

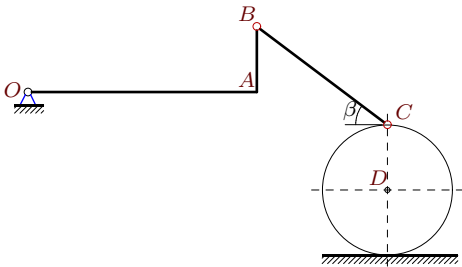
Скорости точек простого механизма (3 звена).

В указанном положении механизма задана угловая скорость одного из его звеньев. Звенья, направление которых не указано, принимать вертикальными или горизонтальными. Радиус цилиндра R . Размеры даны в метрах.

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

Задача K17.1.

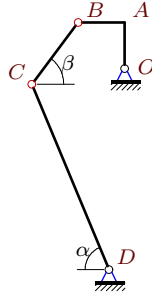
2



$$\omega_{BCz} = -28\frac{1}{c}, \quad OA = 7, \quad AB = 2, \quad OA \perp AB, \\ BC = 5, \quad R = 2, \quad \operatorname{tg} \beta = 3/4.$$

Задача K17.2.

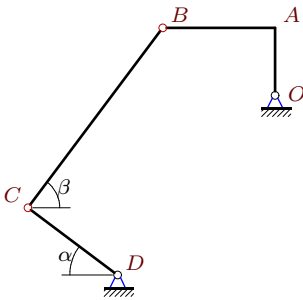
2



$$\omega_{OAz} = 8\frac{1}{c}, \quad OA = AB = 3, \quad OA \perp AB, \\ BC = 5, \quad DC = 13, \quad \operatorname{tg} \beta = 4/3, \quad \operatorname{tg} \alpha = 12/5$$

Задача K17.3.

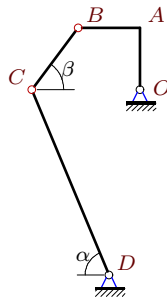
2



$$\omega_{DCz} = 58\frac{1}{c}, \quad OA = 3, \quad AB = 5, \quad OA \perp AB, \\ BC = 10, \quad DC = 5, \quad \operatorname{tg} \beta = 4/3, \quad \operatorname{tg} \alpha = 3/4$$

Задача K17.4.

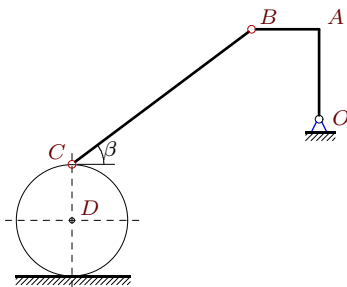
2



$$\omega_{OAz} = 2\frac{1}{c}, \quad OA = AB = 4, \quad OA \perp AB, \\ BC = 5, \quad DC = 13, \quad \operatorname{tg} \beta = 4/3, \quad \operatorname{tg} \alpha = 12/5$$

Задача K17.5.

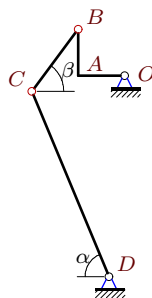
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$$\omega_{BCz} = -3\frac{1}{c}, \quad OA = 4, \quad AB = 3, \quad OA \perp AB, \\ BC = 10, \quad R = 2.5, \quad \operatorname{tg} \beta = 3/4.$$

Задача K17.6.

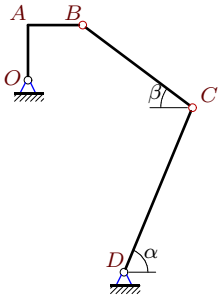
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$$\omega_{OAz} = 8\frac{1}{c}, \quad OA = AB = 3, \quad OA \perp AB, \\ BC = 5, \quad DC = 13, \quad \operatorname{tg} \beta = 4/3, \quad \operatorname{tg} \alpha = 12/5$$

Задача K17.7.

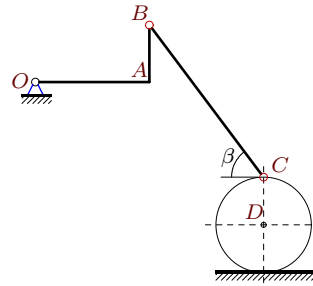
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$\omega_{OA_z} = 9\frac{1}{c}$, $OA = AB = 4$, $OA \perp AB$,
 $BC = 10$, $DC = 13$, $\operatorname{tg} \beta = 3/4$, $\operatorname{tg} \alpha = 12/5$

Задача K17.8.

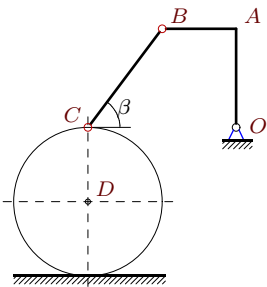
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$\omega_{DC_z} = 11\frac{1}{c}$, $OA = 6$, $AB = 3$, $OA \perp AB$,
 $BC = 10$, $R = 2.5$, $\operatorname{tg} \beta = 4/3$.

Задача K17.9.

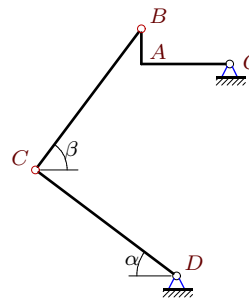
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$\omega_{DC_z} = 4\frac{1}{c}$, $OA = 4$, $AB = 3$, $OA \perp AB$,
 $BC = 5$, $R = 3$, $\operatorname{tg} \beta = 4/3$.

Задача K17.10.

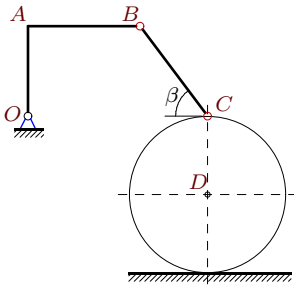
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$\omega_{DC_z} = 26\frac{1}{c}$, $OA = 5$, $AB = 2$, $OA \perp AB$,
 $BC = DC = 10$, $\operatorname{tg} \beta = 4/3$, $\operatorname{tg} \alpha = 3/4$

Задача K17.11.

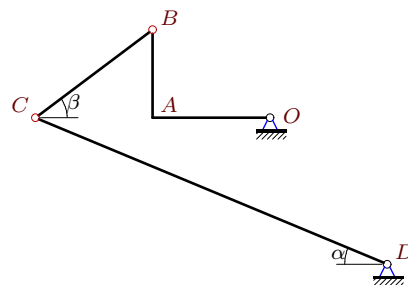
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$\omega_{BC_z} = -35\frac{1}{c}$, $OA = 4$, $AB = 5$, $OA \perp AB$,
 $BC = 5$, $R = 3.5$, $\operatorname{tg} \beta = 4/3$.

Задача K17.12.

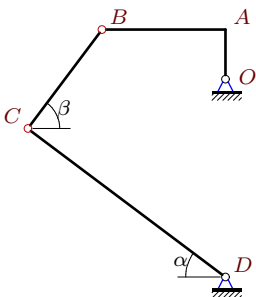
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$\omega_{BC_z} = 2\frac{1}{c}$, $OA = 4$, $AB = 3$, $OA \perp AB$,
 $BC = 5$, $DC = 13$, $\operatorname{tg} \beta = 3/4$, $\operatorname{tg} \alpha = 5/12$

Задача K17.13.

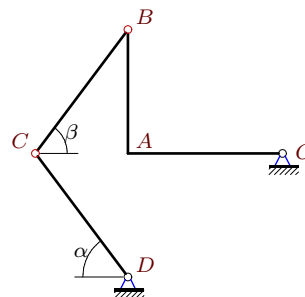
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$\omega_{DC_z} = 13\frac{1}{c}$, $OA = 2$, $AB = 5$, $OA \perp AB$,
 $BC = 5$, $DC = 10$, $\operatorname{tg} \beta = 4/3$, $\operatorname{tg} \alpha = 3/4$

Задача K17.14.

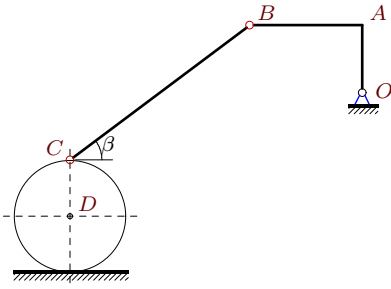
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$\omega_{DC_z} = 4\frac{1}{c}$, $OA = 5$, $AB = 4$, $OA \perp AB$,
 $BC = DC = 5$, $\operatorname{tg} \alpha = \operatorname{tg} \beta = 4/3$

Задача K17.15.

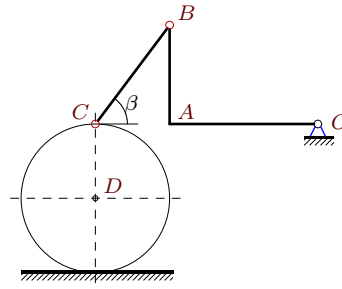
2



$\omega_{DC_z} = 54\frac{1}{c}$, $OA = 3$, $AB = 5$, $OA \perp AB$,
 $BC = 10$, $R = 2.5$, $\operatorname{tg} \beta = 3/4$.

Задача K17.16.

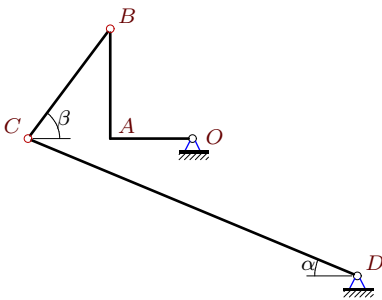
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$\omega_{DC_z} = 2\frac{1}{c}$, $OA = 6$, $AB = 4$, $OA \perp AB$,
 $BC = 5$, $R = 3$, $\operatorname{tg} \beta = 4/3$.

Задача K17.17.

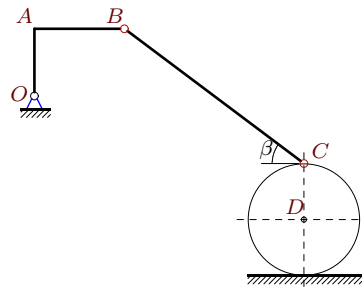
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$\omega_{BC_z} = 11\frac{1}{c}$, $OA = 3$, $AB = 4$, $OA \perp AB$,
 $BC = 5$, $DC = 13$, $\operatorname{tg} \beta = 4/3$, $\operatorname{tg} \alpha = 5/12$

Задача K17.18.

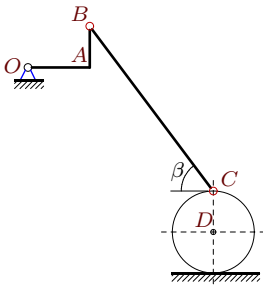
2



$\omega_{OA_z} = 10\frac{1}{c}$, $OA = 3$, $AB = 4$, $OA \perp AB$,
 $BC = 10$, $R = 2.5$, $\operatorname{tg} \beta = 3/4$.

Задача K17.19.

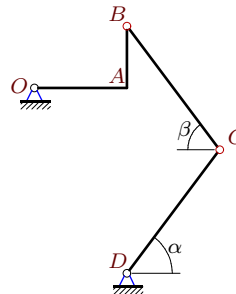
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$\omega_{BC_z} = -1\frac{1}{c}$, $OA = 3$, $AB = 2$, $OA \perp AB$,
 $BC = 10$, $R = 2$, $\operatorname{tg} \beta = 4/3$.

Задача K17.20.

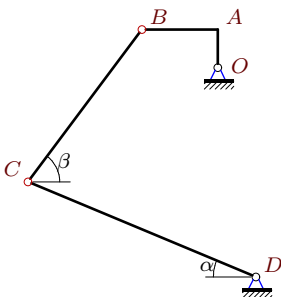
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$\omega_{DC_z} = 3\frac{1}{c}$, $OA = 3$, $AB = 2$, $OA \perp AB$,
 $BC = DC = 5$, $\operatorname{tg} \alpha = \operatorname{tg} \beta = 4/3$

Задача K17.21.

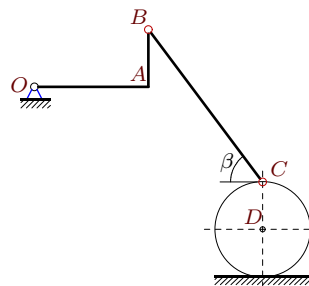
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$\omega_{BC_z} = 2\frac{1}{c}$, $OA = 2$, $AB = 4$, $OA \perp AB$,
 $BC = 10$, $DC = 13$, $\operatorname{tg} \beta = 4/3$, $\operatorname{tg} \alpha = 5/12$

Задача K17.22.

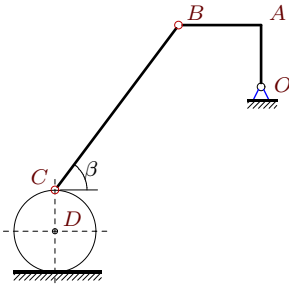
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$\omega_{BC_z} = -5\frac{1}{c}$, $OA = 6$, $AB = 3$, $OA \perp AB$,
 $BC = 10$, $R = 2.5$, $\operatorname{tg} \beta = 4/3$.

Задача K17.23.

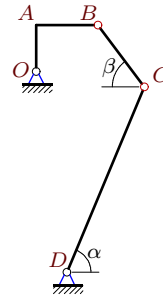
2



$\omega_{DC_z} = 25\frac{1}{c}$, $OA = 3$, $AB = 4$, $OA \perp AB$,
 $BC = 10$, $R = 2$, $\operatorname{tg} \beta = 4/3$.

Задача K17.24.

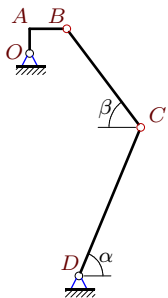
2



$\omega_{OA_z} = 56\frac{1}{c}$, $OA = 3$, $AB = 4$, $OA \perp AB$,
 $BC = 5$, $DC = 13$, $\operatorname{tg} \beta = 4/3$, $\operatorname{tg} \alpha = 12/5$

Задача K17.25.

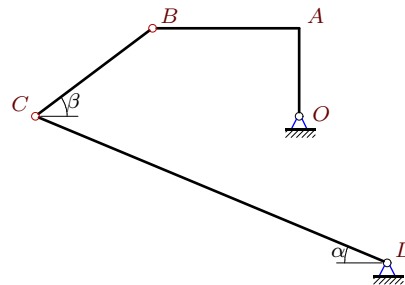
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$\omega_{OA_z} = 56\frac{1}{c}$, $OA = 2$, $AB = 3$, $OA \perp AB$,
 $BC = 10$, $DC = 13$, $\operatorname{tg} \beta = 4/3$, $\operatorname{tg} \alpha = 12/5$

Задача K17.26.

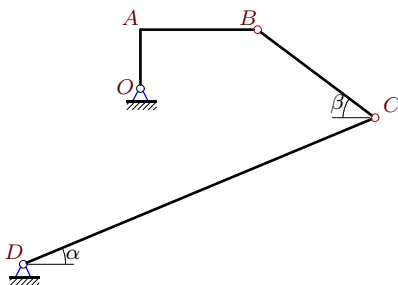
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$\omega_{BC_z} = 11\frac{1}{c}$, $OA = 3$, $AB = 5$, $OA \perp AB$,
 $BC = 5$, $DC = 13$, $\operatorname{tg} \beta = 3/4$, $\operatorname{tg} \alpha = 5/12$

Задача K17.27.

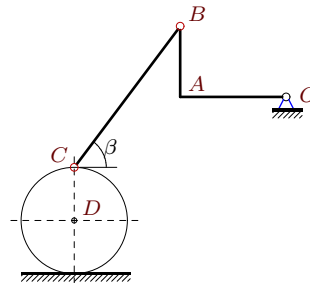
2



$\omega_{BC_z} = 1\frac{1}{c}$, $OA = 2$, $AB = 4$, $OA \perp AB$,
 $BC = 5$, $DC = 13$, $\operatorname{tg} \beta = 3/4$, $\operatorname{tg} \alpha = 5/12$

Задача K17.28.

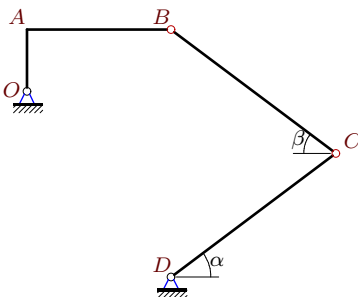
2



$\omega_{OA_z} = 1\frac{1}{c}$, $OA = 6$, $AB = 4$, $OA \perp AB$,
 $BC = 10$, $R = 3$, $\operatorname{tg} \beta = 4/3$.

Задача K17.29.

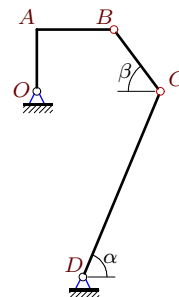
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$\omega_{DC_z} = 11\frac{1}{c}$, $OA = 3$, $AB = 7$, $OA \perp AB$,
 $BC = DC = 10$, $\operatorname{tg} \alpha = \operatorname{tg} \beta = 3/4$

Задача K17.30.

2



$\omega_{OA_z} = 7\frac{1}{c}$, $OA = 4$, $AB = 5$, $OA \perp AB$,
 $BC = 5$, $DC = 13$, $\operatorname{tg} \beta = 4/3$, $\operatorname{tg} \alpha = 12/5$

К17 Ответы.**Скорости точек простого механизма (3 звена).**

22.03.2012

№	ω_{OAz}	ω_{BCz}	ω_{CDz}	v_A	v_B	v_C
1	16	—	29	112	116.48	116
2	—	-3	3	24	33.94	39
3	50	-3	—	150	291.55	290
4	—	-1	1	8	11.31	13
5	8	—	10	32	40	50
6	—	-3	3	24	33.94	39
7	—	-2	4	36	50.91	52
8	5	-5	—	30	33.54	55
9	3	-3	—	12	15	24
10	50	-7	—	250	269.26	260
11	21	—	32	84	134.47	224
12	7	—	3	28	35	39
13	25	-7	—	50	134.63	130
14	3	-1	—	15	19.21	20
15	40	-25	—	120	233.24	270
16	1	-2	—	6	7.21	12
17	21	—	8	63	105	104
18	—	-5	12	30	50	60
19	2	—	3	6	7.21	12
20	4	-1	—	12	14.42	15
21	63	—	22	126	281.74	286
22	5	—	11	30	33.54	55
23	12	-8	—	36	60	100
24	—	-33	25	168	280	325
25	—	-13	18	112	201.91	234
26	56	—	27	168	326.53	351
27	14	—	5	28	62.61	65
28	—	-1	2	6	7.21	12
29	16	-3	—	48	121.85	110
30	—	-5	4	28	44.82	52

К17 файл о17к2А