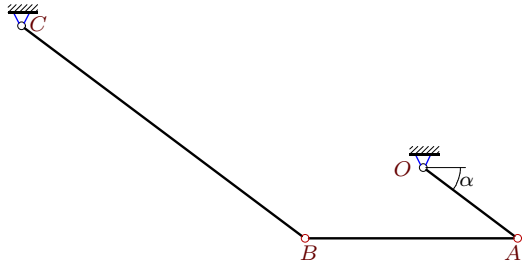
# Кинематический анализ механизма. Угловые ускорения

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 $BC$.

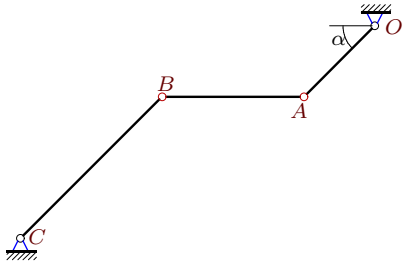
*Кирсанов М.Н.* **Решебник. Теоретическая механика**/Под ред. А. И. Кириллова.– М.:ФИЗМАТЛИТ, 2002.– 384 с. (с.158.)

**Задача 24.1.** 4



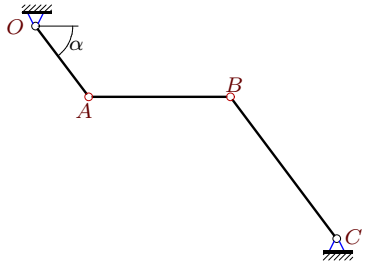

$\omega_{OA} = 27$ рад/с, $OA||BC$,
$OA = 5$, $AB = 9$, $BC = 15$, $\operatorname{tg}\alpha = 3/4$.

**Задача 24.2.** 4



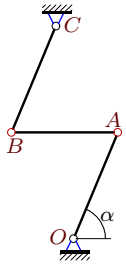

$\omega_{OA} = 20$ рад/с, $OA||BC$,
$OA = 5\sqrt{2}$, $AB = 10$, $BC = 10\sqrt{2}$, $\alpha = \pi/4$.

**Задача 24.3.** 4



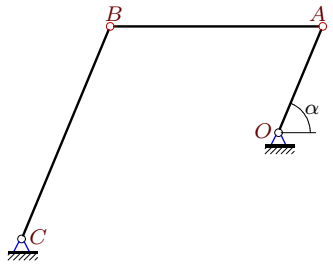

$\omega_{OA} = 16$ рад/с, $OA||BC$,
$OA = 5$, $AB = 8$, $BC = 10$, $\operatorname{tg}\alpha = 4/3$.

**Задача 24.4.** 4



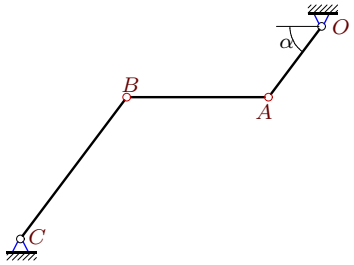

$\omega_{OA} = 12$ рад/с, $OA||BC$,
$OA = 13$, $AB = 12$, $BC = 13$, $\operatorname{tg}\alpha = 12/5$.

**Задача 24.5.** 4



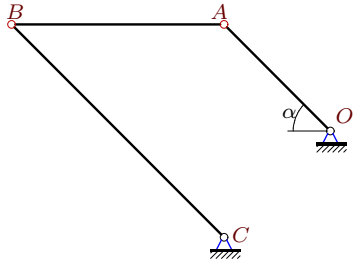

$\omega_{OA} = 48$ рад/с, $OA||BC$,
$OA = 13$, $AB = 24$, $BC = 26$, $\operatorname{tg}\alpha = 12/5$.

**Задача 24.6.** 4



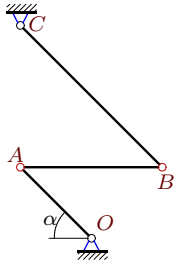

$\omega_{OA} = 16$ рад/с, $OA||BC$,
$OA = 5$, $AB = 8$, $BC = 10$, $\operatorname{tg}\alpha = 4/3$.

**Задача 24.7.** 4



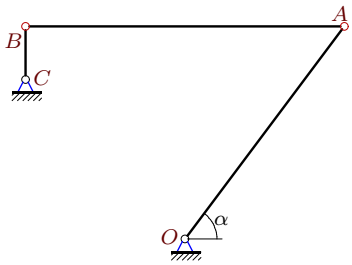

$\omega_{OA} = 8$ рад/с, $OA||BC$,
$OA = 2\sqrt{2}$, $AB = 4$, $BC = 4\sqrt{2}$, $\alpha = \pi/4$.

**Задача 24.8.** 4



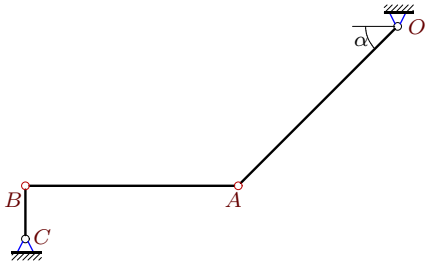

$\omega_{OA} = 24$ рад/с, $OA||BC$,
$OA = 6\sqrt{2}$, $AB = 12$, $BC = 12\sqrt{2}$, $\alpha = \pi/4$.

**Задача 24.9.** 4



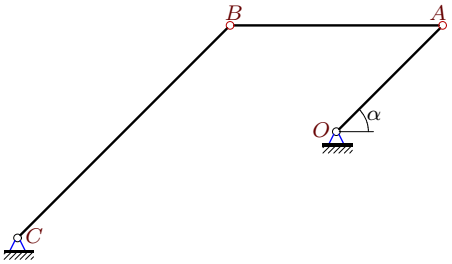

$\omega_{OA} = 6$ рад/с, $AB \perp BC$,
$OA = 5$, $AB = 6$, $BC = 1$, $\operatorname{tg}\alpha = 4/3$.

**Задача 24.10.** 4



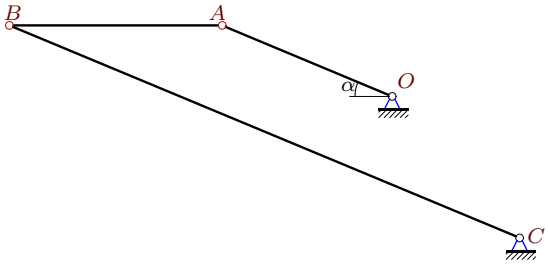

$\omega_{OA} = 4$ рад/с, $AB \perp BC$,
$OA = 3\sqrt{2}$, $AB = 4$, $BC = 1$, $\alpha = \pi/4$.

**Задача 24.11.** 4



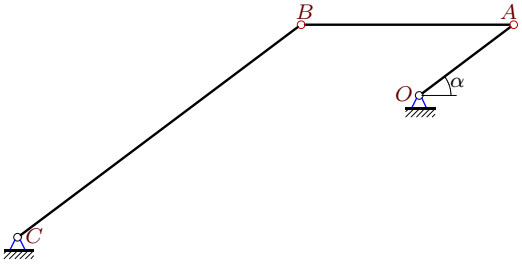

$\omega_{OA} = 16$ рад/с, $OA||BC$,
$OA = 4\sqrt{2}$, $AB = 8$, $BC = 8\sqrt{2}$, $\alpha = \pi/4$.

**Задача 24.12.** 4



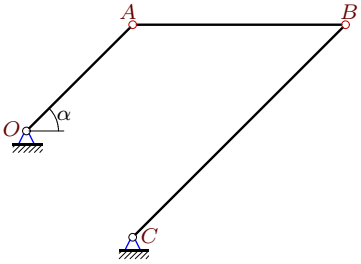

$\omega_{OA} = 45$ рад/с, $OA||BC$,
$OA = 13$, $AB = 15$, $BC = 39$, $\operatorname{tg}\alpha = 5/12$.

**Задача 24.13.** 4



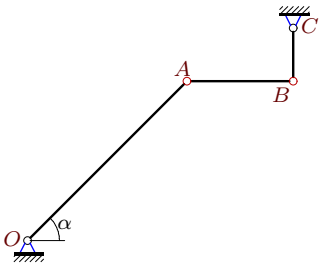

$\omega_{OA} = 27$ рад/с, $OA||BC$,
$OA = 5$, $AB = 9$, $BC = 15$, $\operatorname{tg}\alpha = 3/4$.

**Задача 24.14.** 4



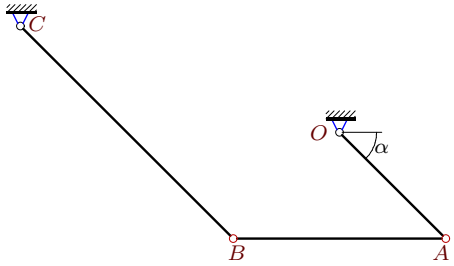

$\omega_{OA} = 20$ рад/с, $OA||BC$,
$OA = 5\sqrt{2}$, $AB = 10$, $BC = 10\sqrt{2}$, $\alpha = \pi/4$.

**Задача 24.15.** 4



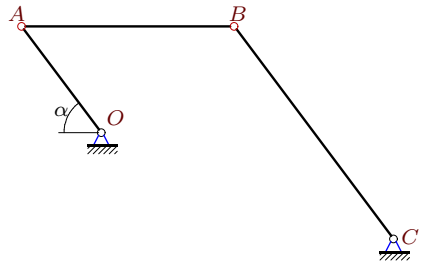

$\omega_{OA} = 2$ рад/с, $AB \perp BC$,
$OA = 3\sqrt{2}$, $AB = 2$, $BC = 1$, $\alpha = \pi/4$.

**Задача 24.16.** 4



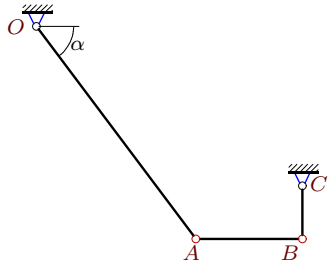

$\omega_{OA} = 12$ рад/с, $OA||BC$,
$OA = 3\sqrt{2}$, $AB = 6$, $BC = 6\sqrt{2}$, $\alpha = \pi/4$.

**Задача 24.17.** 4




$\omega_{OA} = 16$ рад/с, $OA||BC$,
$OA = 5$, $AB = 8$, $BC = 10$, $\operatorname{tg}\alpha = 4/3$.

**Задача 24.18.** 4

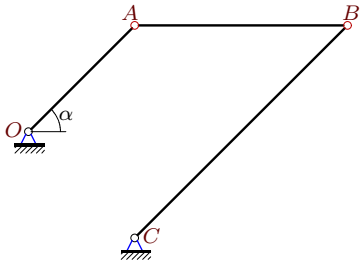



$\omega_{OA} = 2$ рад/с, $AB \perp BC$,
$OA = 5$, $AB = 2$, $BC = 1$, $\operatorname{tg}\alpha = 4/3$.

**Задача 24.19.** 4

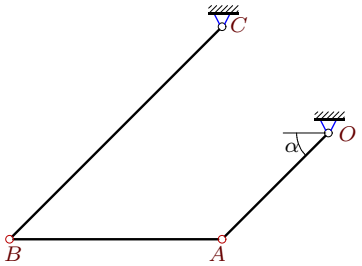

$\omega_{OA} = 10$ рад/с, $AB \perp BC$,
$OA = 2\sqrt{2}$, $AB = 10$, $BC = 1$, $\alpha = \pi/4$.

**Задача 24.20.** 4



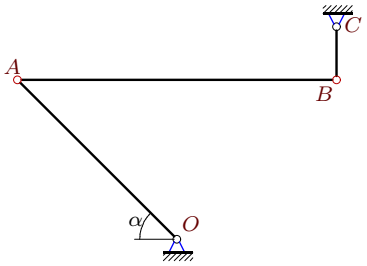

$\omega_{OA} = 12$ рад/с, $OA||BC$,
$OA = 3\sqrt{2}$, $AB = 6$, $BC = 6\sqrt{2}$, $\alpha = \pi/4$.

**Задача 24.21.** 4



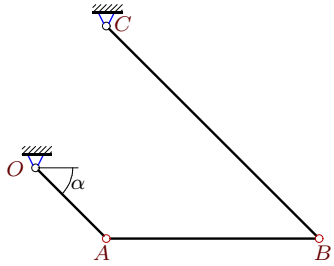

$\omega_{OA} = 8$ рад/с, $OA||BC$,
$OA = 2\sqrt{2}$, $AB = 4$, $BC = 4\sqrt{2}$, $\alpha = \pi/4$.

**Задача 24.22.** 4



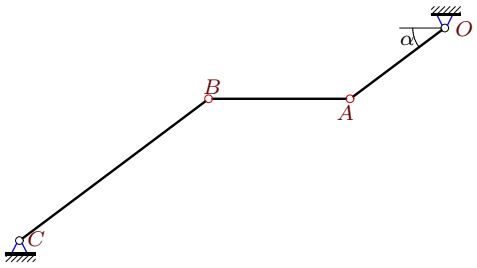

$\omega_{OA} = 6$ рад/с, $AB \perp BC$,
$OA = 3\sqrt{2}$, $AB = 6$, $BC = 1$, $\alpha = \pi/4$.

**Задача 24.23.** 4



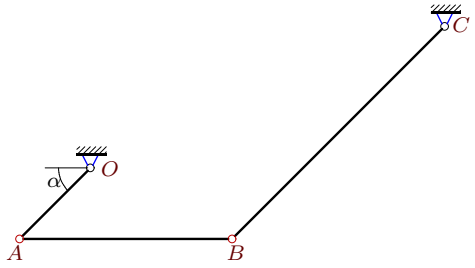

$\omega_{OA} = 18$ рад/с, $OA||BC$,
$OA = 2\sqrt{2}$, $AB = 6$, $BC = 6\sqrt{2}$, $\alpha = \pi/4$.

**Задача 24.24.** 4



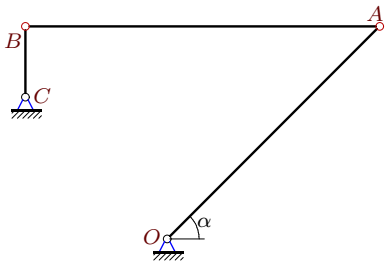

$\omega_{OA} = 12$ рад/с, $OA||BC$,
$OA = 5$, $AB = 6$, $BC = 10$, $\operatorname{tg}\alpha = 3/4$.

**Задача 24.25.** 4



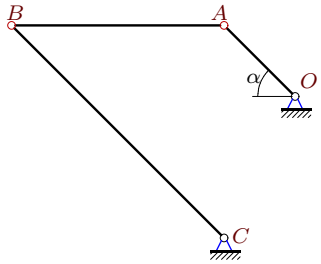

$\omega_{OA} = 27$ рад/с, $OA||BC$,
$OA = 3\sqrt{2}$, $AB = 9$, $BC = 9\sqrt{2}$, $\alpha = \pi/4$.

**Задача 24.26.** 4



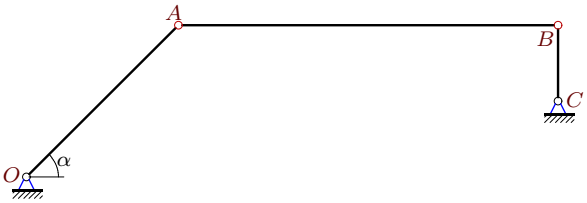

$\omega_{OA} = 5$ рад/с, $AB \perp BC$,
$OA = 3\sqrt{2}$, $AB = 5$, $BC = 1$, $\alpha = \pi/4$.

**Задача 24.27.** 4




$\omega_{OA} = 36$ рад/с, $OA||BC$,
$OA = 4\sqrt{2}$, $AB = 12$, $BC = 12\sqrt{2}$, $\alpha = \pi/4$.

**Задача 24.28.** 4

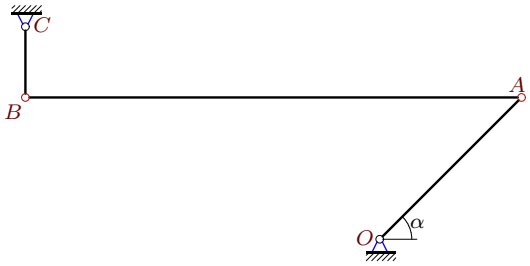



$\omega_{OA} = 5$ рад/с, $AB \perp BC$,
$OA = 2\sqrt{2}$, $AB = 5$, $BC = 1$, $\alpha = \pi/4$.

**Задача 24.29.** 4

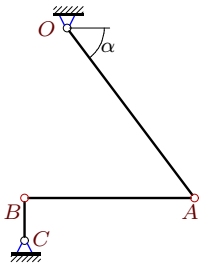

$\omega_{OA} = 10$ рад/с, $AB \perp BC$,
$OA = 5$, $AB = 10$, $BC = 1$, $\operatorname{tg}\alpha = 4/3$.

**Задача 24.30.** 4



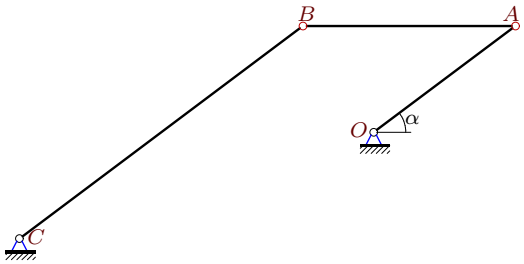

$\omega_{OA} = 7$ рад/с, $AB \perp BC$,
$OA = 2\sqrt{2}$, $AB = 7$, $BC = 1$, $\alpha = \pi/4$.

**Задача 24.31.** 4




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

**Задача 24.32.** 4




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

24.4

# Кинематический анализ механизма. Угловые ускорения

| № | $\omega_{AB}$ | $\omega_{BC}$ | $\varepsilon_{AB}$ | $\varepsilon_{BC}$ |
|---|---|---|---|---|
| 1 | 0 | 9 | 450 | 216 |
| 2 | 0 | 10 | 600 | 300 |
| 3 | 0 | 8 | 300 | 144 |
| 4 | 0 | 12 | 338 | 120 |
| 5 | 0 | 24 | 676 | 240 |
| 6 | 0 | 8 | 300 | 144 |
| 7 | 0 | 4 | 32 | 16 |
| 8 | 0 | 12 | 864 | 432 |
| 9 | 3 | 24 | 72 | 54 |
| 10 | 3 | 12 | 48 | 84 |
| 11 | 0 | 8 | 128 | 64 |
| 12 | 0 | 15 | 3042 | 1080 |
| 13 | 0 | 9 | 450 | 216 |
| 14 | 0 | 10 | 200 | 100 |
| 15 | 3 | 6 | 24 | 30 |
| 16 | 0 | 6 | 72 | 36 |
| 17 | 0 | 8 | 100 | 48 |
| 18 | 3 | 8 | 24 | 30 |
| 19 | 2 | 20 | 60 | 240 |
| 20 | 0 | 6 | 72 | 36 |
| 21 | 0 | 4 | 32 | 16 |
| 22 | 3 | 18 | 72 | 54 |
| 23 | 0 | 6 | 144 | 72 |
| 24 | 0 | 6 | 300 | 144 |
| 25 | 0 | 9 | 324 | 162 |
| 26 | 3 | 15 | 30 | 30 |
| 27 | 0 | 12 | 576 | 288 |
| 28 | 2 | 10 | 10 | 70 |
| 29 | 3 | 40 | 200 | 390 |
| 30 | 2 | 14 | 42 | 70 |
| 31 | 3 | 16 | 80 | 12 |
| 32 | 0 | 6 | 100 | 48 |