

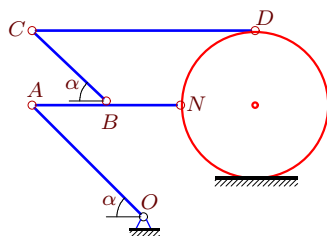
Кинематический анализ плоского механизма

В указанном положении механизма задана угловая скорость одного из звеньев. Длины звеньев даны в сантиметрах. Стержни, направление которых не указано, считать горизонтальными или вертикальными. Диск катится по горизонтальной поверхности без проскальзывания. Найти угловые скорости всех звеньев механизма.

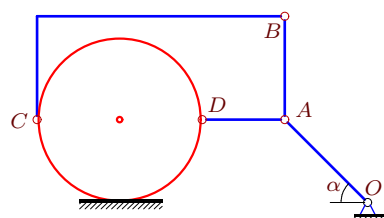
Кирсанов М.Н. **Решебник. Теоретическая механика**/Под ред. А. И. Кириллова.— М.: ФИЗМАТЛИТ, 2008. — 384 с. (с.158.)

Задача К-26.1.

17

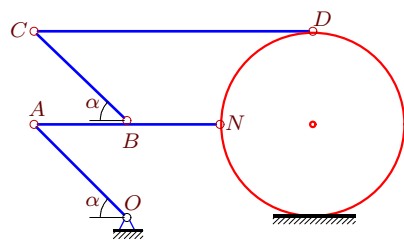


$$\omega_{OA_z} = 2c^{-1}, R = 4, OA = 6\sqrt{2},$$
$$AB = 4, BN = 4, BC = 4\sqrt{2}, CD = 12, \alpha = 45^\circ$$



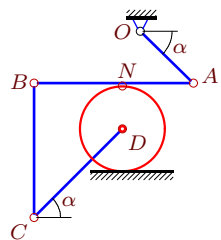
$$\omega_{OA_z} = 1 \text{ c}^{-1}, R = 4, OA = 4\sqrt{2},$$

$$AB = 5, AD = 4, \alpha = 45^\circ.$$



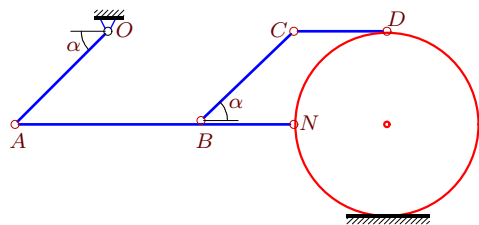
$$\omega_{OA_z} = 3c^{-1}, R = 6, OA = 6\sqrt{2},$$

$$AB = 6, BN = 6, BC = 6\sqrt{2}, CD = 18, \alpha = 45^\circ$$



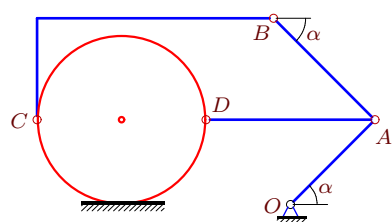
$$\omega_{OA_z} = 20 \text{ c}^{-1}, R = 5, OA = 6\sqrt{2},$$

$$CD = 10\sqrt{2}, AN = 8, AB = 18, \alpha = 45^\circ.$$



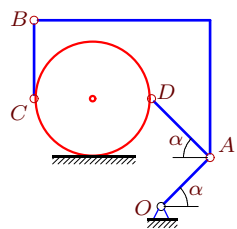
$$\omega_{OA_z} = 3c^{-1}, R = 4, OA = 4\sqrt{2},$$

$$AB = 8, BN = 4, BC = 4\sqrt{2}, CD = 4, \alpha = 45^\circ$$



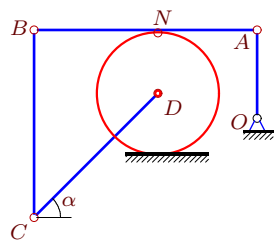
$$\omega_{OA_z} = 2c^{-1}, R = 5, OA = 5\sqrt{2},$$

$$AB = 6\sqrt{2}, AD = 10, \alpha = 45^\circ.$$

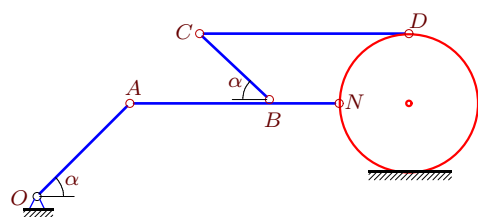


$$\omega_{OA_z} = 36c^{-1}, R = 6, OA = 5\sqrt{2},$$

$$AD = 6\sqrt{2}, BC = 8, \alpha = 45^\circ.$$

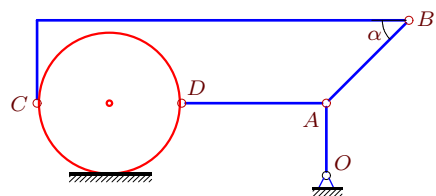


$$\omega_{OA_z} = 30 \text{ c}^{-1}, R = 5, OA = 7, \\ CD = 10\sqrt{2}, AN = 8, AB = 18, \alpha = 45^\circ.$$

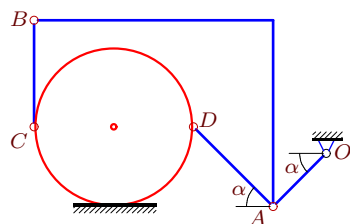


$$\omega_{OA_z} = 27c^{-1}, R = 6, OA = 8\sqrt{2},$$

$$AB = 12, BN = 6, BC = 6\sqrt{2}, CD = 18, \alpha = 45^\circ$$

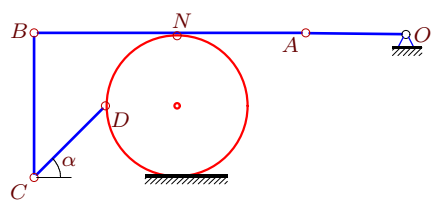


$$\omega_{OA_z} = 4\text{c}^{-1}, R = 7, OA = 7, \\ AB = 8\sqrt{2}, AD = 14, \alpha = 45^\circ.$$

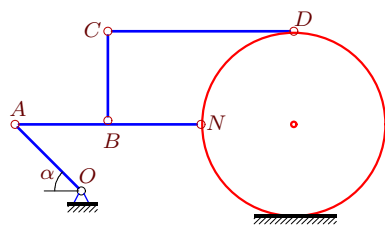


$$\omega_{OA_z} = 9c^{-1}, R = 6, OA = 4\sqrt{2},$$

$$AD = 6\sqrt{2}, BC = 8, \alpha = 45^\circ.$$

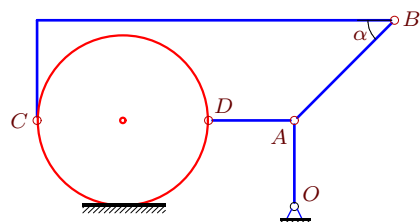


$$\omega_{OA_z} = 9c^{-1}, R = 5, OA = 7, \\ CD = 5\sqrt{2}, AN = 9, AB = 19, \alpha = 45^\circ.$$

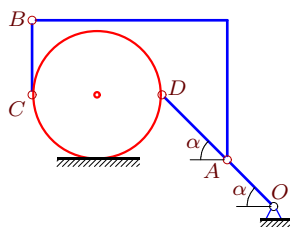


$$\omega_{OA_z} = 14c^{-1}, R = 7, OA = 5\sqrt{2},$$

$$AB = 7, BN = BC = 7, CD = 14, \alpha = 45^\circ$$

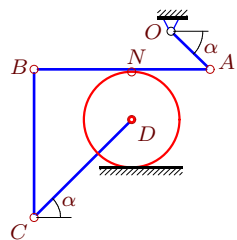


$$\omega_{OA_z} = 3e^{-1}, R = 6, OA = 6, AB = 7\sqrt{2}, AD = 6, \alpha = 45^\circ.$$

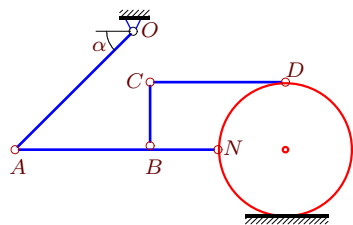


$$\omega_{OA_z} = 84c^{-1}, R = 7, OA = 5\sqrt{2},$$

$$AD = 7\sqrt{2}, BC = 8, \alpha = 45^\circ.$$

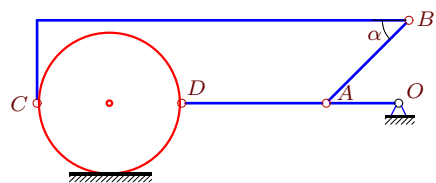


$\omega_{OA_z} = 10 \text{ c}^{-1}$, $R = 5$, $OA = 4\sqrt{2}$,
 $CD = 10\sqrt{2}$, $AN = 8$, $AB = 18$, $\alpha = 45^\circ$.

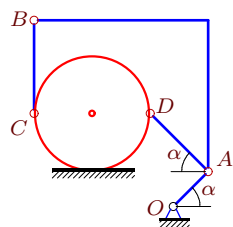


$$\omega_{OA_z} = 24c^{-1}, R = 4, OA = 7\sqrt{2},$$

$$AB = 8, BN = BC = 4, CD = 8, \alpha = 45^\circ$$

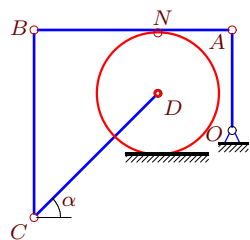


$$\omega_{OA_z} = 4c^{-1}, R = 7, OA = 7, \\ AB = 8\sqrt{2}, AD = 14, \alpha = 45^\circ.$$

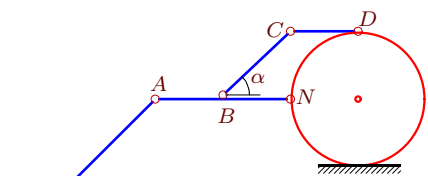


$$\omega_{OA_z} = 20 \text{ c}^{-1}, R = 5, OA = 3\sqrt{2},$$

$$AD = 5\sqrt{2}, BC = 8, \alpha = 45^\circ.$$

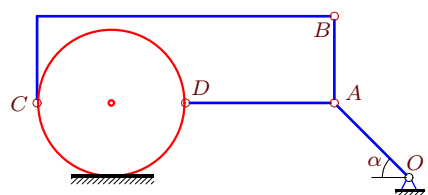


$\omega_{OA_z} = 15c^{-1}$, $R = 5$, $OA = 8$,
 $CD = 10\sqrt{2}$, $AN = 6$, $AB = 16$, $\alpha = 45^\circ$.



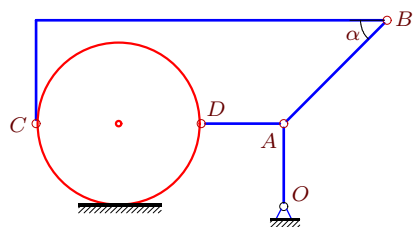
$$\omega_{OA_z} = 4c^{-1}, R = 4, OA = 7\sqrt{2},$$

$$AB = 4, BN = 4, BC = 4\sqrt{2}, CD = 4, \alpha = 45^\circ$$

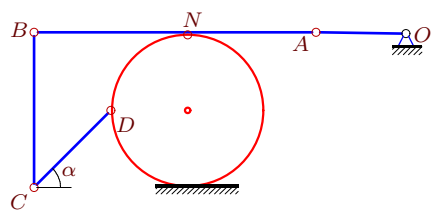


$$\omega_{OA_z} = 1 \text{ c}^{-1}, R = 6, OA = 6\sqrt{2},$$

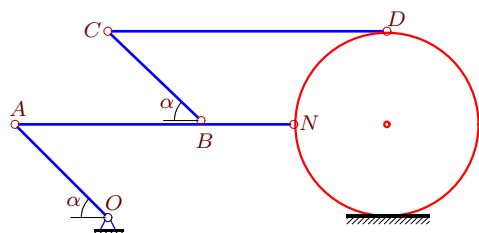
$$AB = 7, AD = 12, \alpha = 45^\circ.$$



$$\omega_{OA_z} = 3e^{-1}, R = 4, OA = 4, \\ AB = 5\sqrt{2}, AD = 4, \alpha = 45^\circ.$$

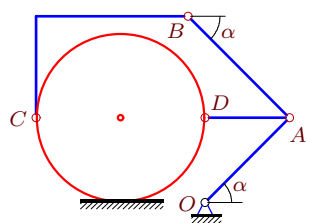


$$\omega_{OA_z} = 10 \text{ c}^{-1}, R = 6, OA = 7, \\ CD = 6\sqrt{2}, AN = 10, AB = 22, \alpha = 45^\circ.$$



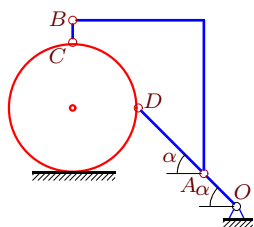
$$\omega_{OA_z} = 3c^{-1}, R = 7, OA = 7\sqrt{2},$$

$$AB = 14, BN = 7, BC = 7\sqrt{2}, CD = 21, \alpha = 45^\circ$$



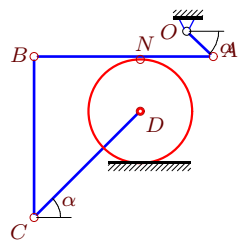
$$\omega_{OA_z} = 3e^{-1}, R = 5, OA = 5\sqrt{2},$$

$$AB = 6\sqrt{2}, AD = 5, \alpha = 45^\circ.$$



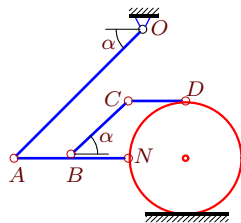
$$\omega_{OA_z} = 4\text{c}^{-1}, R = 6, OA = 3\sqrt{2},$$

$$AD = 6\sqrt{2}, BC = 2, \alpha = 45^\circ.$$



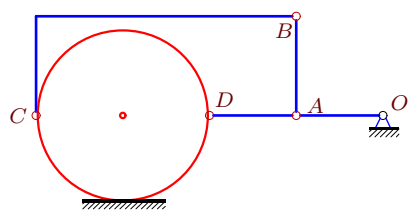
$$\omega_{OA_z} = 44 \text{ c}^{-1}, R = 8, OA = 4\sqrt{2},$$

$$CD = 16\sqrt{2}, AN = 11, AB = 27, \alpha = 45^\circ.$$

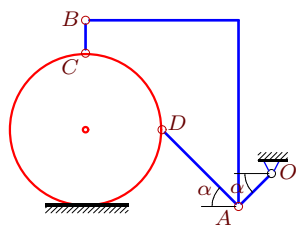


$$\omega_{OA_z} = 4c^{-1}, R = 4, OA = 9\sqrt{2},$$

$$AB = 4, BN = 4, BC = 4\sqrt{2}, CD = 4, \alpha = 45^\circ$$

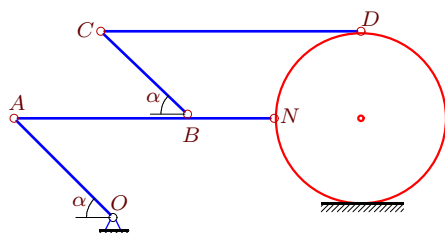


$$\omega_{OA_z} = 3c^{-1}, R = 7, OA = 7, \\ AB = 8, AD = 7.$$



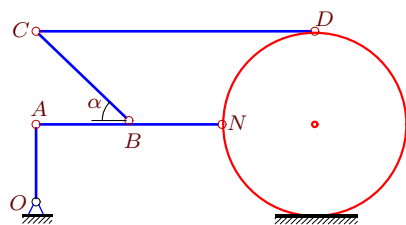
$$\omega_{OA_z} = 14c^{-1}, R = 7, OA = 3\sqrt{2},$$

$$AD = 7\sqrt{2}, BC = 3, \alpha = 45^\circ.$$

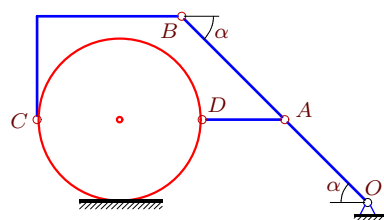


$$\omega_{OA_z} = 21c^{-1}, R = 7, OA = 8\sqrt{2},$$

$$AB = 14, BN = 7, BC = 7\sqrt{2}, CD = 21, \alpha = 45^\circ$$



$$\omega_{OA_z} = 12c^{-1}, R = 6, OA = 5, \\ AB = 6, BN = 6, BC = 6\sqrt{2}, CD = 18, \alpha = 45^\circ$$



$$\omega_{OA_z} = 1 \text{ c}^{-1}, R = 4, OA = 4\sqrt{2},$$

$$AB = 5\sqrt{2}, AD = 4, \alpha = 45^\circ.$$

Ответы.

Кинематический анализ плоского механизма

16.05.2016

№	ω_{AB_z}	ω_{BC_z}	ω_{CD_z}	ω_{DA_z}	$\omega_{\text{диск}_z}$
1	0	3	2	—	3
2	0	0	—	-2	1
3	0	3	2	—	3
4	15	6	15	—	-12
5	2	-3	2	—	-3
6	1	1	—	0	2
7	20	35	—	0	30
8	0	7	0	—	21
9	-24	36	16	—	36
10	1	1	—	-2	4
11	-4	-7	—	0	-6
12	-7	-7	-14	—	0
13	0	10	5	—	10
14	1	1	—	-3	3
15	-20	15	—	-60	0
16	5	2	5	—	-4
17	28	-42	-7	—	-42
18	-1	-1	—	-2	0
19	8	13	—	0	12
20	0	4	0	—	12
21	-7	7	-7	—	7
22	0	0	—	-1	1
23	1	1	—	-3	3
24	-7	-7	-14	—	0
25	0	3	2	—	3
26	2	2	—	0	3
27	-1	-1	—	-2	0
28	16	7	16	—	-11
29	9	-9	9	—	-9
30	-1	-1	—	-3	0
31	-3	-3	—	0	-6
32	0	24	16	—	24
33	-5	10	5	—	10
34	0	0	—	-2	1

К-26 файл о26k17А