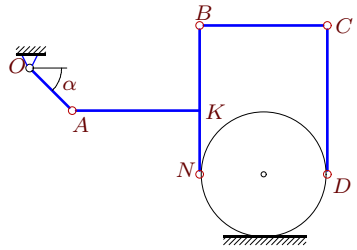
Кинематический анализ плоского механизма

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.

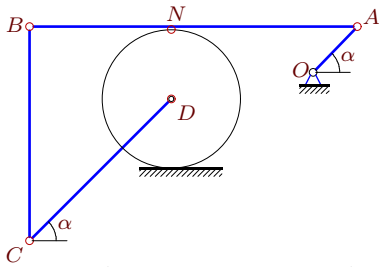
Кирсанов М.Н. **Решебник. Теоретическая механика**/Под ред. А. И. Кириллова.– М.:ФИЗМАТЛИТ, 2008.– 384 с. (с.158.)

Задача 26.1. 47



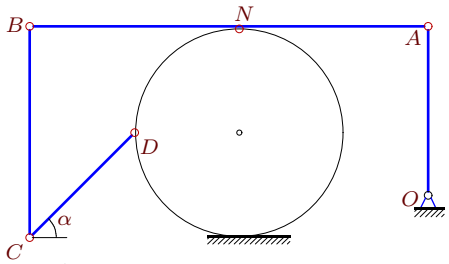
$\omega_{OA_z} = 3\frac{1}{c}$, $R = 3$, $OA = 2\sqrt{2}$,
$AK = 6$, $BK = 4$, $KN = 3$, $CD = 7$, $\alpha = 45°$.

Задача 26.2. 47



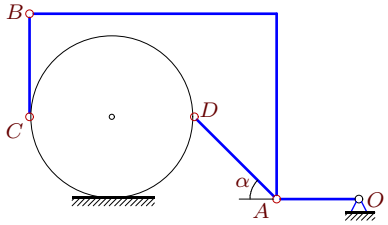
$\omega_{OA_z} = 1008\frac{1}{c}$, $R = 8$, $OA = 5\sqrt{2}$,
$CD = 16\sqrt{2}$, $AN = 21$, $AB = 37$, $\alpha = 45°$.

Задача 26.3. 47



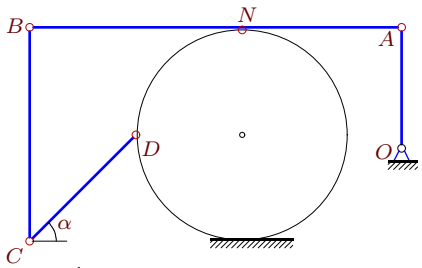
$\omega_{OA_z} = 5\frac{1}{c}$, $R = 5$, $OA = 8$,
$CD = 5\sqrt{2}$, $AN = 9$, $AB = 19$, $\alpha = 45°$.

Задача 26.4. 47



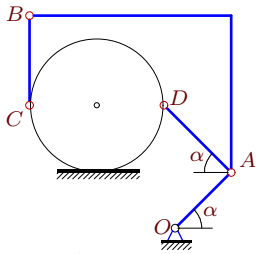
$\omega_{OA_z} = 2\frac{1}{c}$, $R = 4$, $OA = 4$,
$AD = 4\sqrt{2}$, $BC = 5$, $\alpha = 45°$.

Задача 26.5. 47



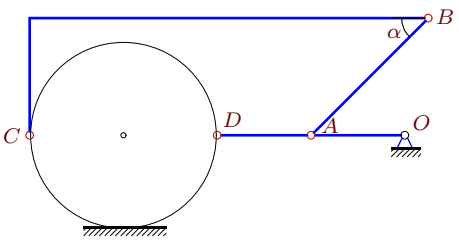
$\omega_{OA_z} = 16\frac{1}{c}$, $R = 8$, $OA = 9$,
$CD = 8\sqrt{2}$, $AN = 12$, $AB = 28$, $\alpha = 45°$.

Задача 26.6. 47



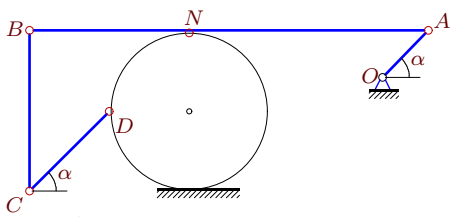
$\omega_{OA_z} = 36\frac{1}{c}$, $R = 6$, $OA = 5\sqrt{2}$,
$AD = 6\sqrt{2}$, $BC = 8$, $\alpha = 45°$.

Задача 26.7. 47



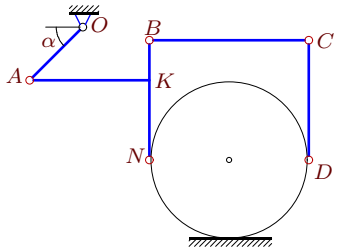
$\omega_{OA_z} = 3\frac{1}{c}$, $R = 4$, $OA = 4$,
$AB = 5\sqrt{2}$, $AD = 4$, $\alpha = 45°$.

Задача 26.8. 47



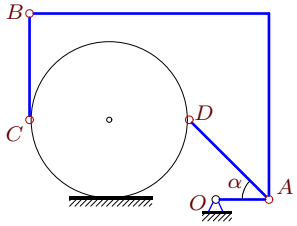
$\omega_{OA_z} = 21\frac{1}{c}$, $R = 7$, $OA = 4\sqrt{2}$,
$CD = 7\sqrt{2}$, $AN = 21$, $AB = 35$, $\alpha = 45°$.

Задача 26.9. 47



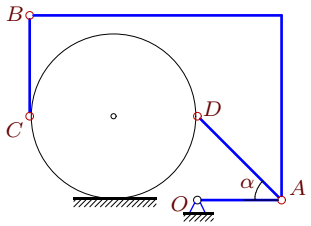
$\omega_{OA_z} = 3\frac{1}{c}$, $R = 6$, $OA = 4\sqrt{2}$,
$AK = 9$, $BK = 3$, $KN = 6$, $CD = 9$, $\alpha = 45°$.

Задача 26.10. 47



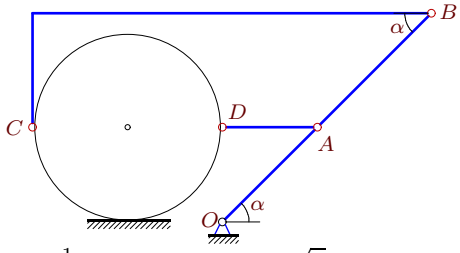
$\omega_{OA_z} = 3\frac{1}{c}$, $R = 6$, $OA = 4$,
$AD = 6\sqrt{2}$, $BC = 8$, $\alpha = 45°$.

Задача 26.11. 47



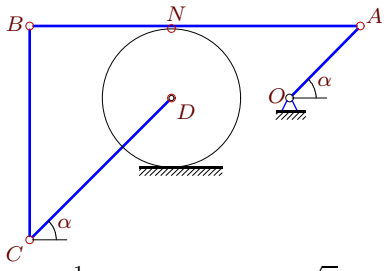
$\omega_{OA_z} = 2\frac{1}{c}$, $R = 5$, $OA = 5$,
$AD = 5\sqrt{2}$, $BC = 6$, $\alpha = 45°$.

Задача 26.12. 47



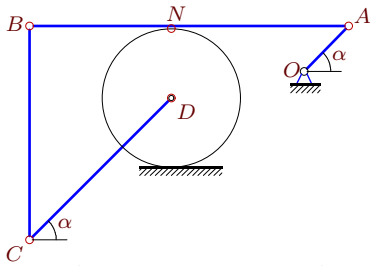
$\omega_{OA_z} = 3\frac{1}{c}$, $R = 5$, $OA = 5\sqrt{2}$,
$AB = 6\sqrt{2}$, $AD = 5$, $\alpha = 45°$.

Задача 26.13. 47



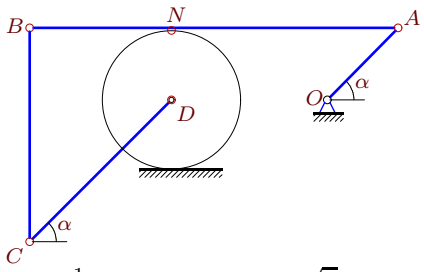
$\omega_{OA_z} = 24\frac{1}{c}$, $R = 6$, $OA = 6\sqrt{2}$,
$CD = 12\sqrt{2}$, $AN = 16$, $AB = 28$, $\alpha = 45°$.

Задача 26.14. 47



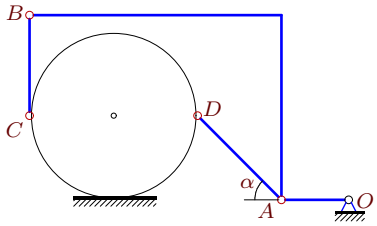
$\omega_{OA_z} = 48\frac{1}{c}$, $R = 8$, $OA = 5\sqrt{2}$,
$CD = 16\sqrt{2}$, $AN = 20$, $AB = 36$, $\alpha = 45°$.

Задача 26.15. 47



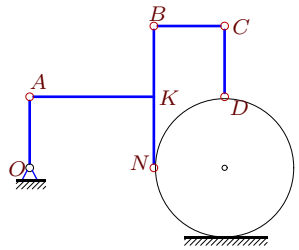
$\omega_{OA_z} = 16\frac{1}{c}$, $R = 5$, $OA = 5\sqrt{2}$,
$CD = 10\sqrt{2}$, $AN = 16$, $AB = 26$, $\alpha = 45°$.

Задача 26.16. 47



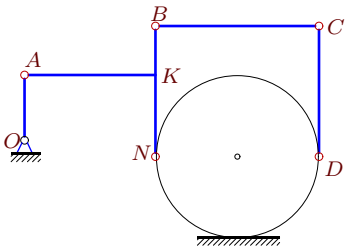
$\omega_{OA_z} = 5\frac{1}{c}$, $R = 5$, $OA = 4$,
$AD = 5\sqrt{2}$, $BC = 6$, $\alpha = 45°$.

Задача 26.17. 47



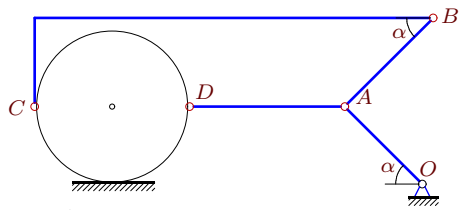
$\omega_{OA_z} = 3\frac{1}{c}$, $R = 4$, $OA = 4$,
$AK = 7$, $BK = 4$, $KN = 4$, $CD = 4$.

Задача 26.18. 47



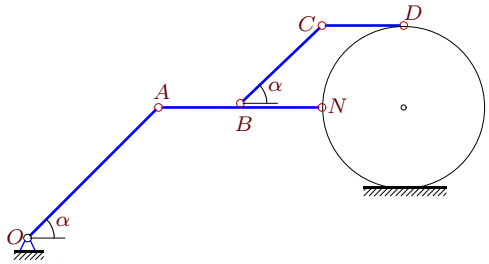
$\omega_{OA_z} = 15\frac{1}{c}$, $R = 5$, $OA = 4$,
$AK = 8$, $BK = 3$, $KN = 5$, $CD = 8$.

Задача 26.19. 47



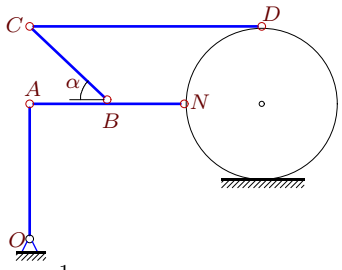
$\omega_{OA_z} = 1\frac{1}{c}$, $R = 7$, $OA = 7\sqrt{2}$,
$AB = 8\sqrt{2}$, $AD = 14$, $\alpha = 45°$.

Задача 26.20. 47



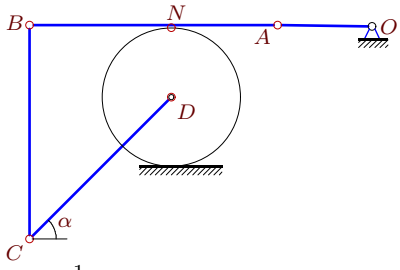
$\omega_{OA_z} = 5\frac{1}{c}$, $R = 5$, $OA = 8\sqrt{2}$,
$AB = 5$, $BN = 5$, $BC = 5\sqrt{2}$, $CD = 5$, α=45°

Задача 26.21. 47



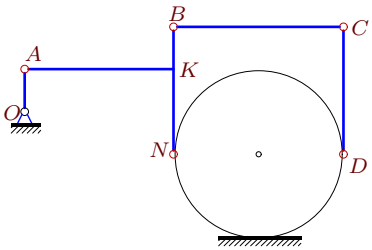
$\omega_{OA_z} = 8\frac{1}{c}$, $R = 4$, $OA = 7$,
$AB = 4$, $BN = 4$, $BC = 4\sqrt{2}$, $CD = 12$, α=45°

Задача 26.22. 47



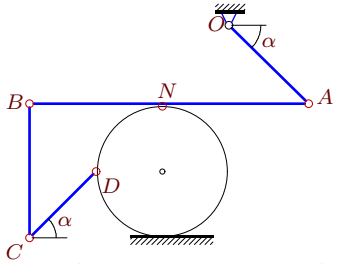
$\omega_{OA_z} = 27\frac{1}{c}$, $R = 6$, $OA = 8$,
$CD = 12\sqrt{2}$, $AN = 9$, $AB = 21$, $\alpha = 45°$.

Задача 26.23. 47



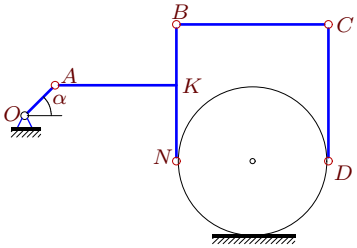
$\omega_{OA_z} = 6\frac{1}{c}$, $R = 4$, $OA = 2$,
$AK = 7$, $BK = 2$, $KN = 4$, $CD = 6$.

Задача 26.24. 47



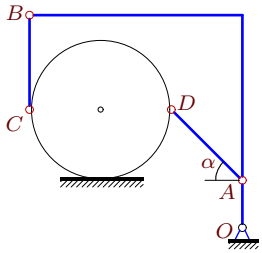
$\omega_{OA_z} = 55\frac{1}{c}$, $R = 5$, $OA = 6\sqrt{2}$,
$CD = 5\sqrt{2}$, $AN = 11$, $AB = 21$, $\alpha = 45°$.

Задача 26.25. 47



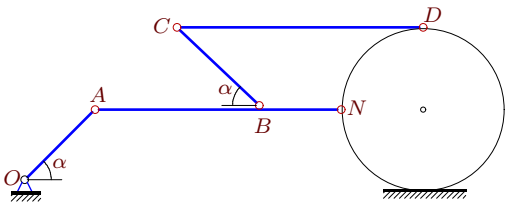
$\omega_{OA_z} = 15\frac{1}{c}$, $R = 5$, $OA = 2\sqrt{2}$,
$AK = 8$, $BK = 4$, $KN = 5$, $CD = 9$, $\alpha = 45°$.

Задача 26.26. 47



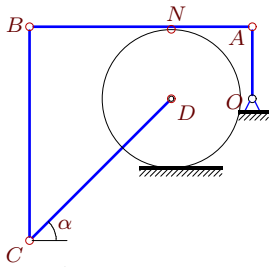
$\omega_{OA_z} = 9\frac{1}{c}$, $R = 6$, $OA = 4$,
$AD = 6\sqrt{2}$, $BC = 8$, $\alpha = 45°$.

Задача 26.27. 47



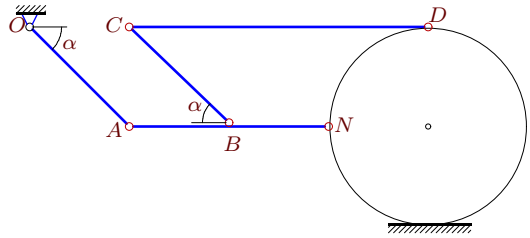
$\omega_{OA_z} = 21\frac{1}{c}$, $R = 7$, $OA = 6\sqrt{2}$,
$AB = 14$, $BN = 7$, $BC = 7\sqrt{2}$, $CD = 21$, α=45°

Задача 26.28. 47



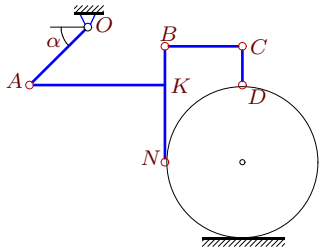
$\omega_{OA_z} = 6\frac{1}{c}$, $R = 7$, $OA = 7$,
$CD = 14\sqrt{2}$, $AN = 8$, $AB = 22$, $\alpha = 45°$.

Задача 26.29.



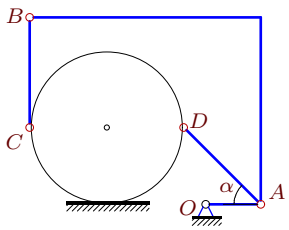
$\omega_{OA_z} = 3\frac{1}{c}$, $R = 4$, $OA = 4\sqrt{2}$,
$AB = 4$, $BN = 4$, $BC = 4\sqrt{2}$, $CD = 12$, α=45°

Задача 26.30.



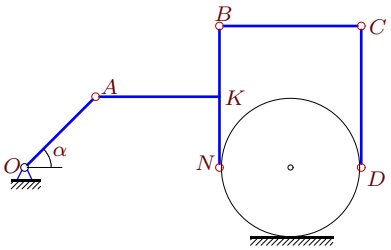
$\omega_{OA_z} = 4\frac{1}{c}$, $R = 4$, $OA = 3\sqrt{2}$,
$AK = 7$, $BK = 2$, $KN = 4$, $CD = 2$, $\alpha = 45°$.

Задача 26.31.



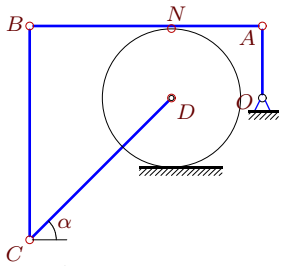
$\omega_{OA_z} = 14\frac{1}{c}$, $R = 7$, $OA = 5$,
$AD = 7\sqrt{2}$, $BC = 10$, $\alpha = 45°$.

Задача 26.32.



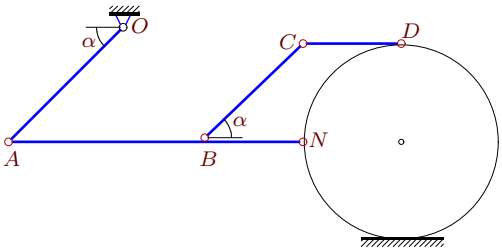
$\omega_{OA_z} = 3\frac{1}{c}$, $R = 4$, $OA = 4\sqrt{2}$,
$AK = 7$, $BK = 4$, $KN = 4$, $CD = 8$, $\alpha = 45°$.

Задача 26.33.



$\omega_{OA_z} = 6\frac{1}{c}$, $R = 7$, $OA = 7$,
$CD = 14\sqrt{2}$, $AN = 9$, $AB = 23$, $\alpha = 45°$.

Задача 26.34.



$\omega_{OA_z} = 18\frac{1}{c}$, $R = 6$, $OA = 7\sqrt{2}$,
$AB = 12$, $BN = 6$, $BC = 6\sqrt{2}$, $CD = 6$, α=45°

26.47

Кинематический анализ плоского механизма

№	ω_{AB_z}	ω_{BC_z}	ω_{CD_z}	ω_{DA_z}	$\omega_{\text{диск}_z}$
1	0	-2	0	–	-2
2	240	265	240	–	315
3	0	0	-4	–	4
4	-1	-1	–	-1	-1
5	0	0	-9	–	9
6	20	35	–	0	30
7	-1	-1	–	-3	0
8	4	4	2	–	6
9	8	-10	8	–	-10
10	1	1	–	1	1
11	1	1	–	1	1
12	2	2	–	0	3
13	9	10	9	–	12
14	12	13	12	–	15
15	5	6	5	–	8
16	-2	-2	–	-2	-2
17	-4	7	-15	–	7
18	-20	32	-20	–	32
19	0	0	–	-1	1
20	-8	8	-8	–	8
21	-7	14	7	–	14
22	-24	-16	-24	–	0
23	-4	7	-4	–	7
24	30	30	93	–	-33
25	-20	26	-20	–	26
26	1	4	–	-3	3
27	-12	18	8	–	18
28	0	1	0	–	3
29	0	-3	-2	–	-3
30	8	-11	46	–	-11
31	5	5	–	5	5
32	-8	11	-8	–	11
33	0	1	0	–	3
34	14	-21	14	–	-21