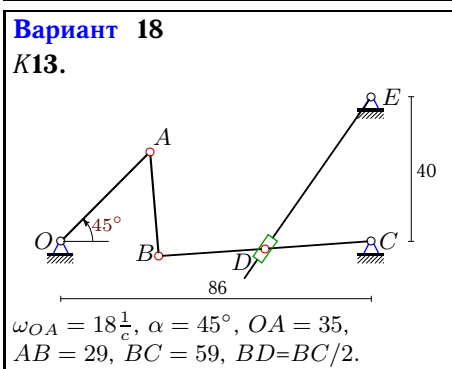
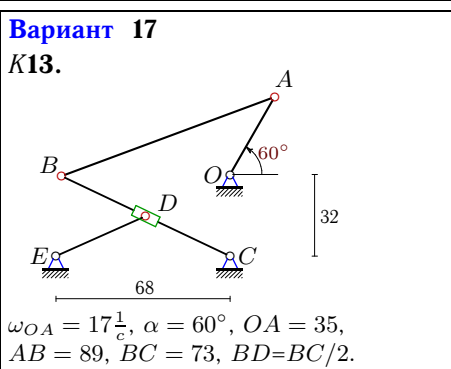
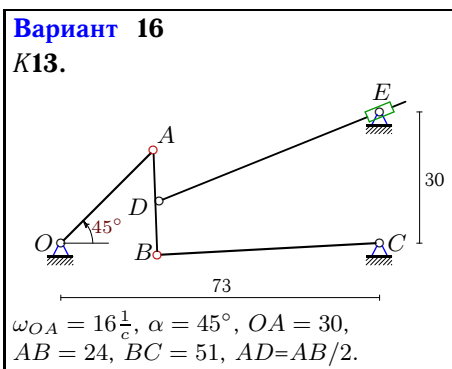
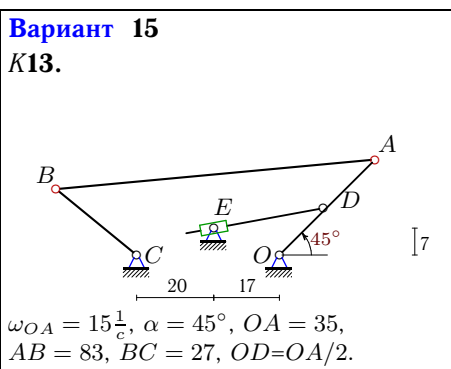
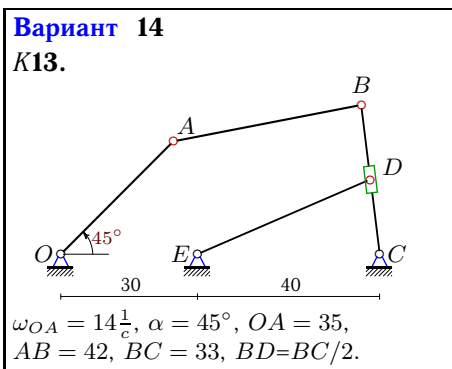
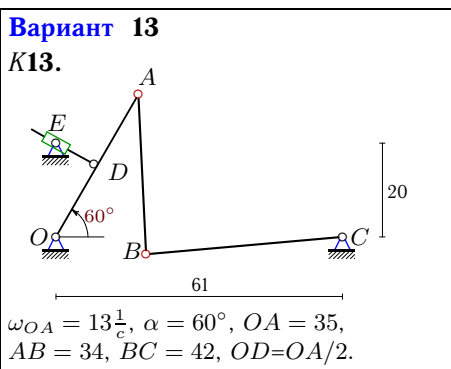
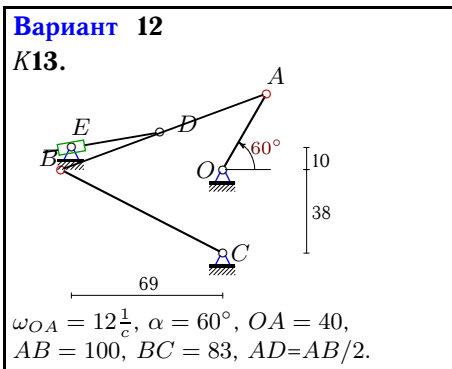
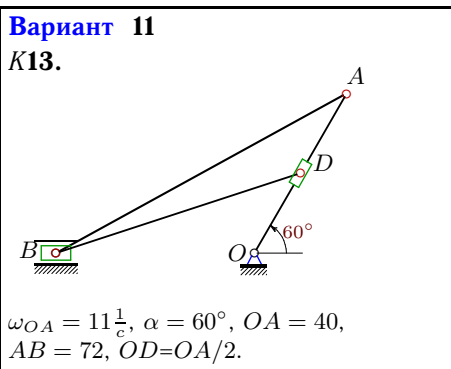
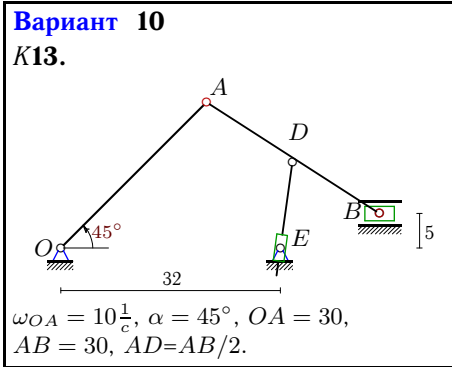
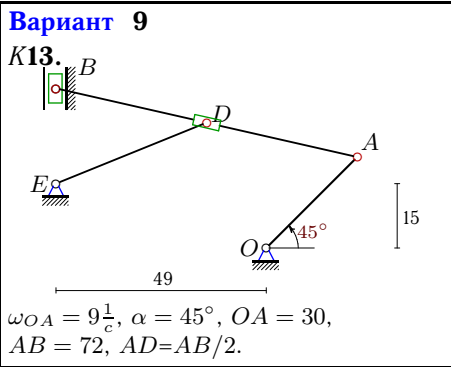


Механизм с муфтой

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).

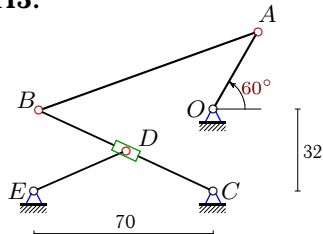
Кирсанов М.Н. Решебник. Теоретическая механика с. 216.

<p>Вариант 1 К13.</p>  <p>$\omega_{OA} = 1\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 30$, $AB = 65$, $OD = OA/2$.</p>	<p>Вариант 2 К13.</p>  <p>$\omega_{OA} = 2\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 35$, $AB = 77$, $OD = OA/2$.</p>
<p>Вариант 3 К13.</p>  <p>$\omega_{OA} = 3\frac{1}{c}$, $\alpha = 45^\circ$, $OA = 40$, $AB = 33$, $BC = 83$, $BD = BC/2$.</p>	<p>Вариант 4 К13.</p>  <p>$\omega_{OA} = 4\frac{1}{c}$, $\alpha = 45^\circ$, $OA = 30$, $AB = 82$, $BC = 62$, $BD = BC/2$.</p>
<p>Вариант 5 К13.</p>  <p>$\omega_{OA} = 5\frac{1}{c}$, $\alpha = 45^\circ$, $OA = 30$, $AB = 56$, $OD = OA/2$.</p>	<p>Вариант 6 К13.</p>  <p>$\omega_{OA} = 6\frac{1}{c}$, $\alpha = 45^\circ$, $OA = 30$, $AB = 73$, $BC = 24$, $AD = AB/2$.</p>
<p>Вариант 7 К13.</p>  <p>$\omega_{OA} = 7\frac{1}{c}$, $\alpha = 45^\circ$, $OA = 30$, $AB = 33$, $BC = 28$, $AD = AB/2$.</p>	<p>Вариант 8 К13.</p>  <p>$\omega_{OA} = 8\frac{1}{c}$, $\alpha = 45^\circ$, $OA = 35$, $AB = 85$, $OD = OA/2$.</p>



Вариант 19

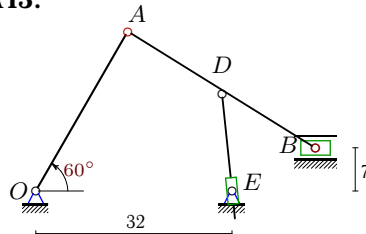
K13.



$\omega_{OA} = 19\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 35$,
 $AB = 91$, $BC = 75$, $BD = BC/2$.

Вариант 20

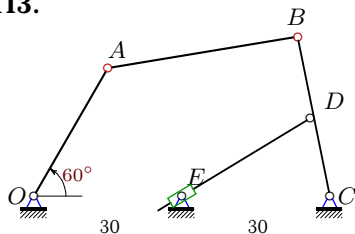
K13.



$\omega_{OA} = 20\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 30$,
 $AB = 36$, $AD = AB/2$.

Вариант 21

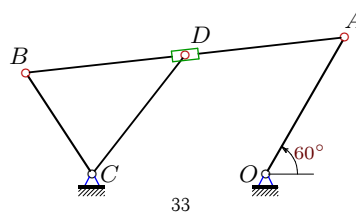
K13.



$\omega_{OA} = 21\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 30$,
 $AB = 39$, $BC = 33$, $BD = BC/2$.

Вариант 22

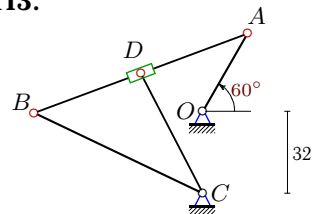
K13.



$\omega_{OA} = 22\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 30$,
 $AB = 61$, $BC = 23$, $AD = AB/2$.

Вариант 23

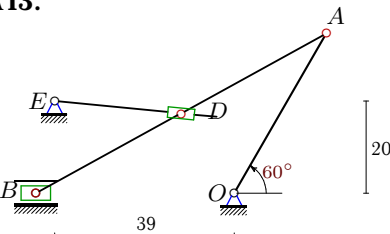
K13.



$\omega_{OA} = 23\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 35$,
 $AB = 89$, $BC = 73$, $AD = AB/2$.

Вариант 24

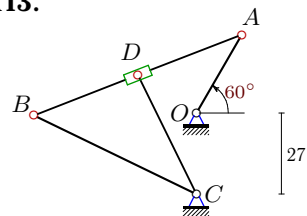
K13.



$\omega_{OA} = 24\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 40$,
 $AB = 72$, $AD = AB/2$.

Вариант 25

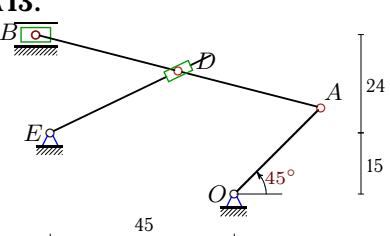
K13.



$\omega_{OA} = 25\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 30$,
 $AB = 74$, $BC = 60$, $AD = AB/2$.

Вариант 26

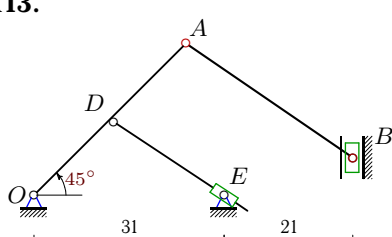
K13.



$\omega_{OA} = 26\frac{1}{c}$, $\alpha = 45^\circ$, $OA = 30$,
 $AB = 72$, $AD = AB/2$.

Вариант 27

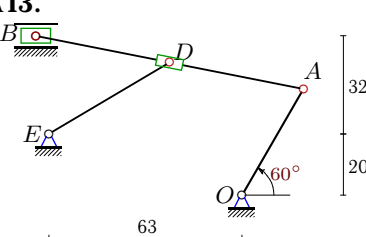
K13.



$\omega_{OA} = 27\frac{1}{c}$, $\alpha = 45^\circ$, $OA = 35$,
 $AB = 33$, $OD = OA/2$.

Вариант 28

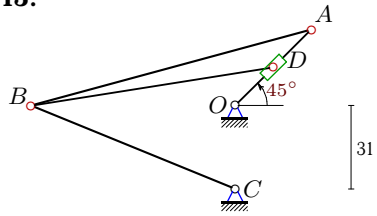
K13.



$\omega_{OA} = 28\frac{1}{c}$, $\alpha = 60^\circ$, $OA = 40$,
 $AB = 89$, $AD = AB/2$.

Вариант 29

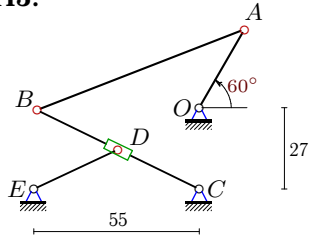
K13.



$\omega_{OA} = 29\frac{1}{c}$, $\alpha = 45^\circ$, $OA = 40$,
 $AB = 108$, $BC = 82$, $OD = OA/2$.

Вариант 30

K13.



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

Ответы

	v_A	v_B	v_D	v_r	x_B	y_B
1	30	29.0473	15.0000	-11.4204	-48.683	39.000
2	70	67.9060	35.0000	-26.7661	-57.885	46.000
3	120	263.9708	131.9854	-125.5227	0.499	46.088
4	120	102.5794	51.2897	25.5985	-57.983	-0.046
5	150	167.5116	75.0000	-67.5454	-31.000	0.970
6	180	172.3078	114.3411	83.3769	-51.437	14.078
7	210	118.8256	145.4219	41.7982	53.652	27.271
8	280	249.1139	140.0000	-130.1489	-57.552	46.000
9	270	1031.8492	618.7915	-171.0988	-49.000	37.154
10	300	348.3895	299.6600	-66.2056	46.455	5.000
11	440	260.3105	220.0000	135.0392	-43.119	0.000
12	480	415.9591	309.8926	309.6551	-73.801	-0.020
13	455	246.6332	227.5000	227.4634	19.159	-3.649
14	490	274.7552	137.3776	469.1435	65.979	32.754
15	525	477.9059	262.5000	149.1788	-57.898	17.096
16	480	351.4445	388.9386	-36.7050	22.075	-2.771
17	595	529.4825	264.7413	-310.0791	-65.934	-0.668
18	630	480.8181	240.4091	186.8241	27.146	-4.152
19	665	610.6659	305.3329	-343.6731	-68.099	-0.574
20	600	705.7637	630.7840	-212.2219	45.590	7.000
21	630	487.1374	243.5687	229.2135	53.477	32.349
22	660	596.1821	534.9602	469.6261	-45.625	19.225
23	805	716.3587	516.9708	1005.4529	-65.934	-0.668
24	960	567.9502	739.6853	719.6797	-43.119	0.000
25	750	641.1416	475.5325	1319.0119	-53.981	-0.808
26	780	692.1541	680.2542	440.3536	-48.555	39.000
27	945	1646.6558	472.5000	-463.1765	52.000	6.138
28	1120	1081.3123	1063.1640	993.6361	-67.291	52.000
29	1160	949.2274	580.0000	184.7990	-75.934	-0.047
30	900	769.3699	384.6850	-474.0729	-53.981	-0.808