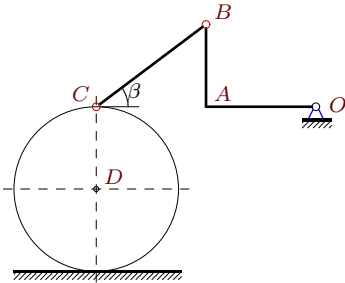# Скорости точек простого механизма (3 звена).

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.)
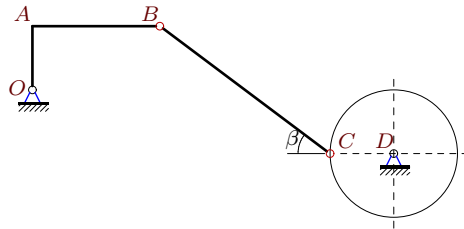
Задача К17.1. 5

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

Задача К17.2. 5

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

Задача К17.3. 5
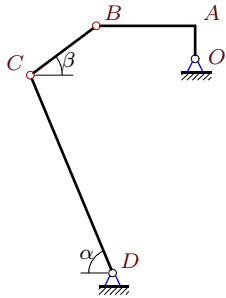
$\omega_{OA_z} = 63\frac{1}{c}$, $OA = 2$, $AB = 6$, $OA \perp AB$, $BC = 5$, $DC = 13$, $\text{tg}\,\beta = 3/4$, $\text{tg}\,\alpha = 12/5$

Задача К17.4. 5
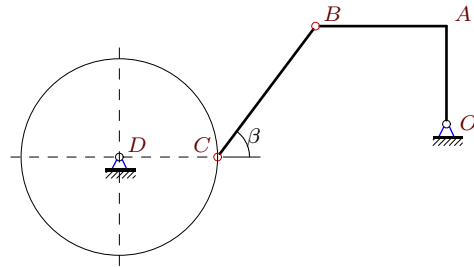
$\omega_{OA_z} = -12\frac{1}{c}$, $OA = 3$, $AB = 4$, $OA \perp AB$, $BC = 5$, $R = 3$, $\text{tg}\,\beta = 4/3$.

Задача К17.5. 5
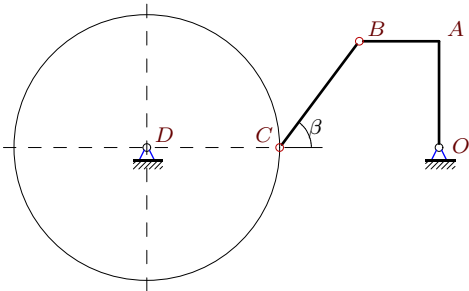
$\omega_{OA_z} = -5\frac{1}{c}$, $OA = 4$, $AB = 3$, $OA \perp AB$, $BC = R = 5$, $\text{tg}\,\beta = 4/3$.

Задача К17.6. 5
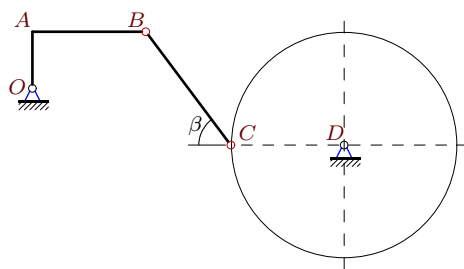
$\omega_{DC_z} = 11\frac{1}{c}$, $OA = 2$, $AB = 4$, $OA \perp AB$, $BC = 5$, $R = 4$, $\text{tg}\,\beta = 4/3$.
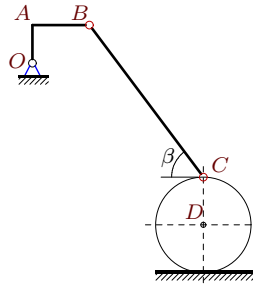
Задача K17.7.
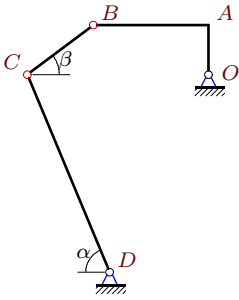
$\omega_{OA_z} = 21\frac{1}{c}$, $OA = 3$, $AB = 7$, $OA \perp AB$,
$BC = 5$, $DC = 13$, $\text{tg}\,\beta = 3/4$, $\text{tg}\,\alpha = 12/5$
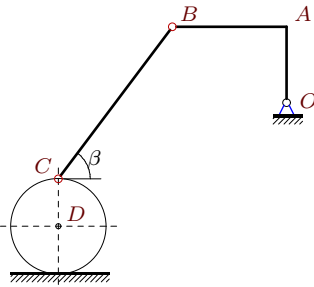
Задача K17.8.

$\omega_{BC_z} = -5\frac{1}{c}$, $OA = 2$, $AB = 3$, $OA \perp AB$,
$BC = 10$, $R = 2.5$, $\text{tg}\,\beta = 4/3$.
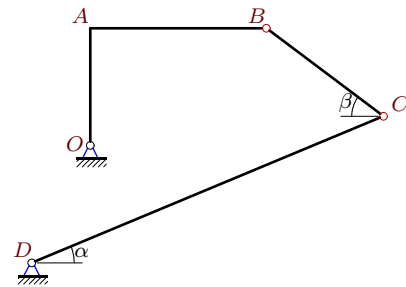
Задача K17.9.

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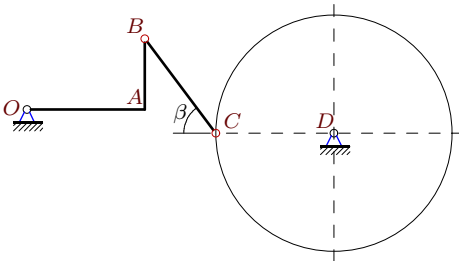$BC = 10$, $R = 2.5$, $\text{tg}\,\beta = 4/3$.

Задача K17.10.

$\omega_{BC_z} = 9\frac{1}{c}$, $OA = 4$, $AB = 6$, $OA \perp AB$,
$BC = 5$, $DC = 13$, $\text{tg}\,\beta = 3/4$, $\text{tg}\,\alpha = 5/12$
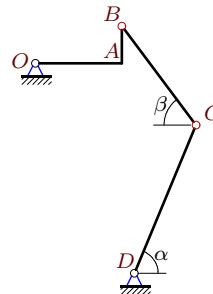
Задача K17.11.

$\omega_{OA_z} = -20\frac{1}{c}$, $OA = 5$, $AB = 3$, $OA \perp AB$,
$BC = R = 5$, $\text{tg}\,\beta = 4/3$.

Задача K17.12.

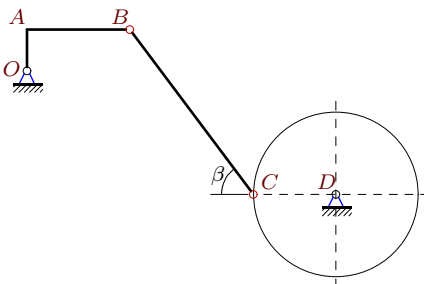$\omega_{OA_z} = 112\frac{1}{c}$, $OA = 7$, $AB = 3$, $OA \perp AB$,
$BC = 10$, $DC = 13$, $\text{tg}\,\beta = 4/3$, $\text{tg}\,\alpha = 12/5$
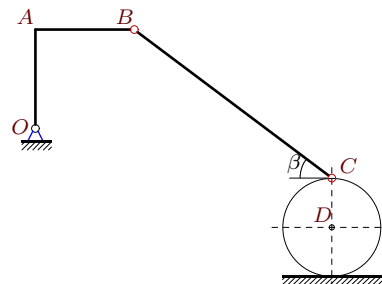
Задача K17.13.

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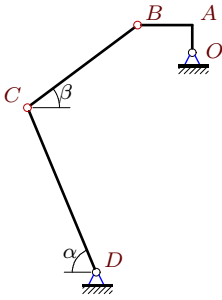$BC = 10$, $R = 4$, $\text{tg}\,\beta = 4/3$.

Задача K17.14.

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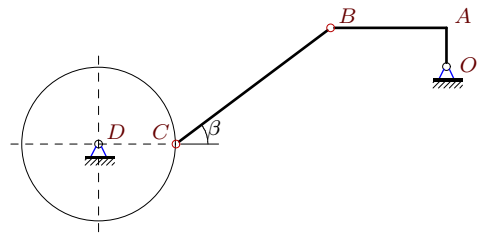$BC = 10$, $R = 2$, $\text{tg}\,\beta = 3/4$.

Задача K17.15.

$\omega_{OA_z} = 63\frac{1}{c}$, $OA = 2$, $AB = 4$, $OA \perp AB$,
$BC = 10$, $DC = 13$, $\operatorname{tg}\beta = 3/4$, $\operatorname{tg}\alpha = 12/5$
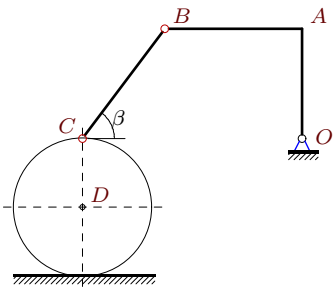
Задача K17.16.

$\omega_{OA_z} = -6\frac{1}{c}$, $OA = 2$, $AB = 6$, $OA \perp AB$,
$BC = 10$, $R = 4$, $\operatorname{tg}\beta = 3/4$.
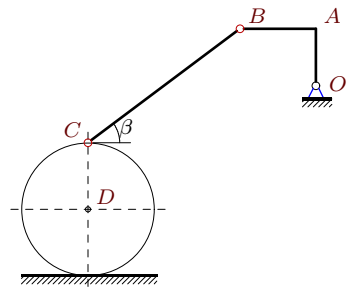
Задача K17.17.

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

Задача K17.18.

$\omega_{OA_z} = 14\frac{1}{c}$, $OA = 3$, $AB = 4$, $OA \perp AB$,
$BC = 10$, $R = 3.5$, $\operatorname{tg}\beta = 3/4$.

Задача K17.19.

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

Задача K17.20.
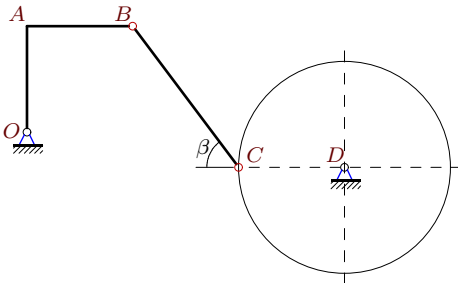
$\omega_{OA_z} = -4\frac{1}{c}$, $OA = 3$, $AB = 5$, $OA \perp AB$,
$BC = 5$, $R = 4$, $\operatorname{tg}\beta = 3/4$.

Задача K17.21.

$\omega_{DC_z} = 11\frac{1}{c}$, $OA = 4$, $AB = 2$, $OA \perp AB$,
$BC = 5$, $R = 2$, $\operatorname{tg}\beta = 3/4$.
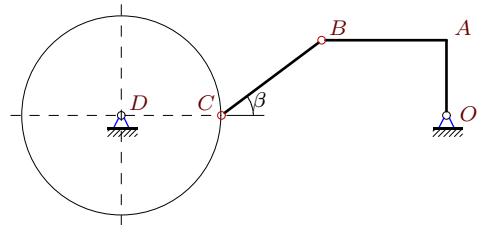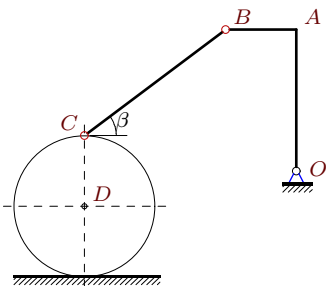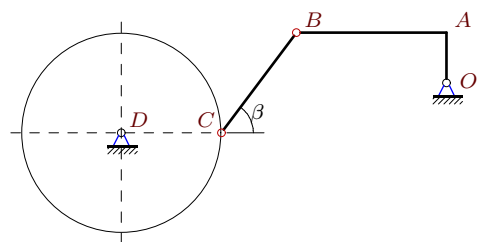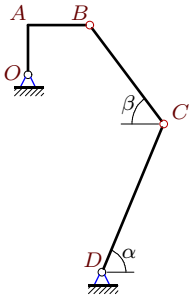
Задача K17.22.

$\omega_{DC_z} = 15\frac{1}{c}$, $OA = 2$, $AB = 6$, $OA \perp AB$,
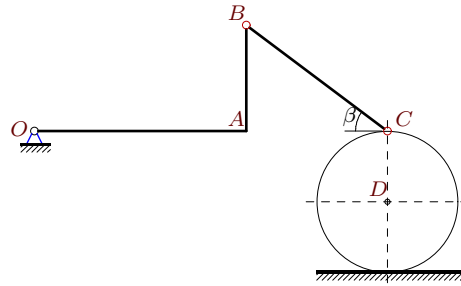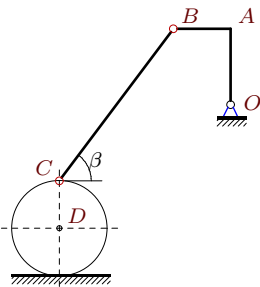$BC = 5$, $R = 4$, $\operatorname{tg}\beta = 4/3$.

Задача К17.23.

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

Задача К17.24.

$\omega_{DC_z} = 15\frac{1}{c}$, $OA = 6$, $AB = 3$, $OA \perp AB$,
$BC = 5$, $R = 2$, $\text{tg}\,\beta = 3/4$.

Задача К17.25.

$\omega_{DC_z} = 16\frac{1}{c}$, $OA = 4$, $AB = 3$, $OA \perp AB$,
$BC = 10$, $R = 2.5$, $\text{tg}\,\beta = 4/3$.

Задача К17.26.
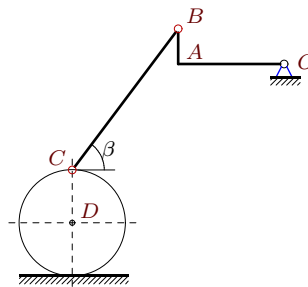
$\omega_{OA_z} = 3\frac{1}{c}$, $OA = 6$, $AB = 2$, $OA \perp AB$,
$BC = 10$, $R = 3$, $\text{tg}\,\beta = 4/3$.

Задача К17.27.
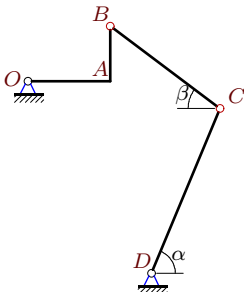
$\omega_{OA_z} = 63\frac{1}{c}$, $OA = 6$, $AB = 4$, $OA \perp AB$,
$BC = 10$, $DC = 13$, $\text{tg}\,\beta = 3/4$, $\text{tg}\,\alpha = 12/5$

Задача К17.28.
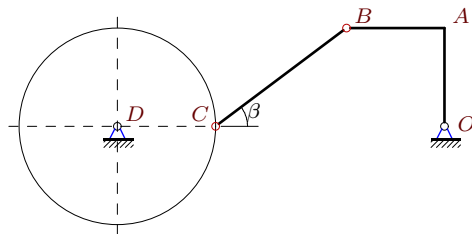
$\omega_{DC_z} = 7\frac{1}{c}$, $OA = AB = 3$, $OA \perp AB$,
$BC = 5$, $R = 3$, $\text{tg}\,\beta = 3/4$.

Задача К17.29.

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

Задача К17.30.

$\omega_{DC_z} = 13\frac{1}{c}$, $OA = 5$, $AB = 2$, $OA \perp AB$,
$BC = 5$, $R = 2$, $\text{tg}\,\beta = 4/3$.

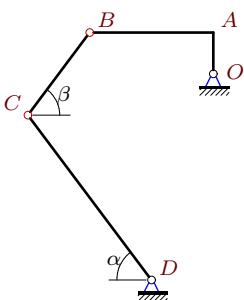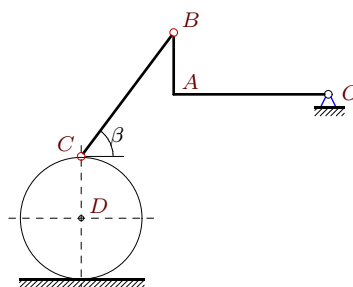| №	ω_{OAz}	ω_{BCz}	ω_{CDz}	v_A	v_B	v_C
1	–	–1	1	4	5	6
2	–6	–	20	18	40.25	60
3	–	–62	26	126	398.45	338
4	–	–9	25	36	60	75
5	–	–5	6	20	25	30
6	–8	–4	–	16	35.78	44
7	–	–23	11	63	159.93	143
8	10	–	12	20	36.06	60
9	5	–	12	20	36.06	60
10	28	–	17	112	201.91	221
11	–	–15	29	100	116.62	145
12	–	–69	74	784	852.97	962
13	–8	–2	–	16	43.08	52
14	4	–	7	16	22.63	28
15	–	–19	20	126	281.74	260
16	–	–2	13	12	37.95	52
17	–	–25	32	60	96.05	160
18	–	–7	12	42	70	84
19	–4	–3	–	12	16.97	21
20	–	–4	9	12	23.32	36
21	8	–4	–	32	35.78	44
22	–8	–4	–	16	50.6	60
23	–	–5	8	56	89.64	104
24	8	–12	–	48	53.67	60
25	10	–5	–	40	50	80
26	–	–3	5	18	18.97	30
27	–	–26	34	378	454.3	442
28	–3	–3	–	9	12.73	21
29	8	–6	–	16	50.6	50
30	6	–10	–	30	32.31	52

K17 файл   o17k5A