

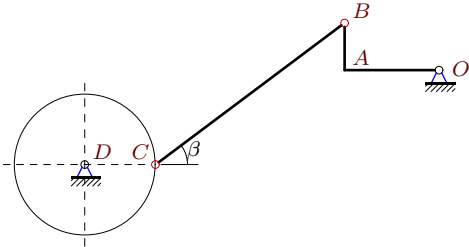
Скорости точек простого механизма (3 звена).

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

Задача K17.1.

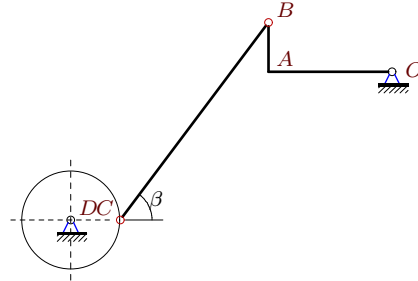
4



$$\omega_{DC_z} = 20 \frac{1}{c}, \quad OA = 4, \quad AB = 2, \quad OA \perp AB, \\ BC = 10, \quad R = 3, \quad \operatorname{tg} \beta = 3/4.$$

Задача K17.2.

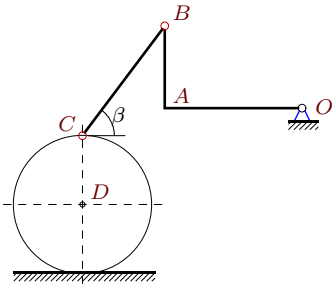
4



$$\omega_{OA_z} = -4 \frac{1}{c}, \quad OA = 5, \quad AB = 2, \quad OA \perp AB, \\ BC = 10, \quad R = 2, \quad \operatorname{tg} \beta = 4/3.$$

Задача K17.3.

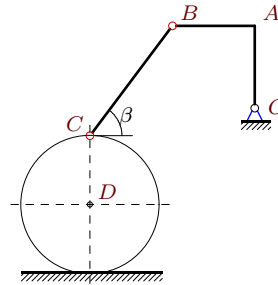
4



$$\omega_{DC_z} = 29 \frac{1}{c}, \quad OA = 5, \quad AB = 3, \quad OA \perp AB, \\ BC = 2R = 5, \quad \operatorname{tg} \beta = 4/3.$$

Задача K17.4.

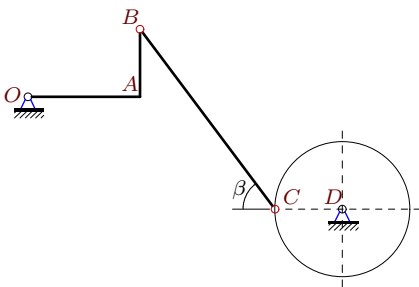
4



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

Задача K17.5.

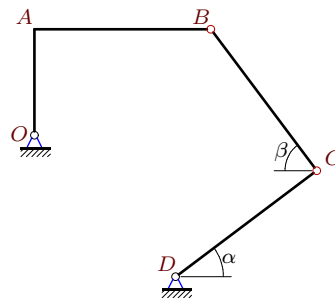
4



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

Задача K17.6.

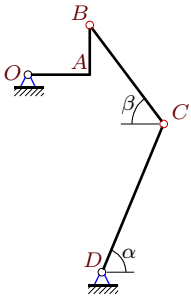
4



$$\omega_{DC_z} = 29 \frac{1}{c}, \quad OA = 3, \quad AB = 5, \quad OA \perp AB, \\ BC = DC = 5, \quad \operatorname{tg} \beta = 4/3, \quad \operatorname{tg} \alpha = 3/4$$

Задача K17.7.

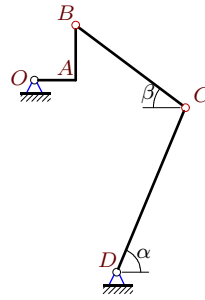
4



$\omega_{OA_z} = 14\frac{1}{c}$, $OA = 5$, $AB = 4$, $OA \perp AB$,
 $BC = 10$, $DC = 13$, $\operatorname{tg} \beta = 4/3$, $\operatorname{tg} \alpha = 12/5$

Задача K17.8.

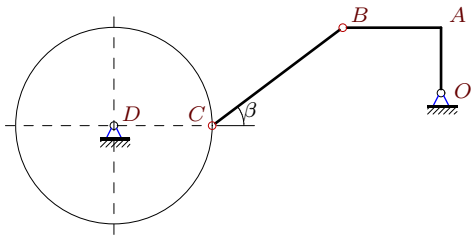
4



$\omega_{OA_z} = 63\frac{1}{c}$, $OA = 3$, $AB = 4$, $OA \perp AB$,
 $BC = 10$, $DC = 13$, $\operatorname{tg} \beta = 3/4$, $\operatorname{tg} \alpha = 12/5$

Задача K17.9.

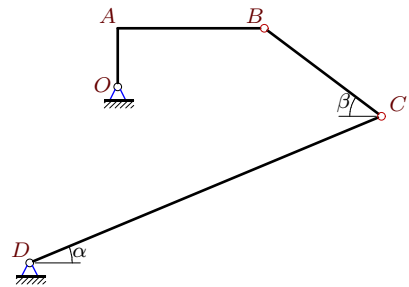
4



$\omega_{DC_z} = 17\frac{1}{c}$, $OA = 2$, $AB = 3$, $OA \perp AB$,
 $BC = 5$, $R = 3$, $\operatorname{tg} \beta = 3/4$.

Задача K17.10.

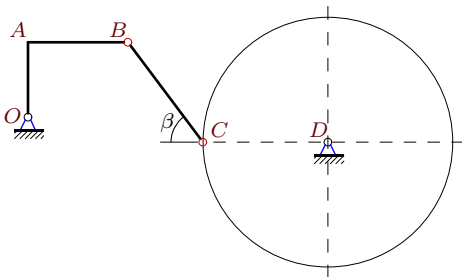
4



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

Задача K17.11.

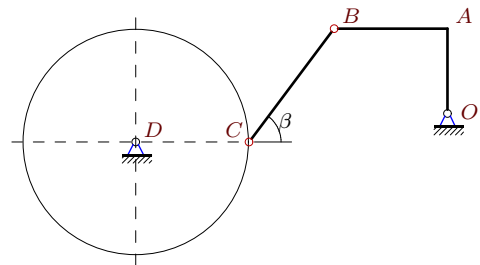
4



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

Задача K17.12.

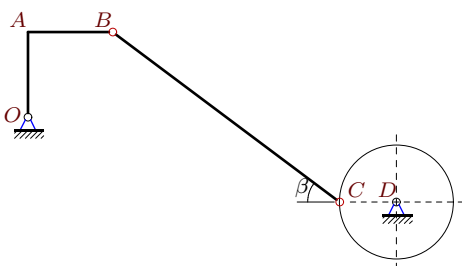
4



$\omega_{DC_z} = 25\frac{1}{c}$, $OA = 3$, $AB = 4$, $OA \perp AB$,
 $BC = 5$, $R = 4$, $\operatorname{tg} \beta = 4/3$.

Задача K17.13.

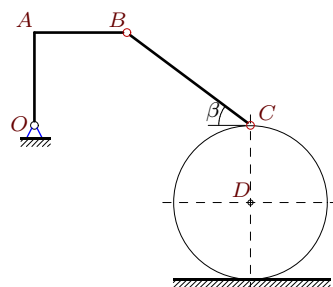
4



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

Задача K17.14.

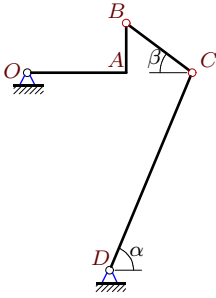
4



$\omega_{BC_z} = -15\frac{1}{c}$, $OA = AB = 3$, $OA \perp AB$,
 $BC = 2R = 5$, $\operatorname{tg} \beta = 3/4$.

Задача K17.15.

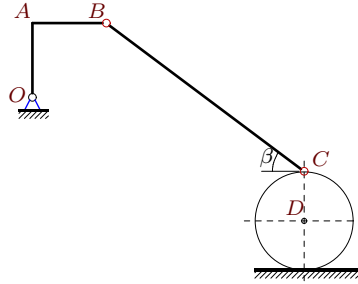
4



$\omega_{OA_z} = 21\frac{1}{c}$, $OA = 6$, $AB = 3$, $OA \perp AB$,
 $BC = 5$, $DC = 13$, $\text{tg } \beta = 3/4$, $\text{tg } \alpha = 12/5$

Задача K17.16.

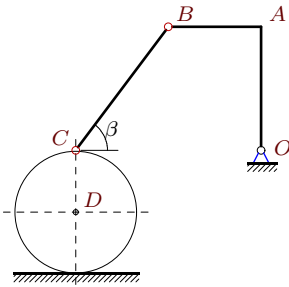
4



$\omega_{OA_z} = 16\frac{1}{c}$, $OA = AB = 3$, $OA \perp AB$,
 $BC = 10$, $R = 2$, $\text{tg } \beta = 3/4$.

Задача K17.17.

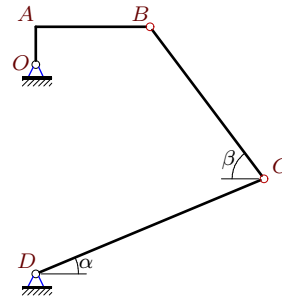
4



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

Задача K17.18.

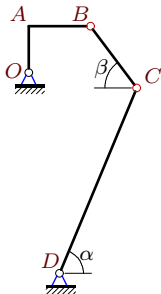
4



$\omega_{BC_z} = -1\frac{1}{c}$, $OA = 2$, $AB = 6$, $OA \perp AB$,
 $BC = 10$, $DC = 13$, $\text{tg } \beta = 4/3$, $\text{tg } \alpha = 5/12$

Задача K17.19.

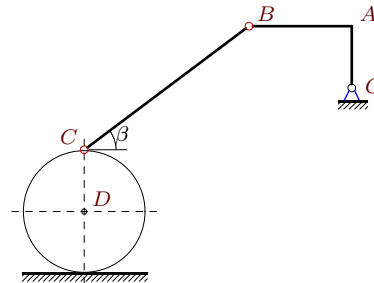
4



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

Задача K17.20.

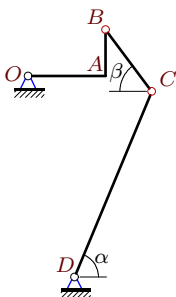
4



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

Задача K17.21.

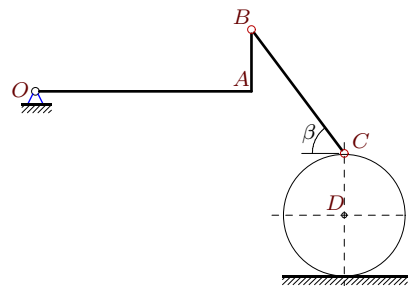
4



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

Задача K17.22.

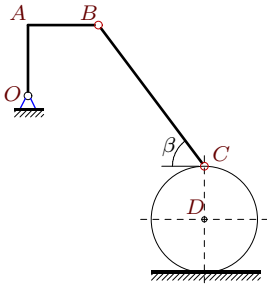
4



$\omega_{OA_z} = 6\frac{1}{c}$, $OA = 7$, $AB = 2$, $OA \perp AB$,
 $BC = 5$, $R = 2$, $\text{tg } \beta = 4/3$.

Задача K17.23.

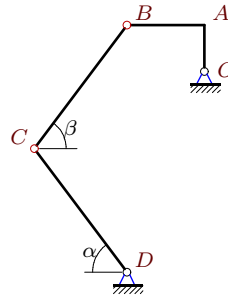
4



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

Задача K17.24.

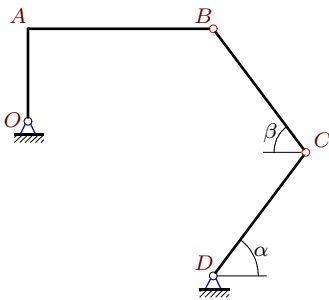
4



$\omega_{DCz} = 29\frac{1}{c}$, $OA = 3$, $AB = 5$, $OA \perp AB$,
 $BC = DC = 10$, $\text{tg } \alpha = \text{tg } \beta = 4/3$

Задача K17.25.

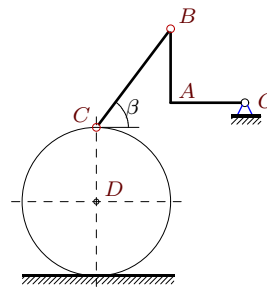
4



$\omega_{DCz} = 11\frac{1}{c}$, $OA = 3$, $AB = 6$, $OA \perp AB$,
 $BC = DC = 5$, $\text{tg } \alpha = \text{tg } \beta = 4/3$

Задача K17.26.

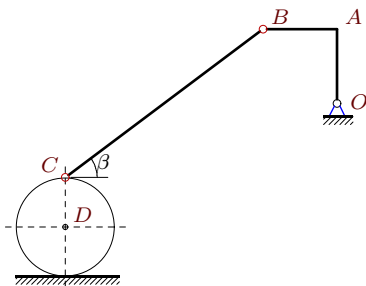
4



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

Задача K17.27.

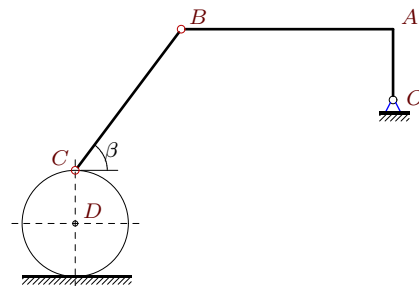
4



$\omega_{DCz} = 21\frac{1}{c}$, $OA = AB = 3$, $OA \perp AB$,
 $BC = 10$, $R = 2$, $\text{tg } \beta = 3/4$.

Задача K17.28.

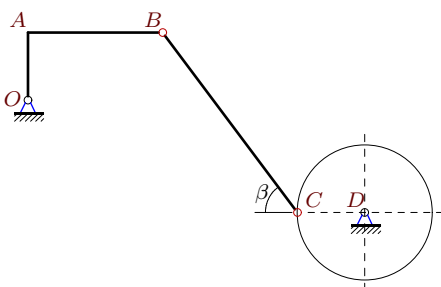
4



$\omega_{DCz} = 10\frac{1}{c}$, $OA = 2$, $AB = 6$, $OA \perp AB$,
 $BC = 5$, $R = 1.5$, $\text{tg } \beta = 4/3$.

Задача K17.29.

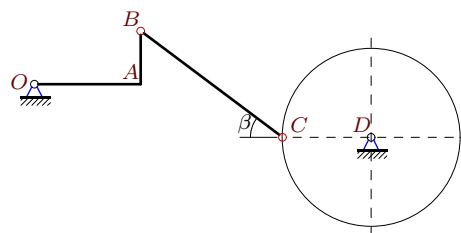
4



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

Задача K17.30.

4



$\omega_{OAz} = -2\frac{1}{c}$, $OA = 6$, $AB = 3$, $OA \perp AB$,
 $BC = 10$, $R = 5$, $\text{tg } \beta = 3/4$.

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

22.03.2012

№	ω_{OAz}	ω_{BCz}	ω_{CDz}	v_A	v_B	v_C
1	-9	-3	-	36	40.25	60
2	-	-1	13	20	21.54	26
3	15	-25	-	75	87.46	145
4	5	-	7	15	21.21	35
5	-24	-9	-	120	139.94	174
6	25	-3	-	75	145.77	145
7	-	-5	8	70	89.64	104
8	-	-8	25	189	315	325
9	-9	-6	-	18	32.45	51
10	56	-	23	112	301.57	299
11	-	-3	5	12	20	25
12	-16	-12	-	48	80	100
13	-2	-	7	6	8.49	14
14	20	-	21	60	84.85	105
15	-	-19	10	126	140.87	130
16	-	-6	21	48	67.88	84
17	1	-1	-	4	5	8
18	21	-	10	42	132.82	130
19	-	-33	25	168	280	325
20	8	-	9	24	46.65	54
21	-	-45	29	280	326.53	377
22	-	-14	17	42	43.68	68
23	9	-	14	36	50.91	84
24	48	-11	-	144	279.89	290
25	8	-5	-	24	53.67	55
26	6	-	7	18	25.46	42
27	16	-6	-	48	67.88	84
28	3	-6	-	6	18.97	30
29	-8	-	22	24	53.67	66
30	-	-1	4	12	13.42	20

К17 файл о17к4А