

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 26.1. 41

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

Задача 26.2. 41

$\omega_{OA_z} = 3\frac{1}{c}$, $R = 3$, $OA = 4\sqrt{2}$,
 $AK = 6$, $BK = 2$, $KN = 3$, $CD = 5$, $\alpha = 45^\circ$.

Задача 26.3. 41

$\omega_{OA_z} = 2\frac{1}{c}$, $R = 6$, $OA = 3$,
 $AK = 9$, $BK = 3$, $KN = 6$, $CD = 9$.

Задача 26.4. 41

$\omega_{OA_z} = 3\frac{1}{c}$, $R = 4$, $OA = 4$,
 $AK = 7$, $BK = 4$, $KN = 4$, $CD = 4$.

Задача 26.5. 41

$\omega_{OA_z} = 4\frac{1}{c}$, $R = 6$, $OA = 3$,
 $AD = 6\sqrt{2}$, $BC = 8$, $\alpha = 45^\circ$.

Задача 26.6. 41

$\omega_{OA_z} = 3\frac{1}{c}$, $R = 3$, $OA = 2$,
 $AK = 6$, $BK = 2$, $KN = 3$, $CD = 5$.

Задача 26.7. 41

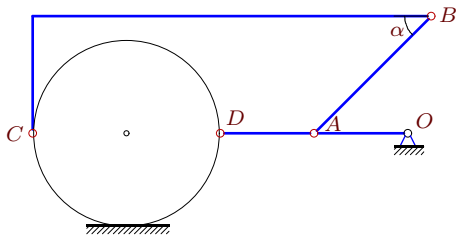
$\omega_{OA_z} = 30\frac{1}{c}$, $R = 4$, $OA = 4$,
 $AD = 4\sqrt{2}$, $BC = 5$, $\alpha = 45^\circ$.

Задача 26.8. 41

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

Задача 26.9.

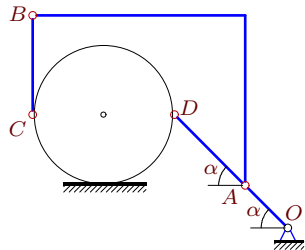
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$$\omega_{OA_z} = 3\frac{1}{c}, R = 4, OA = 4, AB = 5\sqrt{2}, AD = 4, \alpha = 45^\circ.$$

Задача 26.11.

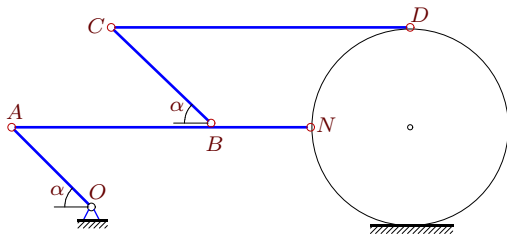
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$$\omega_{OA_z} = 35\frac{1}{c}, R = 5, OA = 3\sqrt{2}, AD = 5\sqrt{2}, BC = 7, \alpha = 45^\circ.$$

Задача 26.13.

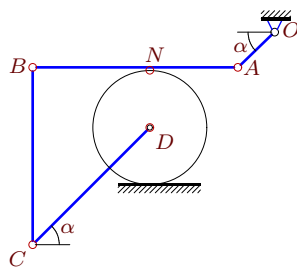
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$$\omega_{OA_z} = 15\frac{1}{c}, R = 5, OA = 4\sqrt{2}, AB = 10, BN = 5, BC = 5\sqrt{2}, CD = 15, \alpha = 45^\circ$$

Задача 26.15.

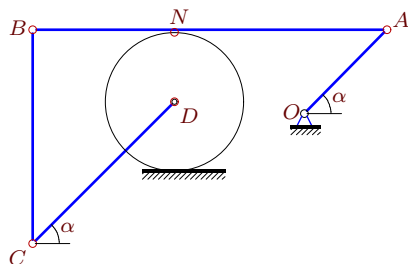
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$$\omega_{OA_z} = 144\frac{1}{c}, R = 8, OA = 5\sqrt{2}, CD = 16\sqrt{2}, AN = 12, AB = 28, \alpha = 45^\circ.$$

Задача 26.17.

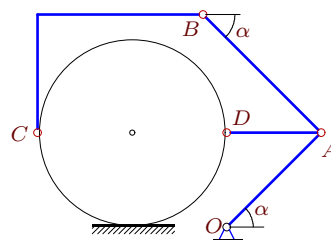
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$$\omega_{OA_z} = 108\frac{1}{c}, R = 6, OA = 7\sqrt{2}, CD = 12\sqrt{2}, AN = 18, AB = 30, \alpha = 45^\circ.$$

Задача 26.10.

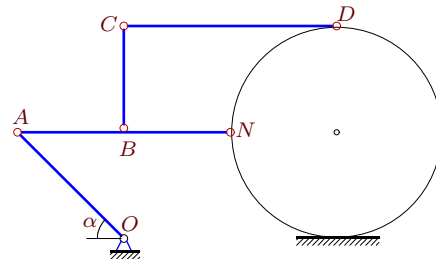
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$$\omega_{OA_z} = 3\frac{1}{c}, R = 4, OA = 4\sqrt{2}, AB = 5\sqrt{2}, AD = 4, \alpha = 45^\circ.$$

Задача 26.12.

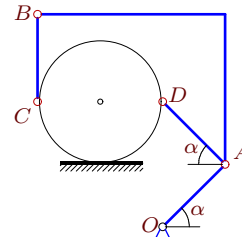
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$$\omega_{OA_z} = 2\frac{1}{c}, R = 5, OA = 5\sqrt{2}, AB = 5, BN = BC = 5, CD = 10, \alpha = 45^\circ$$

Задача 26.14.

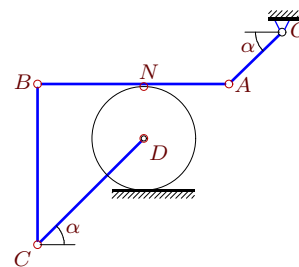
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$$\omega_{OA_z} = 21\frac{1}{c}, R = 5, OA = 5\sqrt{2}, AD = 5\sqrt{2}, BC = 7, \alpha = 45^\circ.$$

Задача 26.16.

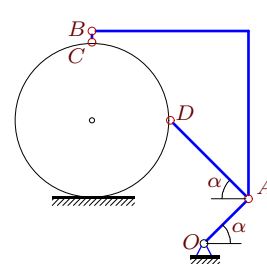
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$$\omega_{OA_z} = 24\frac{1}{c}, R = 5, OA = 5\sqrt{2}, CD = 10\sqrt{2}, AN = 8, AB = 18, \alpha = 45^\circ.$$

Задача 26.18.

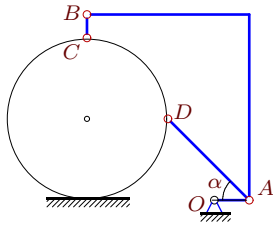
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$$\omega_{OA_z} = 7\frac{1}{c}, R = 7, OA = 4\sqrt{2}, AD = 7\sqrt{2}, BC = 1, \alpha = 45^\circ.$$

Задача 26.19.

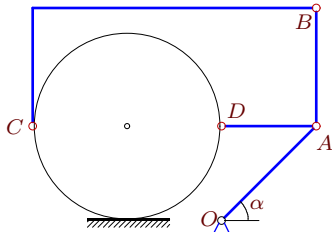
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$\omega_{OA_z} = 14\frac{1}{c}$, $R = 7$, $OA = 3$,
 $AD = 7\sqrt{2}$, $BC = 2$, $\alpha = 45^\circ$.

Задача 26.21.

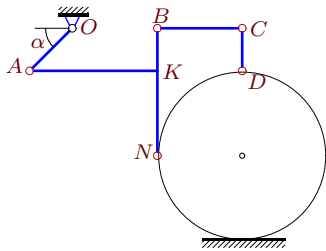
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$\omega_{OA_z} = 3\frac{1}{c}$, $R = 4$, $OA = 4\sqrt{2}$,
 $AB = 5$, $AD = 4$, $\alpha = 45^\circ$.

Задача 26.23.

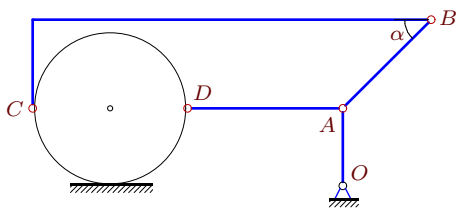
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$\omega_{OA_z} = 2\frac{1}{c}$, $R = 6$, $OA = 3\sqrt{2}$,
 $AK = 9$, $BK = 3$, $KN = 6$, $CD = 3$, $\alpha = 45^\circ$.

Задача 26.25.

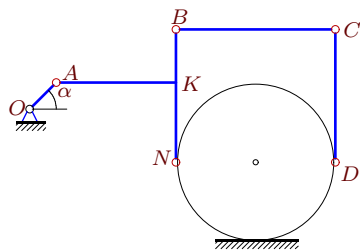
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$\omega_{OA_z} = 4\frac{1}{c}$, $R = 7$, $OA = 7$,
 $AB = 8\sqrt{2}$, $AD = 14$, $\alpha = 45^\circ$.

Задача 26.27.

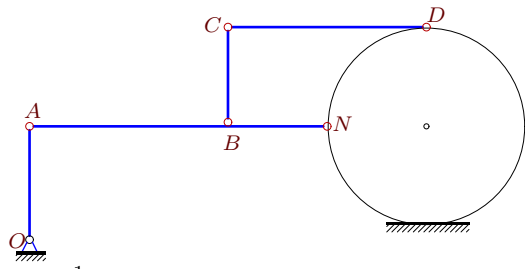
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$\omega_{OA_z} = 3\frac{1}{c}$, $R = 6$, $OA = 2\sqrt{2}$,
 $AK = 9$, $BK = 4$, $KN = 6$, $CD = 10$, $\alpha = 45^\circ$.

Задача 26.20.

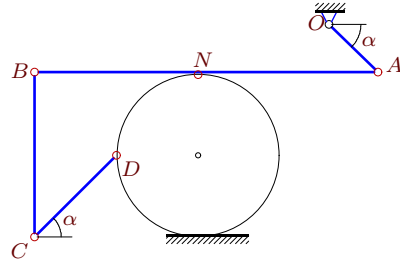
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$\omega_{OA_z} = 21\frac{1}{c}$, $R = 7$, $OA = 8$,
 $AB = 14$, $BN = BC = 7$, $CD = 14$.

Задача 26.22.

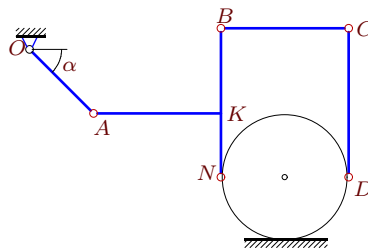
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$\omega_{OA_z} = 110\frac{1}{c}$, $R = 5$, $OA = 3\sqrt{2}$,
 $CD = 5\sqrt{2}$, $AN = 11$, $AB = 21$, $\alpha = 45^\circ$.

Задача 26.24.

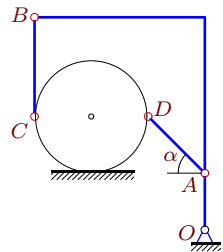
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$\omega_{OA_z} = 1\frac{1}{c}$, $R = 3$, $OA = 3\sqrt{2}$,
 $AK = 6$, $BK = 4$, $KN = 3$, $CD = 7$, $\alpha = 45^\circ$.

Задача 26.26.

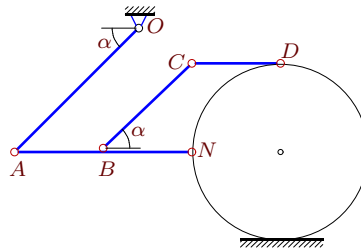
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$\omega_{OA_z} = 42\frac{1}{c}$, $R = 4$, $OA = 4$,
 $AD = 4\sqrt{2}$, $BC = 7$, $\alpha = 45^\circ$.

Задача 26.28.

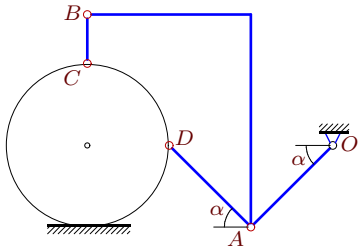
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$\omega_{OA_z} = 5\frac{1}{c}$, $R = 5$, $OA = 7\sqrt{2}$,
 $AB = 5$, $BN = 5$, $BC = 5\sqrt{2}$, $CD = 5$, $\alpha = 45^\circ$.

Задача 26.29.

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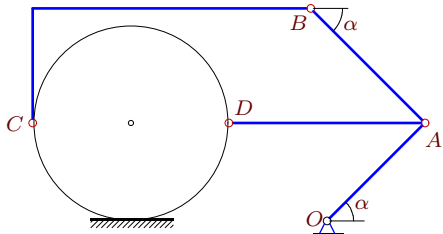


$$\omega_{OA_z} = 2\frac{1}{c}, R = 5, OA = 5\sqrt{2},$$

$$AD = 5\sqrt{2}, BC = 3, \alpha = 45^\circ.$$

Задача 26.31.

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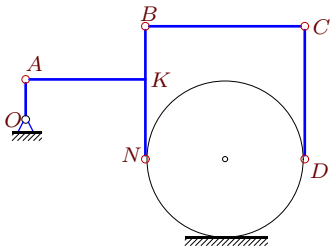


$$\omega_{OA_z} = 2\frac{1}{c}, R = 6, OA = 6\sqrt{2},$$

$$AB = 7\sqrt{2}, AD = 12, \alpha = 45^\circ.$$

Задача 26.33.

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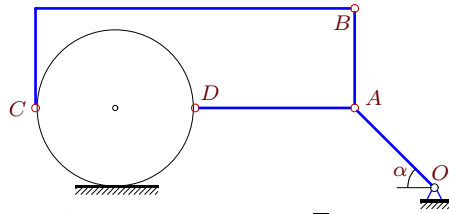


$$\omega_{OA_z} = 2\frac{1}{c}, R = 6, OA = 3,$$

$$AK = 9, BK = 4, KN = 6, CD = 10.$$

Задача 26.30.

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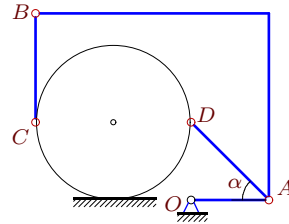


$$\omega_{OA_z} = 1\frac{1}{c}, R = 4, OA = 4\sqrt{2},$$

$$AB = 5, AD = 8, \alpha = 45^\circ.$$

Задача 26.32.

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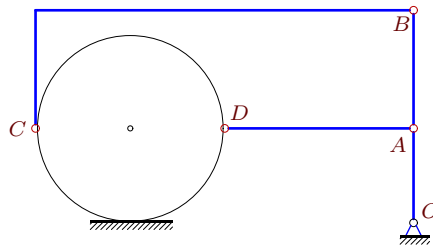


$$\omega_{OA_z} = 2\frac{1}{c}, R = 5, OA = 5,$$

$$AD = 5\sqrt{2}, BC = 7, \alpha = 45^\circ.$$

Задача 26.34.

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$$\omega_{OA_z} = 4\frac{1}{c}, R = 4, OA = 4,$$

$$AB = 5, AD = 8.$$

Кинематический анализ плоского механизма

№	ω_{AB_z}	ω_{BC_z}	ω_{CD_z}	ω_{DA_z}	$\omega_{диск_z}$
1	0	0	—	-1	1
2	8	-12	8	—	-12
3	-2	3	-2	—	3
4	-4	7	-15	—	7
5	-1	-1	—	-1	-1
6	-2	2	-2	—	2
7	5	21	—	-15	15
8	-1	-1	—	-3	0
9	-1	-1	—	-3	0
10	2	2	—	0	3
11	-7	3	—	-21	0
12	0	2	1	—	2
13	0	12	8	—	12
14	14	24	—	0	21
15	-60	-55	-60	—	-45
16	-15	-14	-15	—	-12
17	42	49	42	—	63
18	2	2	—	0	4
19	3	3	—	3	3
20	-8	24	8	—	24
21	2	2	—	0	3
22	30	30	93	—	-33
23	4	-5	22	—	-5
24	0	-1	0	—	-1
25	1	1	—	-2	4
26	7	23	—	-21	21
27	-4	5	-4	—	5
28	7	-7	7	—	-7
29	-1	-1	—	0	-2
30	0	0	—	-1	1
31	1	1	—	0	2
32	1	1	—	1	1
33	-2	3	-2	—	3
34	1	1	—	-2	4