

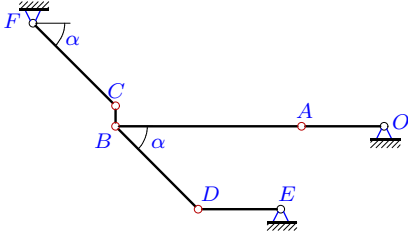
Механизм с двумя степенями свободы

В указанном положении механизма заданы угловые скорости двух его звеньев (с^{-1}). Длины звеньев даны в сантиметрах, $\alpha = 45^\circ$. 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 К-25.1.

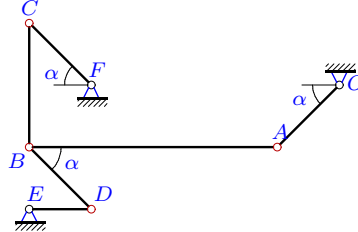
11



$$\omega_{OA_z} = -9, \omega_{CF_z} = 27, AB = 9, BC = 1, DE = 4, OA = 4, CF = BD = 4\sqrt{2}.$$

Задача К-25.2.

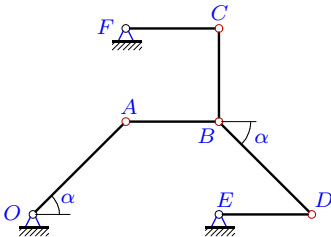
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$$\omega_{CF_z} = -12, \omega_{DE_z} = -4, AB = 8, BC = 4, DE = 2, OA = CF = BD = 2\sqrt{2}.$$

Задача К-25.3.

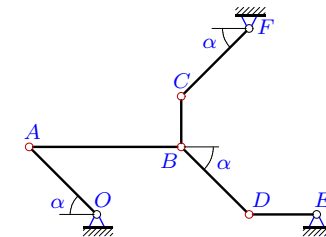
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$$\omega_{CF_z} = -3, \omega_{DE_z} = -1, AB = BC = 3, DE = 3, CF = 3, OA = BD = 3\sqrt{2}.$$

Задача К-25.4.

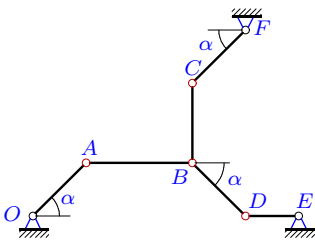
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$$\omega_{OA_z} = 9, \omega_{CF_z} = -9, AB = 9, BC = 3, DE = 4, OA = CF = BD = 4\sqrt{2}.$$

Задача К-25.5.

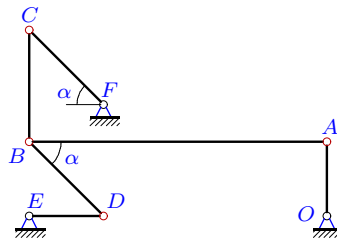
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$$\omega_{OA_z} = 1, \omega_{DE_z} = -2, AB = 4, BC = 3, DE = 2, OA = CF = BD = 2\sqrt{2}.$$

Задача К-25.6.

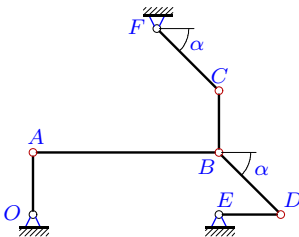
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$$\omega_{CF_z} = 12, \omega_{DE_z} = 6, AB = 8, BC = 3, DE = 2, OA = 2, CF = BD = 2\sqrt{2}.$$

Задача К-25.7.

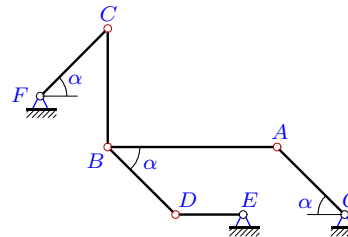
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$$\omega_{CF_z} = -6, \omega_{DE_z} = -3, AB = 9, BC = 3, DE = 3, OA = 3, CF = BD = 3\sqrt{2}.$$

Задача К-25.8.

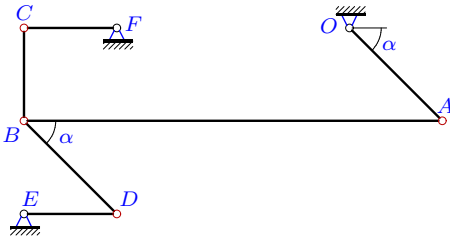
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$$\omega_{OA_z} = 35, \omega_{DE_z} = -105, AB = 10, BC = 7, DE = 4, OA = CF = BD = 4\sqrt{2}.$$

Задача К-25.9.

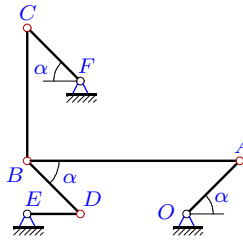
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$\omega_{OA_z} = 3, \omega_{CF_z} = 6, AB = 9, BC = 2,$
 $DE = 2, CF = 2, OA = BD = 2\sqrt{2}.$

Задача К-25.10.

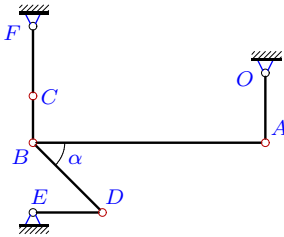
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$\omega_{OA_z} = -20, \omega_{DE_z} = -60, AB = 8, BC = 5,$
 $DE = 2, OA = CF = BD = 2\sqrt{2}.$

Задача К-25.11.

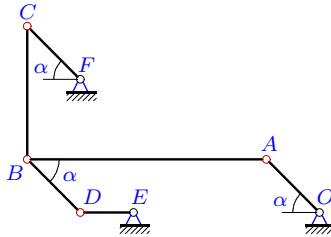
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$\omega_{CF_z} = -4, \omega_{DE_z} = -2, AB = 10, BC = 2,$
 $DE = 3, OA = 3, CF = 3, BD = 3\sqrt{2}.$

Задача К-25.12.

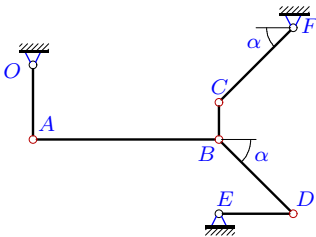
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$\omega_{OA_z} = -15, \omega_{DE_z} = 45, AB = 9, BC = 5,$
 $DE = 2, OA = CF = BD = 2\sqrt{2}.$

Задача К-25.13.

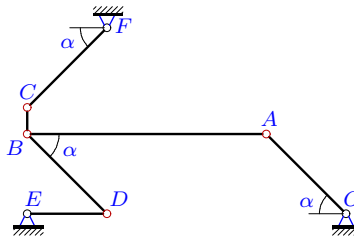
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$\omega_{OA_z} = -5, \omega_{CF_z} = 5, AB = 10, BC = 2,$
 $DE = 4, OA = 4, CF = BD = 4\sqrt{2}.$

Задача К-25.14.

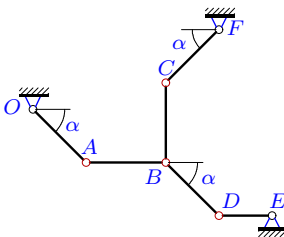
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$\omega_{OA_z} = 3, \omega_{CF_z} = -3, AB = 9, BC = 1,$
 $DE = 3, OA = CF = BD = 3\sqrt{2}.$

Задача К-25.15.

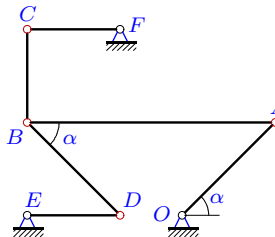
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$\omega_{OA_z} = \omega_{DE_z} = 3, AB = BC = 3, DE = 2, OA =$
 $CF = BD = 2\sqrt{2}.$

Задача К-25.16.

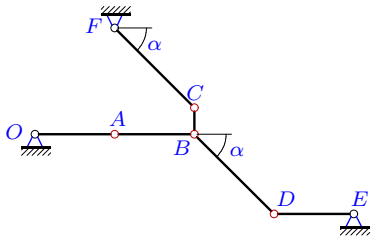
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$\omega_{OA_z} = -8, \omega_{DE_z} = 8, AB = 8, BC = 3,$
 $DE = 3, CF = 3, OA = BD = 3\sqrt{2}.$

Задача К-25.17.

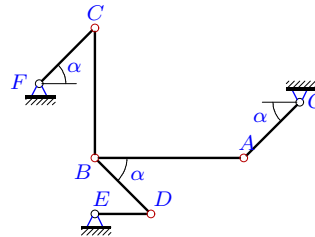
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$\omega_{OA_z} = 1, \omega_{CF_z} = -1, AB = 3, BC = 1,$
 $DE = 3, OA = 3, CF = BD = 3\sqrt{2}.$

Задача К-25.18.

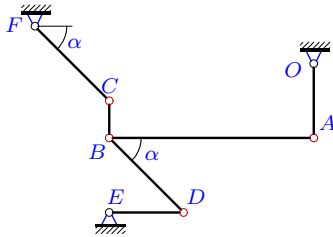
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$\omega_{CF_z} = 56, \omega_{DE_z} = -56, AB = 8, BC = 7,$
 $DE = 3, OA = CF = BD = 3\sqrt{2}.$

Задача К-25.19.

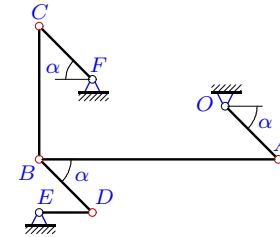
11



$\omega_{OA_z} = 11, \omega_{CF_z} = -22, AB = 11, BC = 2,$
 $DE = 4, OA = 4, CF = BD = 4\sqrt{2}.$

Задача К-25.20.

11



$\omega_{OA_z} = -45, \omega_{DE_z} = 45, AB = 9, BC = 5,$
 $DE = 2, OA = CF = BD = 2\sqrt{2}.$

К-25

Ответы.

Механизм с двумя степенями свободы

05.12.2013

№	ω_{OA}	ω_{AB}	ω_{BC}	ω_{FC}	ω_{DB}	ω_{DE}
1	—	—8	—108	—	0	—27
2	16	—7	2	—	—16	—
3	2	—5	—2	—	2	—
4	—	8	0	—	9	—18
5	—	0	0	—1	1	—
6	18	3	—4	—	18	—
7	3	—2	3	—	3	—
8	—	—42	20	70	35	—
9	—	2	3	—	—3	—9
10	—	5	24	40	—20	—
11	2	0	9	—	—2	—
12	—	10	18	30	—15	—
13	—	—2	—20	—	5	0
14	—	—2	0	—	3	6
15	—	—2	2	0	—3	—
16	—	—9	8	—16	—8	—
17	—	—2	3	—	0	1
18	112	—63	72	—	—112	—
19	—	8	66	—	—11	—33
20	—	—10	—18	0	45	—

К-25 файл о25к11А