

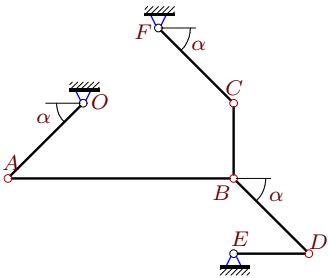
## Механизм с двумя степенями свободы

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

### Задача K25.1.

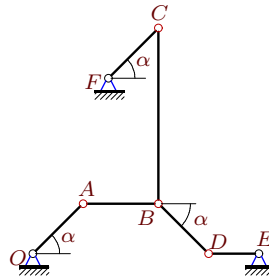
35



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

### Задача K25.2.

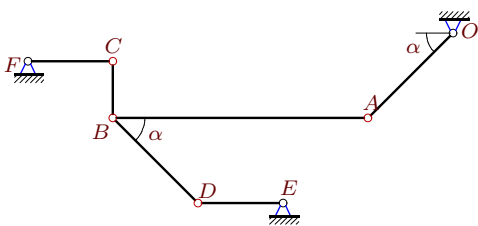
35



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

### Задача K25.3.

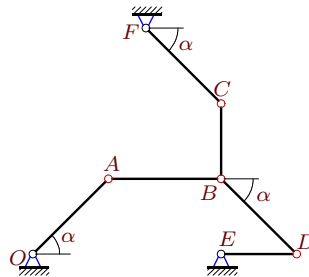
35



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

### Задача K25.4.

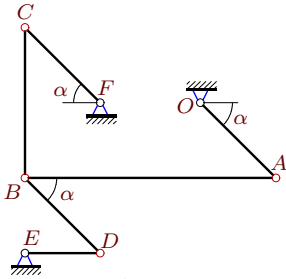
35



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

**Задача K25.5.**

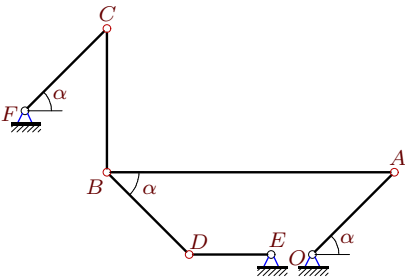
35



$\omega_{CF_z} = 30\frac{1}{c}$ ,  $\omega_{DE_z} = -10\frac{1}{c}$ ,  $AB = 10$ ,  $BC = 6$ ,  
 $DE = 3$ ,  $OA = CF = BD = 3\sqrt{2}$ ,  $\alpha = 45^\circ$ .

**Задача K25.7.**

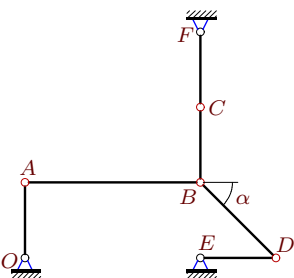
35



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

**Задача K25.9.**

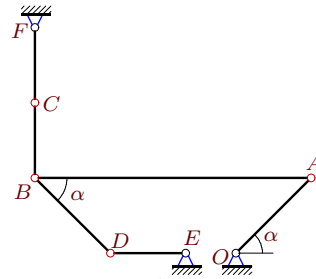
35



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

**Задача K25.6.**

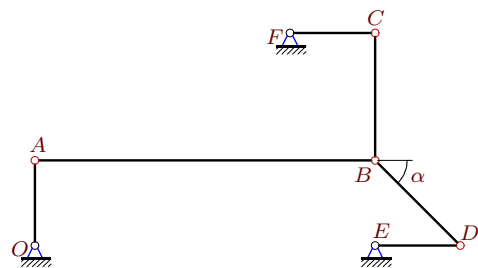
35



$\omega_{OA_z} = -11\frac{1}{c}$ ,  $\omega_{CF_z} = 33\frac{1}{c}$ ,  $AB = 11$ ,  $BC = 3$ ,  
 $DE = 3$ ,  $CF = 3$ ,  $OA = BD = 3\sqrt{2}$ ,  $\alpha = 45^\circ$ .

**Задача K25.8.**

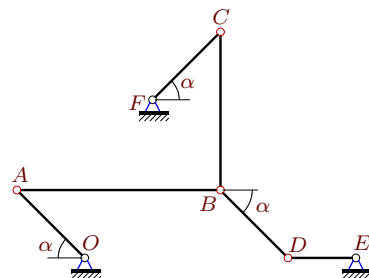
35



$\omega_{OA_z} = -12\frac{1}{c}$ ,  $\omega_{CF_z} = -36\frac{1}{c}$ ,  $AB = 8$ ,  $BC = 3$ ,  
 $DE = 2$ ,  $OA = 2$ ,  $CF = 2$ ,  $BD = 2\sqrt{2}$ ,  $\alpha = 45^\circ$ .

**Задача K25.10.**

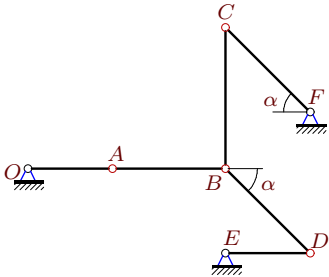
35



$\omega_{OA_z} = \omega_{CF_z} = 3\frac{1}{c}$ ,  $AB = 9$ ,  $BC = 7$ ,  
 $DE = 3$ ,  $OA = CF = BD = 3\sqrt{2}$ ,  $\alpha = 45^\circ$ .

**Задача K25.11.**

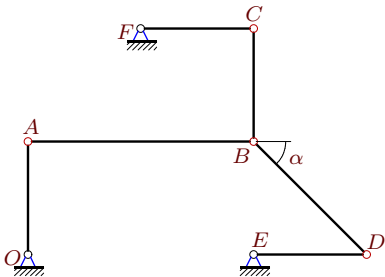
35



$\omega_{OA_z} = \omega_{DE_z} = 5\frac{1}{c}$ ,  $AB = 4$ ,  $BC = 5$ ,  
 $DE = 3$ ,  $OA = 3$ ,  $CF = BD = 3\sqrt{2}$ ,  $\alpha = 45^\circ$ .

**Задача K25.13.**

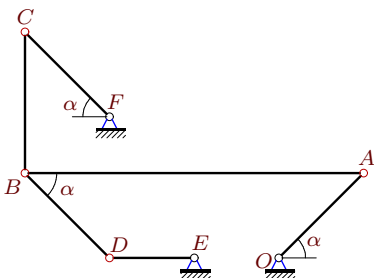
35



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

**Задача K25.15.**

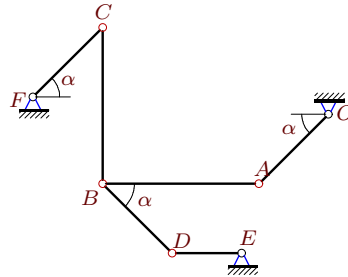
35



$\omega_{CF_z} = \omega_{DE_z} = 20\frac{1}{c}$ ,  $AB = 12$ ,  $BC = 5$ ,  
 $DE = 3$ ,  $OA = CF = BD = 3\sqrt{2}$ ,  $\alpha = 45^\circ$ .

**Задача K25.12.**

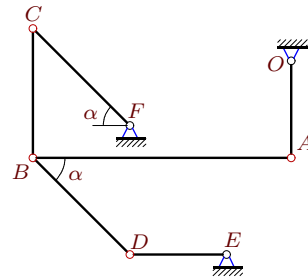
35



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

**Задача K25.14.**

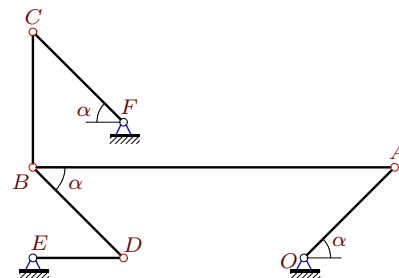
35



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

**Задача K25.16.**

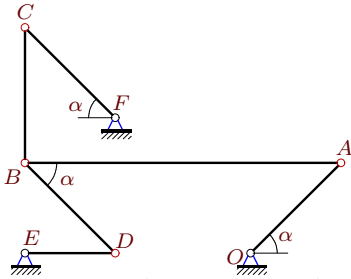
35



$\omega_{OA_z} = 12\frac{1}{c}$ ,  $\omega_{CF_z} = 24\frac{1}{c}$ ,  $AB = 8$ ,  $BC = 3$ ,  
 $DE = 2$ ,  $OA = CF = BD = 2\sqrt{2}$ ,  $\alpha = 45^\circ$ .

Задача K25.17.

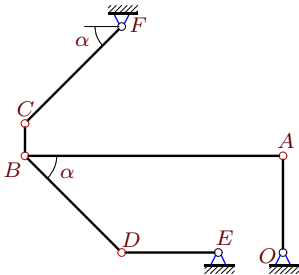
35



$$\omega_{CF_z} = -42\frac{1}{c}, \omega_{DE_z} = 21\frac{1}{c}, AB = 7, BC = 3, DE = 2, OA = CF = BD = 2\sqrt{2}, \alpha = 45^\circ.$$

Задача K25.19.

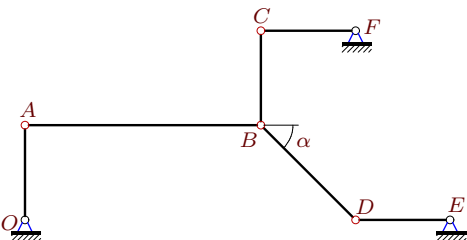
35



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

Задача K25.21.

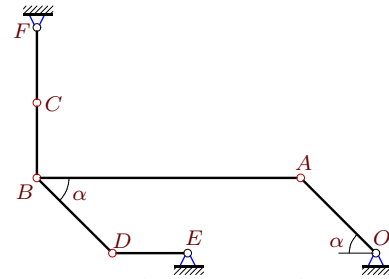
35



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

Задача K25.18.

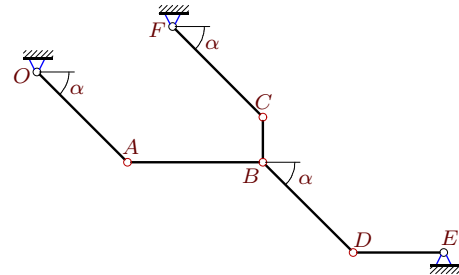
35



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

Задача K25.20.

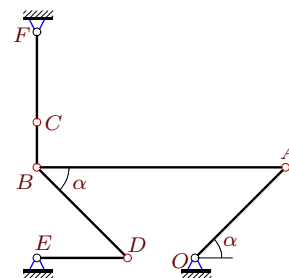
35



$$\omega_{CF_z} = -9\frac{1}{c}, \omega_{DE_z} = 3\frac{1}{c}, AB = 6, BC = 2, DE = 4, OA = CF = BD = 4\sqrt{2}, \alpha = 45^\circ.$$

Задача K25.22.

35



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

№	$\omega_{OA}$	$\omega_{AB}$	$\omega_{BC}$	$\omega_{FC}$	$\omega_{DB}$	$\omega_{DE}$
1	—	0	—2	—	1	2
2	—	14	6	0	—21	—
3	6	—5	9	—	—6	—
4	—	—4	12	—	—3	—12
5	—20	3	5	—	20	—
6	—	—3	—22	—	—11	11
7	0	2	—4	—	0	—
8	—	—9	8	—	—12	—48
9	—1	0	2	—	—1	—
10	—	2	0	—	3	—6
11	—	0	—3	—5	0	—
12	—	—4	4	0	—9	—
13	1	—1	—1	—	1	—
14	—	0	—3	0	4	—
15	0	5	12	—	0	—
16	—	9	8	—	12	—12
17	—21	—18	—14	—	—21	—
18	—7	2	14	—	—7	—
19	—	3	0	—	—8	16
20	—6	—2	6	—	6	—
21	—5	4	5	—	—5	—
22	11	4	44	—	11	—

К25 файл    о25к35А