

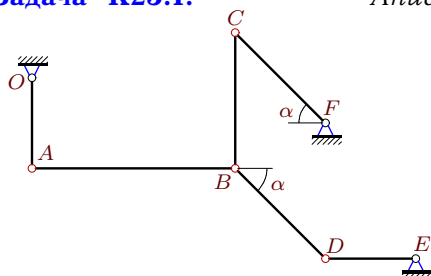
## Механизм с двумя степенями свободы

В указанном положении механизма заданы угловые скорости двух его звеньев. Длины звеньев даны в сантиметрах. Стержни, направление которых не указано, считать горизонтальными или вертикальными. 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 К25.1.

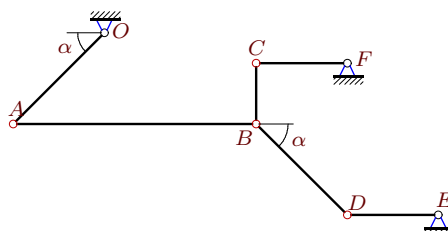
Анисимова Полина



$$\omega_{OA_z} = 9\frac{1}{c}, \omega_{DE_z} = -9\frac{1}{c}, AB = 9, BC = 6, DE = 4, OA = 4, CF = BD = 4\sqrt{2}, \alpha = 45^\circ.$$

### Задача К25.2.

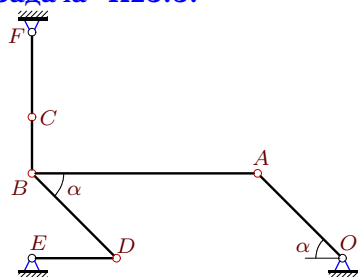
Анохин Дмитрий



$$\omega_{OA_z} = 2\frac{1}{c}, \omega_{CF_z} = -6\frac{1}{c}, AB = 8, BC = 2, DE = 3, CF = 3, OA = BD = 3\sqrt{2}, \alpha = 45^\circ.$$

### Задача К25.3.

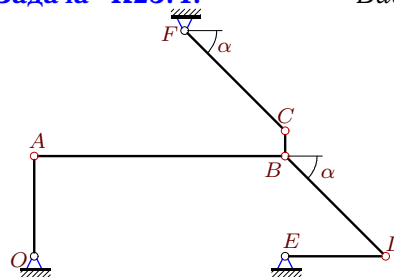
Арефьева Катя



$$\omega_{CF_z} = 16\frac{1}{c}, \omega_{DE_z} = 8\frac{1}{c}, AB = 8, BC = 2, DE = 3, CF = 3, OA = BD = 3\sqrt{2}, \alpha = 45^\circ.$$

### Задача К25.4.

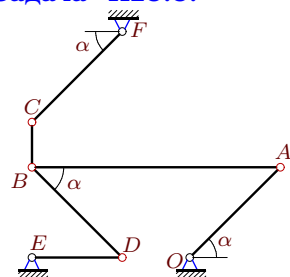
Васильев Владислав



$$\omega_{OA_z} = -5\frac{1}{c}, \omega_{DE_z} = -15\frac{1}{c}, AB = 10, BC = 1, DE = 4, OA = 4, CF = BD = 4\sqrt{2}, \alpha = 45^\circ.$$

### Задача К25.5.

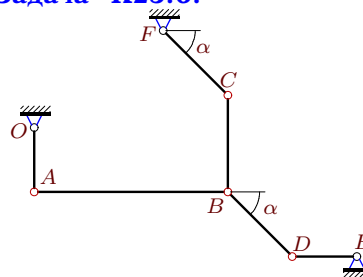
Гарифов Руслан



$$\omega_{CF_z} = -33\frac{1}{c}, \omega_{DE_z} = 11\frac{1}{c}, AB = 11, BC = 2, DE = 4, OA = CF = BD = 4\sqrt{2}, \alpha = 45^\circ.$$

### Задача К25.6.

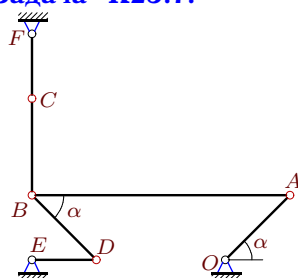
Глаголева Алена



$$\omega_{OA_z} = 3\frac{1}{c}, \omega_{CF_z} = -3\frac{1}{c}, AB = 6, BC = 3, DE = 2, OA = 2, CF = BD = 2\sqrt{2}, \alpha = 45^\circ.$$

### Задача К25.7.

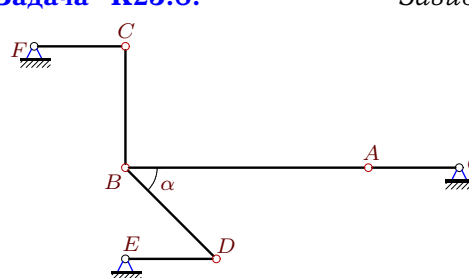
Ефимов Костя



$$\omega_{OA_z} = 4\frac{1}{c}, \omega_{CF_z} = -4\frac{1}{c}, AB = 8, BC = 3, DE = 2, CF = 2, OA = BD = 2\sqrt{2}, \alpha = 45^\circ.$$

### Задача К25.8.

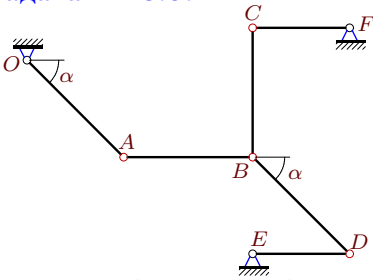
Завидный Антон



$$\omega_{OA_z} = 1\frac{1}{c}, \omega_{DE_z} = -1\frac{1}{c}, AB = 8, BC = 4, DE = 3, OA = 3, CF = 3, BD = 3\sqrt{2}, \alpha = 45^\circ.$$

**Задача K25.9.**

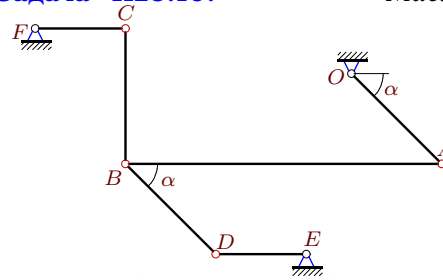
Колякина Лида



$$\omega_{OA_z} = -4\frac{1}{c}, \omega_{CF_z} = 4\frac{1}{c}, AB = 4, BC = 4, DE = 3, CF = 3, OA = BD = 3\sqrt{2}, \alpha = 45^\circ.$$

**Задача K25.10.**

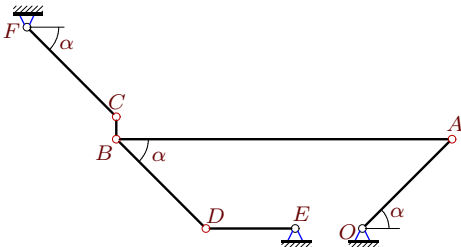
Масленков Антон



$$\omega_{OA_z} = 21\frac{1}{c}, \omega_{DE_z} = -21\frac{1}{c}, AB = 7, BC = 3, DE = 2, CF = 2, OA = BD = 2\sqrt{2}, \alpha = 45^\circ.$$

**Задача K25.11.**

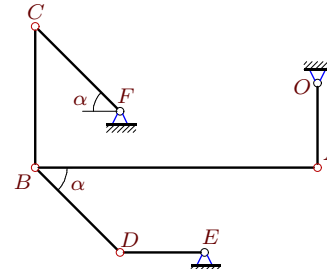
Павлов Роман



$$\omega_{CF_z} = -10\frac{1}{c}, \omega_{DE_z} = 5\frac{1}{c}, AB = 15, BC = 1, DE = 4, OA = CF = BD = 4\sqrt{2}, \alpha = 45^\circ.$$

**Задача K25.12.**

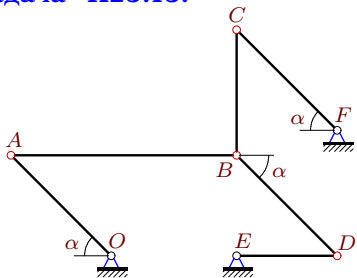
Пай Артем



$$\omega_{OA_z} = -10\frac{1}{c}, \omega_{DE_z} = -20\frac{1}{c}, AB = 10, BC = 5, DE = 3, OA = 3, CF = BD = 3\sqrt{2}, \alpha = 45^\circ.$$

**Задача K25.13.**

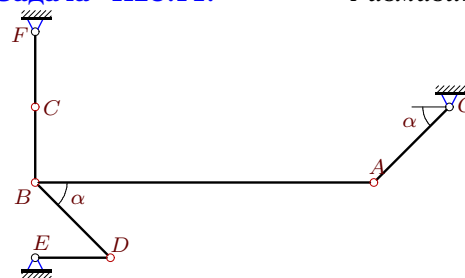
Попов Иван



$$\omega_{OA_z} = \omega_{DE_z} = 45\frac{1}{c}, AB = 9, BC = 5, DE = 4, OA = CF = BD = 4\sqrt{2}, \alpha = 45^\circ.$$

**Задача K25.14.**

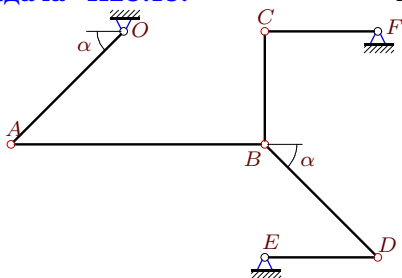
Размазин Александр



$$\omega_{OA_z} = 9\frac{1}{c}, \omega_{CF_z} = -18\frac{1}{c}, AB = 9, BC = 2, DE = 2, CF = 2, OA = BD = 2\sqrt{2}, \alpha = 45^\circ.$$

**Задача K25.15.**

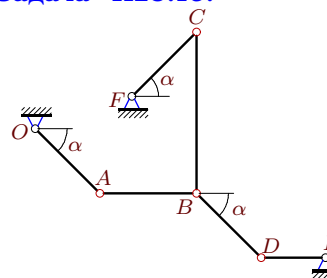
Руднев Никита



$$\omega_{OA_z} = -9\frac{1}{c}, \omega_{CF_z} = -18\frac{1}{c}, AB = 9, BC = 4, DE = 4, CF = 4, OA = BD = 4\sqrt{2}, \alpha = 45^\circ.$$

**Задача K25.16.**

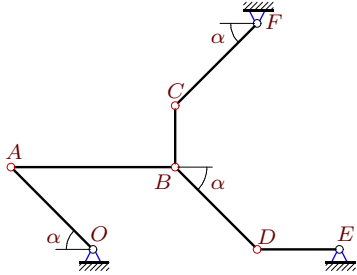
Светушков Алексей



$$\omega_{CF_z} = \omega_{DE_z} = 15\frac{1}{c}, AB = 3, BC = 5, DE = 2, OA = CF = BD = 2\sqrt{2}, \alpha = 45^\circ.$$

**Задача K25.17.**

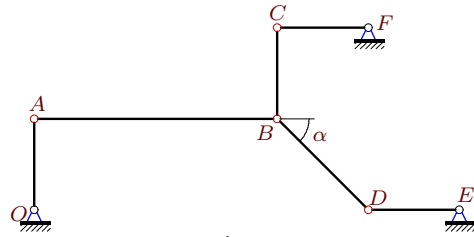
Степанишин Дмитрий



$$\omega_{CF_z} = 12\frac{1}{c}, \omega_{DE_z} = -6\frac{1}{c}, AB = 8, BC = 3, DE = 4, OA = CF = BD = 4\sqrt{2}, \alpha = 45^\circ.$$

**Задача K25.18.**

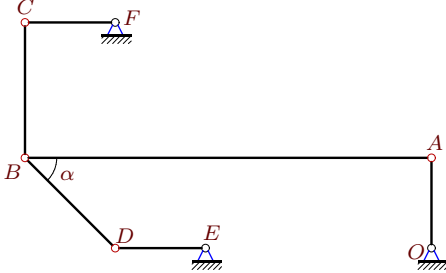
Ульянова Катя



$$\omega_{OA_z} = \omega_{DE_z} = 4\frac{1}{c}, AB = 8, BC = 3, DE = 3, OA = 3, CF = 3, BD = 3\sqrt{2}, \alpha = 45^\circ.$$

**Задача K25.19.**

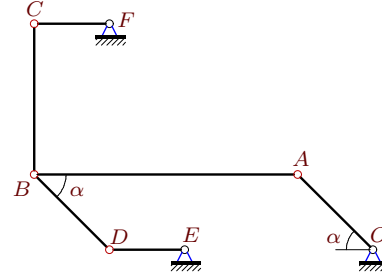
Фомин Владислав



$$\omega_{OA_z} = -9\frac{1}{c}, \omega_{CF_z} = 18\frac{1}{c}, AB = 9, BC = 3, DE = 2, OA = 2, CF = 2, BD = 2\sqrt{2}, \alpha = 45^\circ.$$

**Задача K25.20.**

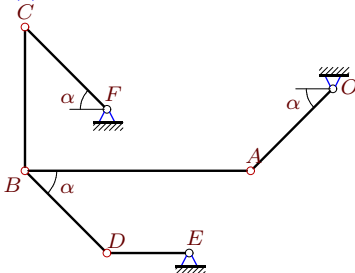
Харизин Роман



$$\omega_{OA_z} = -14\frac{1}{c}, \omega_{CF_z} = -42\frac{1}{c}, AB = 7, BC = 4, DE = 2, CF = 2, OA = BD = 2\sqrt{2}, \alpha = 45^\circ.$$

**Задача K25.21.**

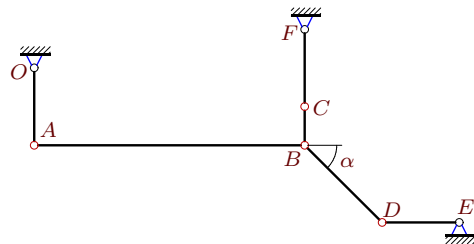
Яременко Сергей



$$\omega_{CF_z} = -231\frac{1}{c}, \omega_{DE_z} = -77\frac{1}{c}, AB = 11, BC = 7, DE = 4, OA = CF = BD = 4\sqrt{2}, \alpha = 45^\circ.$$

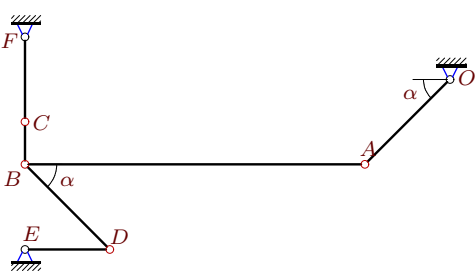
**Задача K25.22.**

Кишкин Евгений



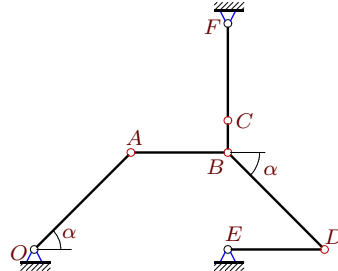
$$\omega_{CF_z} = 3\frac{1}{c}, \omega_{DE_z} = 1\frac{1}{c}, AB = 7, BC = 1, DE = 2, OA = 2, CF = 2, BD = 2\sqrt{2}, \alpha = 45^\circ.$$

**Задача K25.23.**



$$\omega_{CF_z} = -12\frac{1}{c}, \omega_{DE_z} = -4\frac{1}{c}, AB = 8, BC = 1, DE = 2, CF = 2, OA = BD = 2\sqrt{2}, \alpha = 45^\circ.$$

**Задача K25.24.**



$$\omega_{CF_z} = 2\frac{1}{c}, \omega_{DE_z} = -1\frac{1}{c}, AB = 3, BC = 1, DE = 3, CF = 3, OA = BD = 3\sqrt{2}, \alpha = 45^\circ.$$

**К25 Ответы.**  
**Механизм с двумя степенями свободы**

29.03.2012

| №  | $\omega_{OA}$ | $\omega_{AB}$ | $\omega_{BC}$ | $\omega_{FC}$ | $\omega_{DB}$ | $\omega_{DE}$ |                    |
|----|---------------|---------------|---------------|---------------|---------------|---------------|--------------------|
| 1  | —             | 8             | —6            | —18           | —9            | —             | Анисимова Полина   |
| 2  | —             | 3             | 3             | —             | —2            | —4            | Анохин Дмитрий     |
| 3  | 8             | —3            | —36           | —             | 8             | —             | Арефьева Катя      |
| 4  | —             | —4            | 60            | —10           | —5            | —             | Васильев Владислав |
| 5  | —22           | —20           | 110           | —             | —22           | —             | Гарифов Руслан     |
| 6  | —             | —1            | 4             | —             | —3            | 6             | Глаголева Алена    |
| 7  | —             | 1             | 0             | —             | 4             | 4             | Ефимов Костя       |
| 8  | —             | 0             | 0             | —1            | 0             | —             | Завидный Антон     |
| 9  | —             | 0             | —3            | —             | 4             | 0             | Колякина Лида      |
| 10 | —             | —6            | 14            | 42            | —21           | —             | Масленков Антон    |
| 11 | 5             | 4             | 20            | —             | 5             | —             | Павлов Роман       |
| 12 | —             | —3            | —12           | —10           | 10            | —             | Пай Артем          |
| 13 | —             | 20            | —36           | 0             | 45            | —             | Попов Иван         |
| 14 | —             | —2            | 27            | —             | —9            | —9            | Размазин Александр |
| 15 | —             | 4             | —9            | —             | 9             | 27            | Руднев Никита      |
| 16 | 30            | —10           | 18            | —             | —30           | —             | Светушков Алексей  |
| 17 | 18            | 3             | —40           | —             | 18            | —             | Степанишин Дмитрий |
| 18 | —             | —3            | —4            | 8             | 4             | —             | Ульянова Катя      |
| 19 | —             | 4             | 6             | —             | —9            | 27            | Фомин Владислав    |
| 20 | —             | —8            | 7             | —             | —14           | —28           | Харизин Роман      |
| 21 | 154           | —140          | —44           | —             | —154          | —             | Яременко Сергей    |
| 22 | 1             | 0             | —4            | —             | —1            | —             | Кишкин Евгений     |
| 23 | 4             | —1            | 32            | —             | —4            | —             |                    |
| 24 | —1            | 1             | —3            | —             | —1            | —             |                    |

К25 файл o25kddA