

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. 45

$\omega_{OA_z} = 5\frac{1}{c}$, $R = 5$, $OA = 4\sqrt{2}$,
 $AK = 8$, $BK = 3$, $KN = 5$, $CD = 8$, $\alpha = 45^\circ$.

Задача 26.2. 45

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

Задача 26.3. 45

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

Задача 26.4. 45

$\omega_{OA_z} = 90\frac{1}{c}$, $R = 5$, $OA = 7\sqrt{2}$,
 $CD = 10\sqrt{2}$, $AN = 15$, $AB = 25$, $\alpha = 45^\circ$.

Задача 26.5. 45

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

Задача 26.6. 45

$\omega_{OA_z} = 27\frac{1}{c}$, $R = 6$, $OA = 4\sqrt{2}$,
 $CD = 12\sqrt{2}$, $AN = 18$, $AB = 30$, $\alpha = 45^\circ$.

Задача 26.7. 45

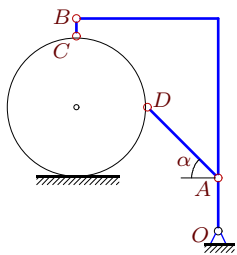
$\omega_{OA_z} = 4\frac{1}{c}$, $R = 4$, $OA = 3$,
 $AK = 7$, $BK = 4$, $KN = 4$, $CD = 8$.

Задача 26.8. 45

$\omega_{OA_z} = 12\frac{1}{c}$, $R = 4$, $OA = 5\sqrt{2}$,
 $AB = 4$, $BN = 4$, $BC = 4\sqrt{2}$, $CD = 12$, $\alpha = 45^\circ$

Задача 26.9.

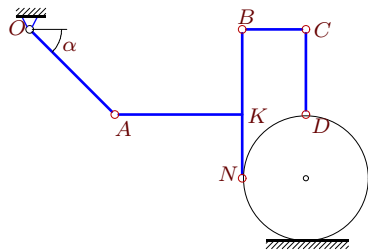
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$$\omega_{OA_z} = 8\frac{1}{c}, R = 4, OA = 3, AD = 4\sqrt{2}, BC = 1, \alpha = 45^\circ.$$

Задача 26.11.

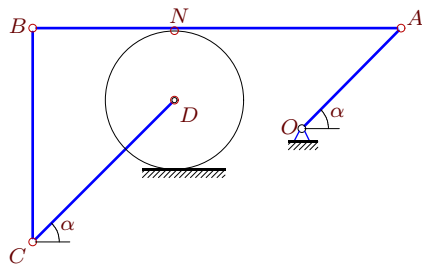
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$$\omega_{OA_z} = 3\frac{1}{c}, R = 3, OA = 4\sqrt{2}, AK = 6, BK = 4, KN = 3, CD = 4, \alpha = 45^\circ.$$

Задача 26.13.

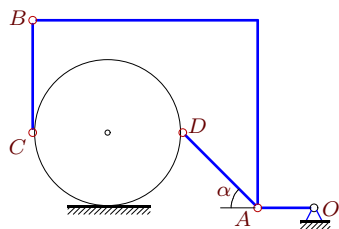
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$$\omega_{OA_z} = 80\frac{1}{c}, R = 5, OA = 7\sqrt{2}, CD = 10\sqrt{2}, AN = 16, AB = 26, \alpha = 45^\circ.$$

Задача 26.15.

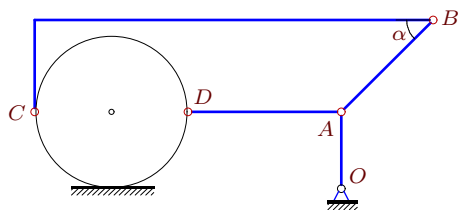
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$$\omega_{OA_z} = 8\frac{1}{c}, R = 4, OA = 3, AD = 4\sqrt{2}, BC = 6, \alpha = 45^\circ.$$

Задача 26.17.

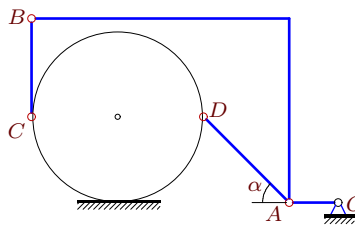
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$$\omega_{OA_z} = 4\frac{1}{c}, R = 5, OA = 5, AB = 6\sqrt{2}, AD = 10, \alpha = 45^\circ.$$

Задача 26.10.

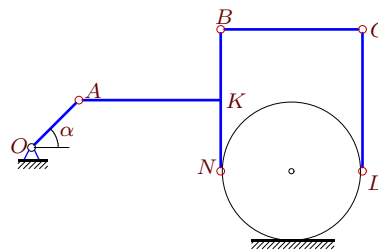
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$$\omega_{OA_z} = 7\frac{1}{c}, R = 7, OA = 4, AD = 7\sqrt{2}, BC = 8, \alpha = 45^\circ.$$

Задача 26.12.

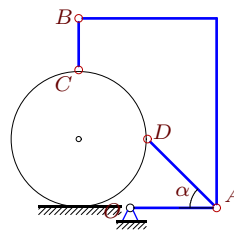
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$$\omega_{OA_z} = 3\frac{1}{c}, R = 3, OA = 2\sqrt{2}, AK = 6, BK = 3, KN = 3, CD = 6, \alpha = 45^\circ.$$

Задача 26.14.

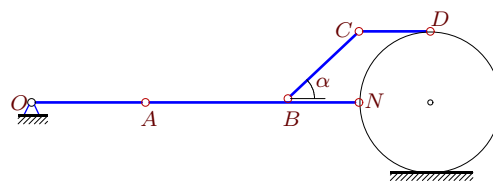
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$$\omega_{OA_z} = 8\frac{1}{c}, R = 4, OA = 5, AD = 4\sqrt{2}, BC = 3, \alpha = 45^\circ.$$

Задача 26.16.

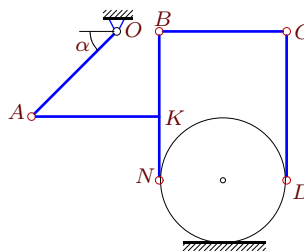
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$$\omega_{OA_z} = 15\frac{1}{c}, R = 5, OA = 8, AB = 10, BN = 5, BC = 5\sqrt{2}, CD = 5, \alpha = 45^\circ.$$

Задача 26.18.

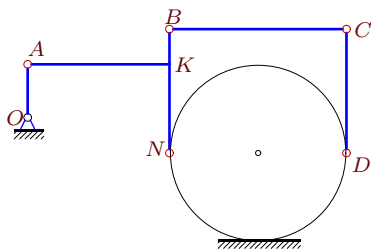
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$$\omega_{OA_z} = 3\frac{1}{c}, R = 3, OA = 4\sqrt{2}, AK = 6, BK = 4, KN = 3, CD = 7, \alpha = 45^\circ.$$

Задача 26.19.

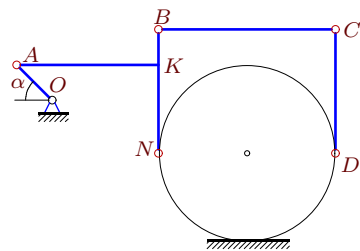
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$\omega_{OA_z} = 5\frac{1}{c}$, $R = 5$, $OA = 3$,
 $AK = 8$, $BK = 2$, $KN = 5$, $CD = 7$.

Задача 26.21.

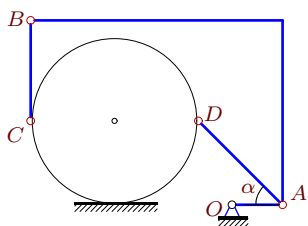
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$\omega_{OA_z} = 5\frac{1}{c}$, $R = 5$, $OA = 2\sqrt{2}$,
 $AK = 8$, $BK = 2$, $KN = 5$, $CD = 7$, $\alpha = 45^\circ$.

Задача 26.23.

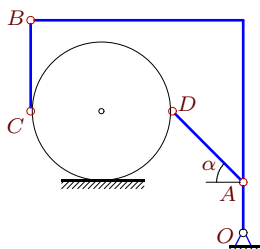
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$\omega_{OA_z} = 10\frac{1}{c}$, $R = 5$, $OA = 3$,
 $AD = 5\sqrt{2}$, $BC = 6$, $\alpha = 45^\circ$.

Задача 26.25.

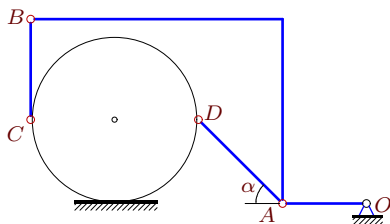
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$\omega_{OA_z} = 378\frac{1}{c}$, $R = 7$, $OA = 5$,
 $AD = 7\sqrt{2}$, $BC = 9$, $\alpha = 45^\circ$.

Задача 26.27.

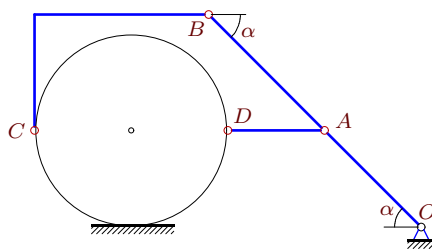
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$\omega_{OA_z} = 2\frac{1}{c}$, $R = 5$, $OA = 5$,
 $AD = 5\sqrt{2}$, $BC = 6$, $\alpha = 45^\circ$.

Задача 26.20.

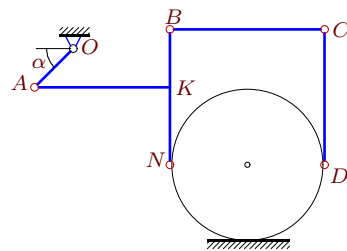
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$\omega_{OA_z} = 1\frac{1}{c}$, $R = 5$, $OA = 5\sqrt{2}$,
 $AB = 6\sqrt{2}$, $AD = 5$, $\alpha = 45^\circ$.

Задача 26.22.

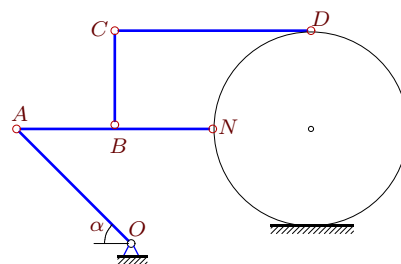
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$\omega_{OA_z} = 6\frac{1}{c}$, $R = 4$, $OA = 2\sqrt{2}$,
 $AK = 7$, $BK = 3$, $KN = 4$, $CD = 7$, $\alpha = 45^\circ$.

Задача 26.24.

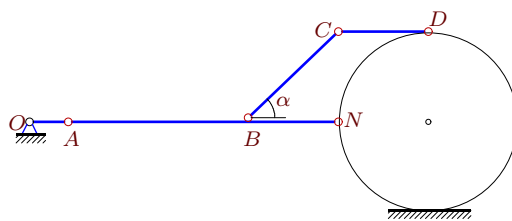
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$\omega_{OA_z} = 12\frac{1}{c}$, $R = 6$, $OA = 7\sqrt{2}$,
 $AB = 6$, $BN = BC = 6$, $CD = 12$, $\alpha = 45^\circ$.

Задача 26.26.

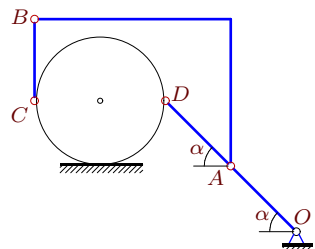
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$\omega_{OA_z} = 7\frac{1}{c}$, $R = 7$, $OA = 3$,
 $AB = 14$, $BN = 7$, $BC = 7\sqrt{2}$, $CD = 7$, $\alpha = 45^\circ$.

Задача 26.28.

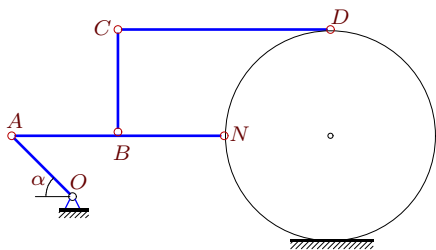
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$\omega_{OA_z} = 15\frac{1}{c}$, $R = 4$, $OA = 4\sqrt{2}$,
 $AD = 4\sqrt{2}$, $BC = 5$, $\alpha = 45^\circ$.

Задача 26.29.

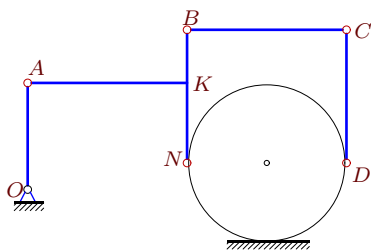
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$\omega_{OA_z} = 7\frac{1}{c}$, $R = 7$, $OA = 4\sqrt{2}$,
 $AB = 7$, $BN = BC = 7$, $CD = 14$, $\alpha = 45^\circ$

Задача 26.31.

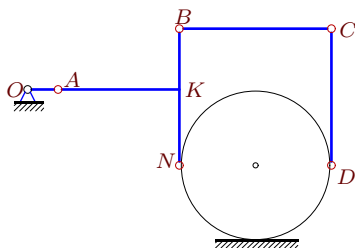
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$\omega_{OA_z} = 3\frac{1}{c}$, $R = 3$, $OA = 4$,
 $AK = 6$, $BK = 2$, $KN = 3$, $CD = 5$.

Задача 26.33.

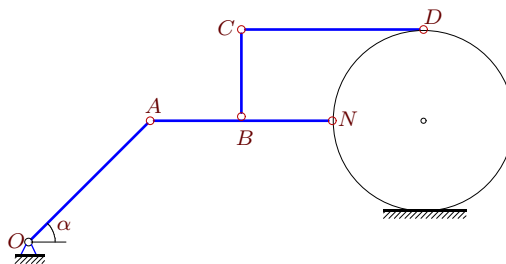
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$\omega_{OA_z} = 3\frac{1}{c}$, $R = 5$, $OA = 2$,
 $AK = 8$, $BK = 4$, $KN = 5$, $CD = 9$.

Задача 26.30.

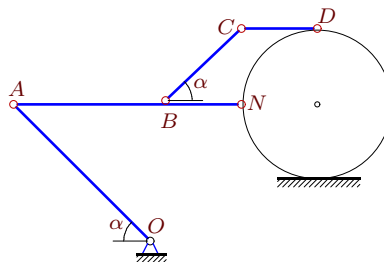
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$\omega_{OA_z} = 3\frac{1}{c}$, $R = 6$, $OA = 8\sqrt{2}$,
 $AB = 6$, $BN = BC = 6$, $CD = 12$, $\alpha = 45^\circ$

Задача 26.32.

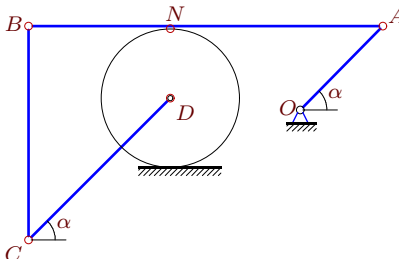
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$\omega_{OA_z} = 5\frac{1}{c}$, $R = 5$, $OA = 9\sqrt{2}$,
 $AB = 10$, $BN = 5$, $BC = 5\sqrt{2}$, $CD = 5$, $\alpha = 45^\circ$

Задача 26.34.

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

Кинематический анализ плоского механизма

№	ω_{AB_z}	ω_{BC_z}	ω_{CD_z}	ω_{DA_z}	$\omega_{диск_z}$
1	0	-4	0	—	-4
2	-2	0	-2	—	0
3	7	23	—	-21	21
4	42	49	42	—	63
5	0	0	—	-1	1
6	6	7	6	—	9
7	-4	7	-4	—	7
8	-15	15	5	—	15
9	0	0	—	-3	3
10	-2	-2	—	-2	-2
11	0	-4	3	—	-4
12	-4	6	-4	—	6
13	35	42	35	—	56
14	5	5	—	5	5
15	-3	-3	—	-3	-3
16	-8	0	-8	—	0
17	1	1	—	-2	4
18	8	-12	8	—	-12
19	-5	8	-5	—	8
20	0	0	—	-2	1
21	0	2	0	—	2
22	8	-11	8	—	-11
23	3	3	—	3	3
24	0	14	7	—	14
25	45	185	—	-135	135
26	-1	0	-1	—	0
27	-1	-1	—	-1	-1
28	-5	3	—	-15	0
29	0	4	2	—	4
30	-4	4	0	—	4
31	-4	8	-4	—	8
32	0	9	0	—	9
33	-2	2	-2	—	2
34	42	49	42	—	63