

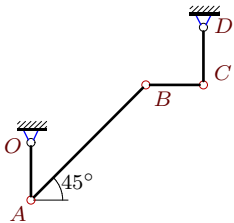
Уравнение трех угловых ускорений. Две степени свободы

В указанном положении механизма заданы угловые скорости (с^{-1}) и ускорения (с^{-2}) двух звеньев. Длины звеньев даны в сантиметрах. Звенья, направление которых не указано, принимать вертикальными или горизонтальными. Найти угловые ускорения звеньев механизма.

Кирсанов М.Н. **Решебник. Теоретическая механика**/Под ред. А. И. Кириллова. – М.: ФИЗМАТЛИТ, 2008. – 384 с. (с.183.)

Задача К-20.1.

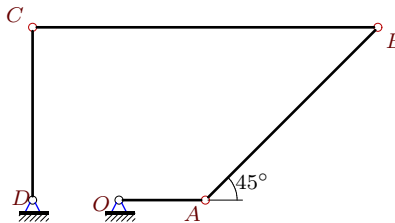
Аббуд Карам Али



$$\begin{aligned} \omega_{OAz} &= 2, \quad \omega_{BCz} = -2, \\ \varepsilon_{BCz} &= 8, \quad \varepsilon_{CDz} = 4, \\ OA &= 1, \quad AB = 2\sqrt{2}, \quad BC = CD = 1. \end{aligned}$$

Задача К-20.2.

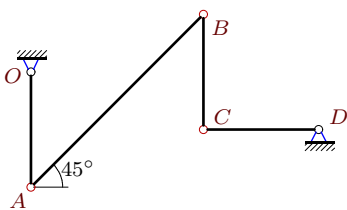
Богомолова Арина



$$\begin{aligned} \omega_{BCz} &= -2, \quad \omega_{CDz} = 0, \\ \varepsilon_{BCz} &= -14, \quad \varepsilon_{CDz} = -8, \\ OA &= 1, \quad AB = 2\sqrt{2}, \quad BC = 4, \quad CD = 2. \end{aligned}$$

Задача К-20.3.

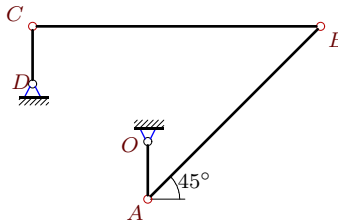
Долгушев Алексей



$$\begin{aligned} \omega_{OAz} &= 6, \quad \omega_{BCz} = -6, \\ \varepsilon_{OAz} &= 6, \quad \varepsilon_{BCz} = -72, \\ OA &= 2, \quad AB = 3\sqrt{2}, \quad BC = CD = 2. \end{aligned}$$

Задача К-20.4.

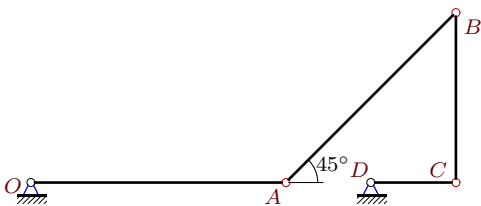
Зайцев Сергей



$$\begin{aligned} \omega_{OAz} &= -15, \quad \omega_{BCz} = 0, \\ \varepsilon_{BCz} &= 93, \quad \varepsilon_{CDz} = 0, \\ OA = CD &= 1, \quad AB = 3\sqrt{2}, \quad BC = 5. \end{aligned}$$

Задача К-20.5.

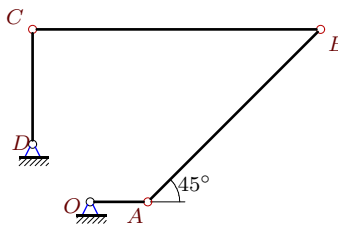
Исаев Илья



$$\begin{aligned} \omega_{OAz} &= \omega_{CDz} = 4, \\ \varepsilon_{BCz} &= 20, \quad \varepsilon_{CDz} = 0, \\ OA &= 3, \quad AB = 2\sqrt{2}, \quad BC = 2, \quad CD = 1. \end{aligned}$$

Задача К-20.6.

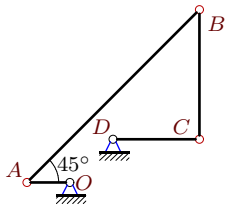
Камынин Даниил



$$\begin{aligned} \omega_{OAz} &= -15, \quad \omega_{CDz} = 30, \\ \varepsilon_{BCz} &= -87, \quad \varepsilon_{CDz} = -15, \\ OA &= 1, \quad AB = 3\sqrt{2}, \quad BC = 5, \quad CD = 2. \end{aligned}$$

Задача К-20.7.

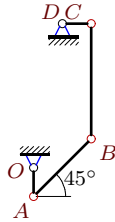
Коршиков Максим



$$\begin{aligned} \omega_{OAz} &= 12, \quad \omega_{CDz} = 0, \\ \varepsilon_{OAz} &= -12, \quad \varepsilon_{BCz} = -28, \\ OA &= 1, \quad AB = 4\sqrt{2}, \quad BC = 3, \quad CD = 2. \end{aligned}$$

Задача К-20.8.

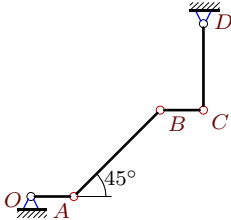
Кузнецов Иван



$$\begin{aligned} \omega_{BCz} &= -2, \quad \omega_{CDz} = 0, \\ \varepsilon_{OAz} &= -16, \quad \varepsilon_{CDz} = -8, \\ OA &= CD = 1, \quad AB = 2\sqrt{2}, \quad BC = 4. \end{aligned}$$

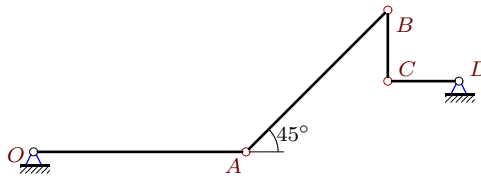
Задача К-20.9.

Куренкова Виктория



$$\begin{aligned} \omega_{OAz} &= 2, \quad \omega_{CDz} = 0, \\ \varepsilon_{OAz} &= 0, \quad \varepsilon_{CDz} = 4, \\ OA &= BC = 1, \quad AB = 2\sqrt{2}, \quad CD = 2. \end{aligned}$$

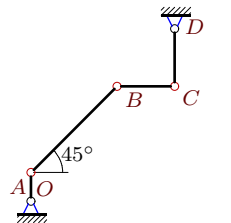
Задача К-20.10. *Лысенкова Анастасия*



$$\begin{aligned} \omega_{OAz} &= \omega_{CDz} = 2, \\ \varepsilon_{OAz} &= \varepsilon_{BCz} = 4, \\ OA &= 3, \quad AB = 2\sqrt{2}, \quad BC = CD = 1. \end{aligned}$$

Задача К-20.11.

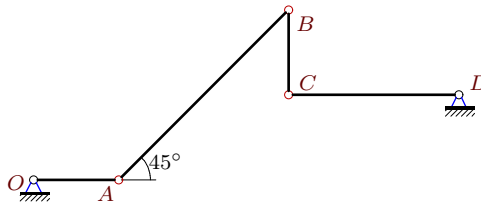
Львов Дмитрий



$$\begin{aligned} \omega_{BCz} &= -9, \quad \omega_{CDz} = -12, \\ \varepsilon_{BCz} &= 348, \quad \varepsilon_{CDz} = 0, \\ OA &= 1, \quad AB = 3\sqrt{2}, \quad BC = CD = 2. \end{aligned}$$

Задача К-20.12.

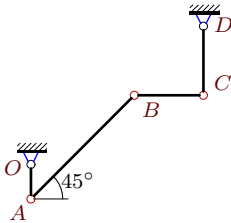
Маликова Регина



$$\begin{aligned} \omega_{BCz} &= -2, \quad \omega_{CDz} = 0, \\ \varepsilon_{OAz} &= 0, \quad \varepsilon_{CDz} = 4, \\ OA &= BC = 1, \quad AB = 2\sqrt{2}, \quad CD = 2. \end{aligned}$$

Задача К-20.13.

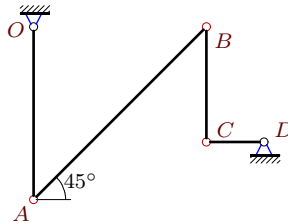
Манев Илья



$$\begin{aligned} \omega_{OAz} &= 6, \quad \omega_{BCz} = -3, \\ \varepsilon_{BCz} &= 0, \quad \varepsilon_{CDz} = 6, \\ OA &= 1, \quad AB = 3\sqrt{2}, \quad BC = CD = 2. \end{aligned}$$

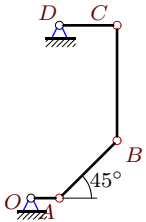
Задача К-20.14.

Опрокиднёв Эрнст



$$\begin{aligned} \omega_{OAz} &= 6, \quad \omega_{BCz} = -6, \\ \varepsilon_{OAz} &= 12, \quad \varepsilon_{BCz} = -81, \\ OA &= 3, \quad AB = 3\sqrt{2}, \quad BC = 2, \quad CD = 1. \end{aligned}$$

Задача К-20.15. Пошибаев Алексей

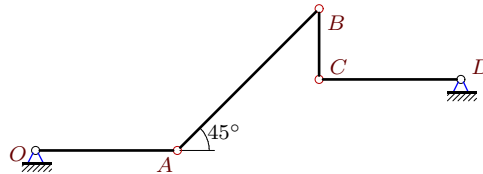


$$\omega_{OAz} = -8, \omega_{BCz} = 6,$$

$$\varepsilon_{BCz} = -64, \varepsilon_{CDz} = -16,$$

$$OA = 1, AB = 2\sqrt{2}, BC = 4, CD = 2.$$

Задача К-20.16. Привезенов Николай

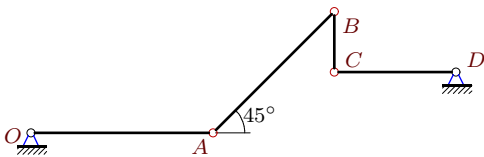


$$\omega_{BCz} = -12, \omega_{CDz} = 4,$$

$$\varepsilon_{OAz} = \varepsilon_{CDz} = 2,$$

$$OA = CD = 2, AB = 2\sqrt{2}, BC = 1.$$

Задача К-20.17. Пышкина Инна

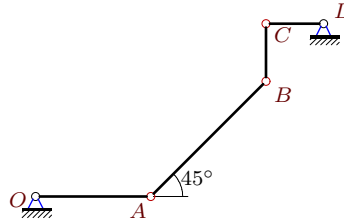


$$\omega_{BCz} = 2, \omega_{CDz} = -4,$$

$$\varepsilon_{OAz} = 4, \varepsilon_{BCz} = 36,$$

$$OA = 3, AB = 2\sqrt{2}, BC = 1, CD = 2.$$

Задача К-20.18. Рашитов Данил

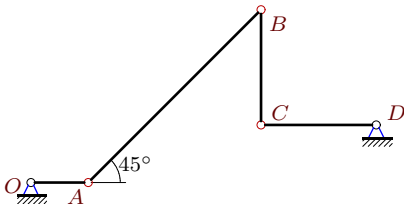


$$\omega_{OAz} = -2, \omega_{CDz} = 0,$$

$$\varepsilon_{OAz} = -2, \varepsilon_{CDz} = 2,$$

$$OA = 2, AB = 2\sqrt{2}, BC = CD = 1.$$

Задача К-20.19. Свиридов Георгий

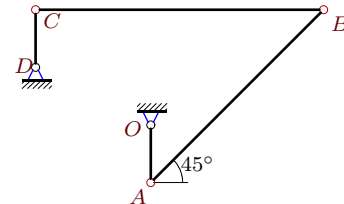


$$\omega_{OAz} = 6, \omega_{BCz} = -15,$$

$$\varepsilon_{BCz} = 225, \varepsilon_{CDz} = 12,$$

$$OA = 1, AB = 3\sqrt{2}, BC = CD = 2.$$

Задача К-20.20. Скляр Никита

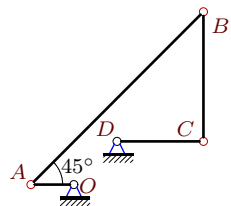


$$\omega_{BCz} = -3, \omega_{CDz} = 0,$$

$$\varepsilon_{BCz} = 18, \varepsilon_{CDz} = -15,$$

$$OA = CD = 1, AB = 3\sqrt{2}, BC = 5.$$

Задача К-20.21. Телицын Данил

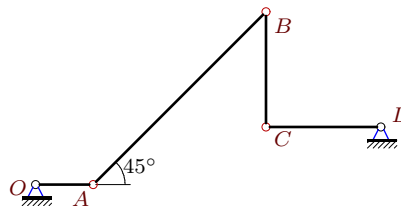


$$\omega_{OAz} = 12, \omega_{BCz} = 4,$$

$$\varepsilon_{OAz} = -12, \varepsilon_{BCz} = -52,$$

$$OA = 1, AB = 4\sqrt{2}, BC = 3, CD = 2.$$

Задача К-20.22. Ковалев Д.



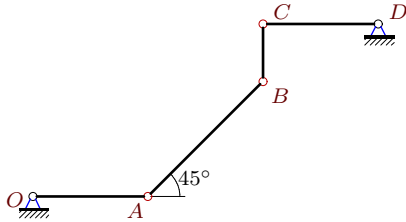
$$\omega_{OAz} = 6, \omega_{CDz} = 0,$$

$$\varepsilon_{OAz} = 0, \varepsilon_{CDz} = 6,$$

$$OA = 1, AB = 3\sqrt{2}, BC = CD = 2.$$

Задача К-20.23.

Трякин Михаил



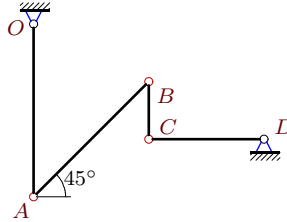
$$\omega_{OAz} = -2, \omega_{BCz} = 4,$$

$$\varepsilon_{BCz} = -72, \varepsilon_{CDz} = 2,$$

$$OA = CD = 2, AB = 2\sqrt{2}, BC = 1.$$

Задача К-20.24.

Шибин Руслан



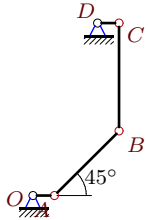
$$\omega_{BCz} = 2, \omega_{CDz} = -4,$$

$$\varepsilon_{BCz} = 72, \varepsilon_{CDz} = -2,$$

$$OA = 3, AB = 2\sqrt{2}, BC = 1, CD = 2.$$

Задача К-20.25.

Штыленко Антон



$$\omega_{BCz} = -6, \omega_{CDz} = 15,$$

$$\varepsilon_{BCz} = -147, \varepsilon_{CDz} = -30,$$

$$OA = CD = 1, AB = 3\sqrt{2}, BC = 5.$$