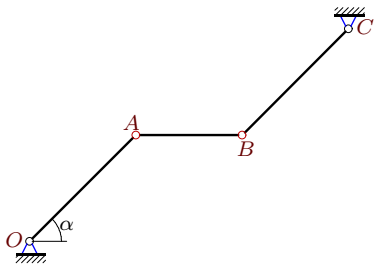
Кинематический анализ механизма. Угловые ускорения

В указанном положении механизма задана постоянная угловая скорость звена OA. Длины звеньев даны в сантиметрах. Звенья, направление которых не указано, принимать вертикальными или горизонтальными. Найти угловые ускорения звеньев AB и BC.

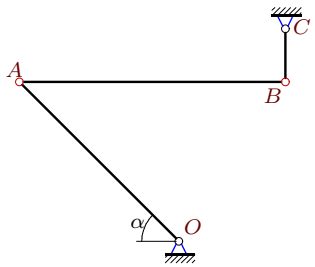
Кирсанов М.Н. **Решебник. Теоретическая механика**/Под ред. А. И. Кириллова.– М.:ФИЗМАТЛИТ, 2008.– 384 с. (с.158.)

Задача 24.1. 7



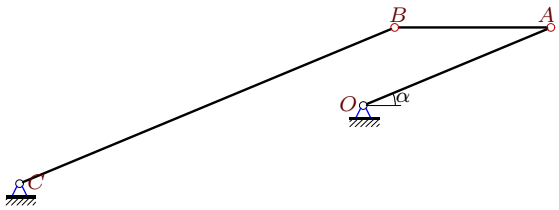
$\omega_{OAz} = -2$ рад/с, $OA \| BC$,
$OA = 2\sqrt{2}$, $AB = 2$, $BC = 2\sqrt{2}$, $\alpha = \pi/4$.

Задача 24.2. 7



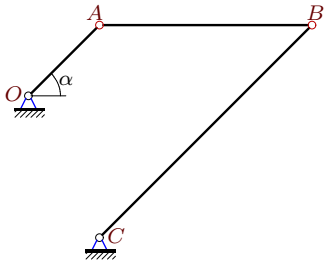
$\omega_{OAz} = 5$ рад/с, $AB \perp BC$,
$OA = 3\sqrt{2}$, $AB = 5$, $BC = 1$, $\alpha = \pi/4$.

Задача 24.3. 7



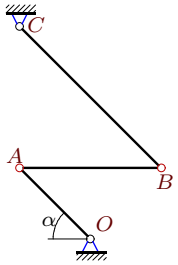
$\omega_{OAz} = -20$ рад/с, $OA \| BC$,
$OA = 13$, $AB = 10$, $BC = 26$, $\operatorname{tg}\alpha = 5/12$.

Задача 24.4. 7



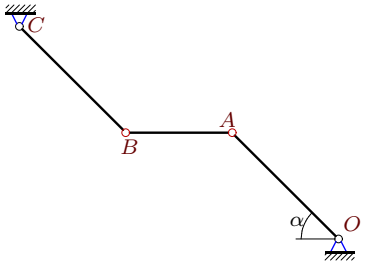
$\omega_{OAz} = 27$ рад/с, $OA \| BC$,
$OA = 3\sqrt{2}$, $AB = 9$, $BC = 9\sqrt{2}$, $\alpha = \pi/4$.

Задача 24.5. 7



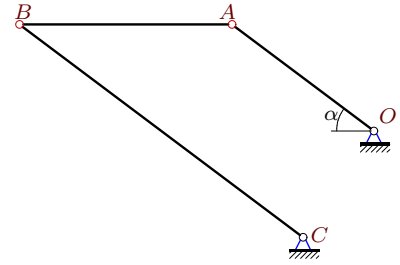
$\omega_{OAz} = -20$ рад/с, $OA \| BC$,
$OA = 5\sqrt{2}$, $AB = 10$, $BC = 10\sqrt{2}$, $\alpha = \pi/4$.

Задача 24.6. 7



$\omega_{OAz} = 3$ рад/с, $OA \| BC$,
$OA = 3\sqrt{2}$, $AB = 3$, $BC = 3\sqrt{2}$, $\alpha = \pi/4$.

Задача 24.7. 7

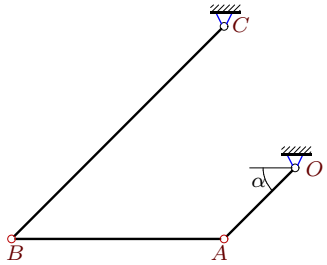


$\omega_{OAz} = -12$ рад/с, $OA \| BC$,
$OA = 5$, $AB = 6$, $BC = 10$, $\operatorname{tg}\alpha = 3/4$.

Задача 24.8. 7

$\omega_{OAz} = -10$ рад/с, $AB \perp BC$,
$OA = 5$, $AB = 10$, $BC = 1$, $\operatorname{tg}\alpha = 4/3$.

Задача 24.9. 7

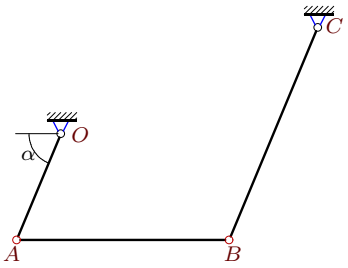


$\omega_{OAz} = -18$ рад/с, $OA \| BC$,
$OA = 2\sqrt{2}$, $AB = 6$, $BC = 6\sqrt{2}$, $\alpha = \pi/4$.

Задача 24.10. 7

$\omega_{OAz} = -10$ рад/с, $AB \perp BC$,
$OA = 3\sqrt{2}$, $AB = 10$, $BC = 1$, $\alpha = \pi/4$.

Задача 24.11. 7

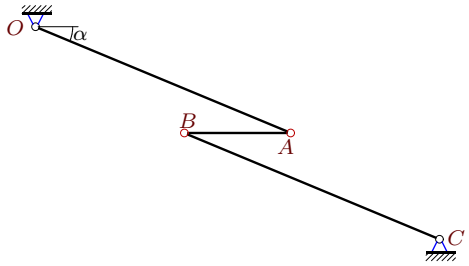


$\omega_{OAz} = 48$ рад/с, $OA \| BC$,
$OA = 13$, $AB = 24$, $BC = 26$, $\operatorname{tg}\alpha = 12/5$.

Задача 24.12. 7

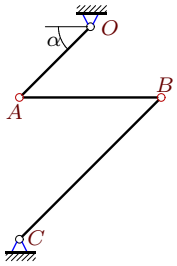
$\omega_{OAz} = -10$ рад/с, $AB \perp BC$,
$OA = 5$, $AB = 10$, $BC = 1$, $\operatorname{tg}\alpha = 3/4$.

Задача 24.13. 7



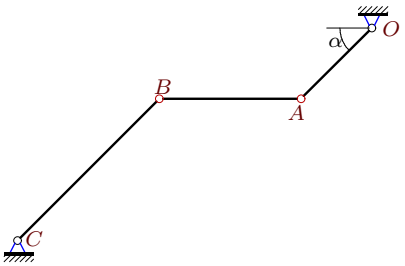
$\omega_{OAz} = 5$ рад/с, $OA \| BC$,
$OA = 13$, $AB = 5$, $BC = 13$, $\operatorname{tg}\alpha = 5/12$.

Задача 24.14. 7



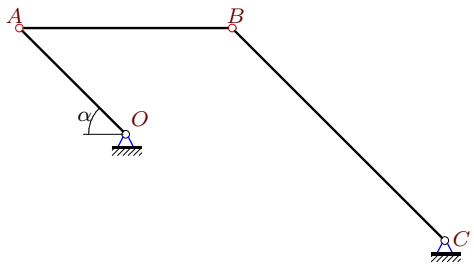
$\omega_{OAz} = -28$ рад/с, $OA \| BC$,
$OA = 7\sqrt{2}$, $AB = 14$, $BC = 14\sqrt{2}$, $\alpha = \pi/4$.

Задача 24.15. 7



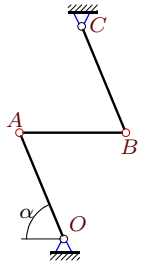
$\omega_{OAz} = 16$ рад/с, $OA \| BC$,
$OA = 4\sqrt{2}$, $AB = 8$, $BC = 8\sqrt{2}$, $\alpha = \pi/4$.

Задача 24.16. 7



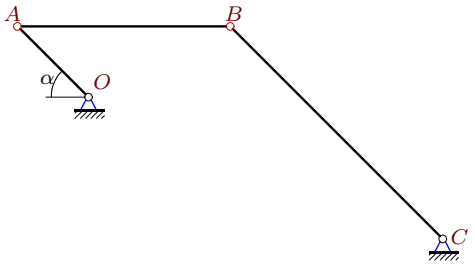
$\omega_{OAz} = 12$ рад/с, $OA \| BC$,
$OA = 3\sqrt{2}$, $AB = 6$, $BC = 6\sqrt{2}$, $\alpha = \pi/4$.

Задача 24.17. 7



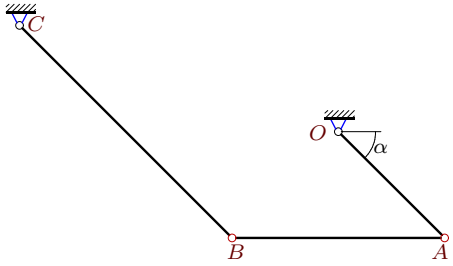
$\omega_{OAz} = -12$ рад/с, $OA||BC$,
$OA = 13$, $AB = 12$, $BC = 13$, $\operatorname{tg}\alpha = 12/5$.

Задача 24.18. 7



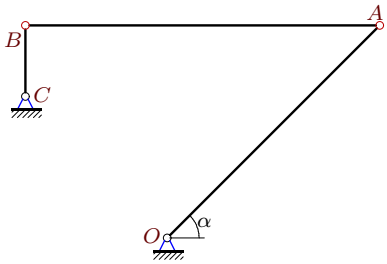
$\omega_{OAz} = 27$ рад/с, $OA||BC$,
$OA = 3\sqrt{2}$, $AB = 9$, $BC = 9\sqrt{2}$, $\alpha = \pi/4$.

Задача 24.19. 7



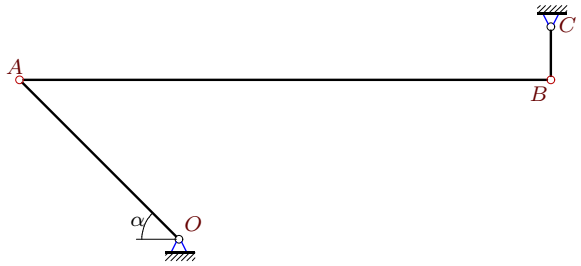
$\omega_{OAz} = -8$ рад/с, $OA||BC$,
$OA = 2\sqrt{2}$, $AB = 4$, $BC = 4\sqrt{2}$, $\alpha = \pi/4$.

Задача 24.20. 7



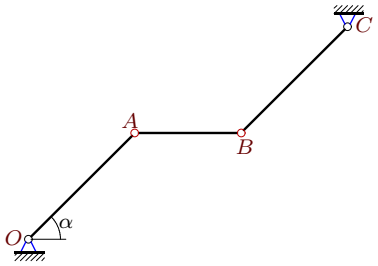
$\omega_{OAz} = -5$ рад/с, $AB \perp BC$,
$OA = 3\sqrt{2}$, $AB = 5$, $BC = 1$, $\alpha = \pi/4$.

Задача 24.21. 7



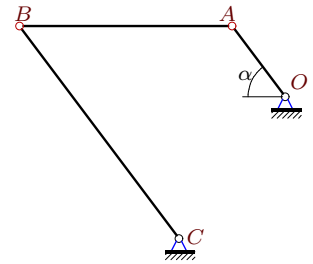
$\omega_{OAz} = 10$ рад/с, $AB \perp BC$,
$OA = 3\sqrt{2}$, $AB = 10$, $BC = 1$, $\alpha = \pi/4$.

Задача 24.22. 7



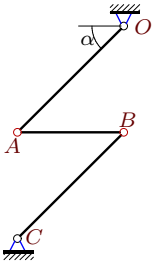
$\omega_{OAz} = -2$ рад/с, $OA||BC$,
$OA = 2\sqrt{2}$, $AB = 2$, $BC = 2\sqrt{2}$, $\alpha = \pi/4$.

Задача 24.23. 7



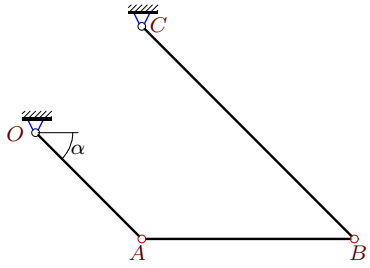
$\omega_{OAz} = -36$ рад/с, $OA||BC$,
$OA = 5$, $AB = 12$, $BC = 15$, $\operatorname{tg}\alpha = 4/3$.

Задача 24.24. 7



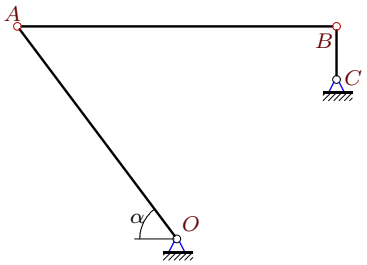
$\omega_{OAz} = -3$ рад/с, $OA||BC$,
$OA = 3\sqrt{2}$, $AB = 3$, $BC = 3\sqrt{2}$, $\alpha = \pi/4$.

Задача 24.25. 7



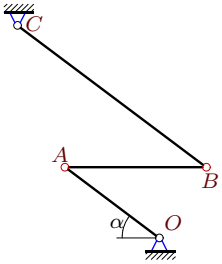
$\omega_{OAz} = 28$ рад/с, $OA||BC$,
$OA = 7\sqrt{2}$, $AB = 14$, $BC = 14\sqrt{2}$, $\alpha = \pi/4$.

Задача 24.26. 7



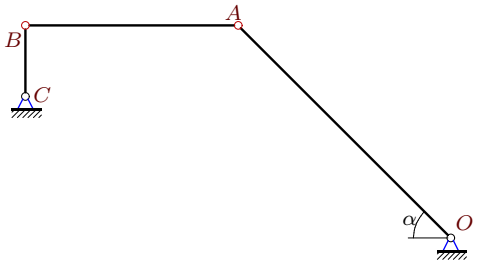
$\omega_{OAz} = 6$ рад/с, $AB \perp BC$,
$OA = 5$, $AB = 6$, $BC = 1$, $\operatorname{tg}\alpha = 4/3$.

Задача 24.27. 7



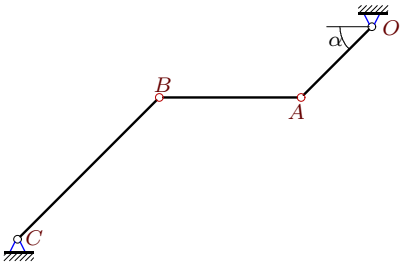
$\omega_{OAz} = -12$ рад/с, $OA||BC$,
$OA = 5$, $AB = 6$, $BC = 10$, $\operatorname{tg}\alpha = 3/4$.

Задача 24.28. 7



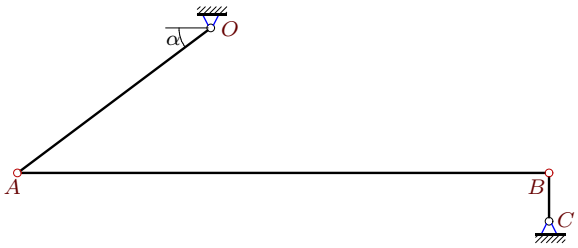
$\omega_{OAz} = -3$ рад/с, $AB \perp BC$,
$OA = 3\sqrt{2}$, $AB = 3$, $BC = 1$, $\alpha = \pi/4$.

Задача 24.29. 7



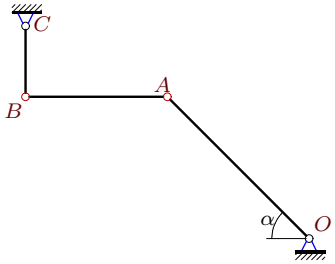
$\omega_{OAz} = 20$ рад/с, $OA||BC$,
$OA = 5\sqrt{2}$, $AB = 10$, $BC = 10\sqrt{2}$, $\alpha = \pi/4$.

Задача 24.30. 7



$\omega_{OAz} = 11$ рад/с, $AB \perp BC$,
$OA = 5$, $AB = 11$, $BC = 1$, $\operatorname{tg}\alpha = 3/4$.

Задача 24.31. 7



$\omega_{OAz} = -2$ рад/с, $AB \perp BC$,
$OA = 2\sqrt{2}$, $AB = 2$, $BC = 1$, $\alpha = \pi/4$.

Задача 24.32. 7

$\omega_{OAz} = 10$ рад/с, $AB \perp BC$,
$OA = 3\sqrt{2}$, $AB = 10$, $BC = 1$, $\alpha = \pi/4$.

24.7

Кинематический анализ механизма. Угловые ускорения

№	ω_{ABz}	ω_{BCz}	ε_{AB}	ε_{BC}
1	0	2	16	8
2	3	-15	60	30
3	0	-10	676	240
4	0	9	324	162
5	0	10	600	300
6	0	-3	36	18
7	0	-6	100	48
8	3	40	200	390
9	0	-6	144	72
10	3	-30	60	390
11	0	24	676	240
12	4	30	120	560
13	0	-5	338	120
14	0	14	1176	588
15	0	-8	384	192
16	0	6	72	36
17	0	12	338	120
18	0	9	324	162
19	0	-4	32	16
20	-3	-15	30	30
21	3	-30	120	210
22	0	2	16	8
23	0	-12	450	216
24	0	3	36	18
25	0	14	392	196
26	3	24	72	54
27	0	6	300	144
28	3	-9	18	54
29	0	-10	600	300
30	4	-33	132	308
31	2	4	12	16
32	-3	30	60	390