

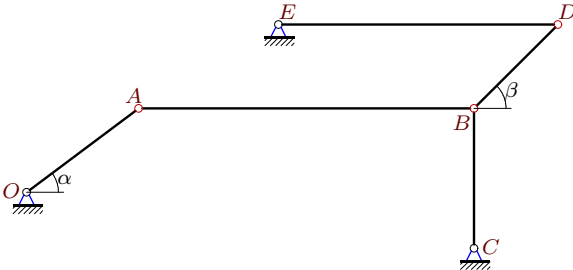
Кинематический анализ механизма (5 звеньев)

В указанном положении механизма задана угловая скорость одного из его звеньев. Длины звеньев даны в сантиметрах. Найти угловые скорости звеньев механизма.

Кирсанов М.Н. **Решебник. Теоретическая механика**/Под ред. А. И. Кириллова.– М.:ФИЗМАТЛИТ, 2002.– 384 с. (с.158.)

Задача 23.1.

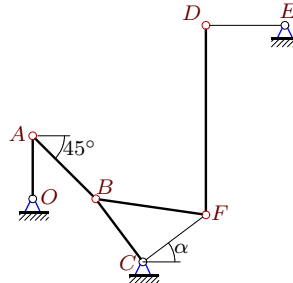
12



$\omega_{OA} = 30$ рад/с, $OA = 5$, $AB = 12$, $BC = 5$,
 $DE = 10$, $BD = 3\sqrt{2}$, $\cos \alpha = 0.8$, $\beta = 45^\circ$.

Задача 23.2.

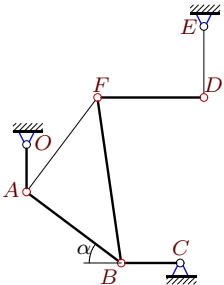
12



$\omega_{OA} = 5$ рад/с, $OA = 4$, $DF = 12$, $BC = CF = 5$,
 $AB = 4\sqrt{2}$, $DE = 5$, $\cos \alpha = 0.8$, $CB \perp CF$.

Задача 23.3.

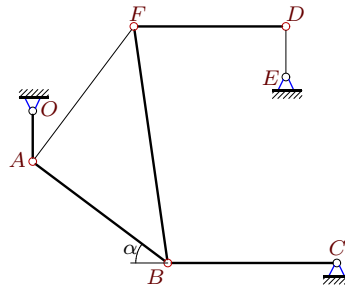
12



$\omega_{OA} = 45$ рад/с, $OA = 4$, $AB = AF = 10$,
 $BC = 5$, $DF = 9$, $DE = 6$, $\cos \alpha = 0.8$, $AB \perp AF$.

Задача 23.4.

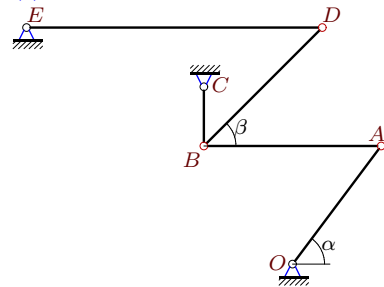
12



$\omega_{OA} = 30$ рад/с, $OA = 3$, $AB = AF = 10$,
 $BC = 10$, $DF = 9$, $DE = 3$, $\cos \alpha = 0.8$, $AB \perp AF$.

Задача 23.5.

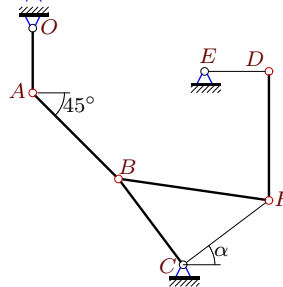
12



$\omega_{OA} = 10$ рад/с, $OA = 5$, $AB = 6$, $BC = 2$,
 $DE = 10$, $BD = 4\sqrt{2}$, $\cos \alpha = 0.6$, $\beta = 45^\circ$.

Задача 23.6.

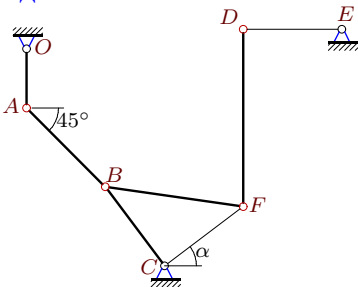
12



$\omega_{OA} = 4$ рад/с, $OA = 3$, $DF = 6$, $BC = CF = 5$,
 $AB = 4\sqrt{2}$, $DE = 3$, $\cos \alpha = 0.8$, $CB \perp CF$.

Задача 23.7.

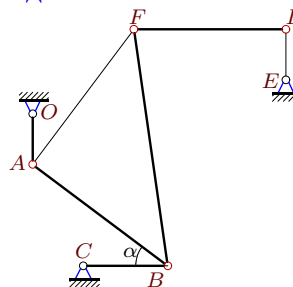
12



$\omega_{OA} = 20$ рад/с, $OA = 3$, $DF = 9$, $BC = CF = 5$,
 $AB = 4\sqrt{2}$, $DE = 5$, $\cos \alpha = 0.8$, $CB \perp CF$.

Задача 23.8.

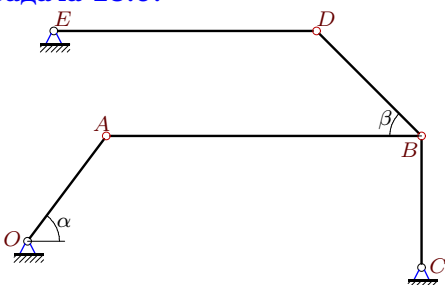
12



$\omega_{OA} = 30$ рад/с, $OA = 3$, $AB = AF = 10$,
 $BC = 5$, $DF = 9$, $DE = 3$, $\cos \alpha = 0.8$, $AB \perp AF$.

Задача 23.9.

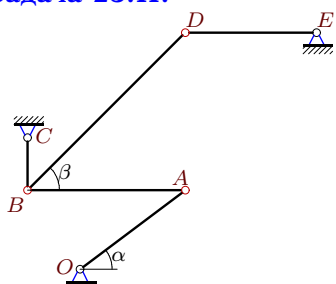
12



$\omega_{OA} = 20$ рад/с, $OA = 5$, $AB = 12$, $BC = 5$,
 $DE = 10$, $BD = 4\sqrt{2}$, $\cos \alpha = 0.6$, $\beta = 45^\circ$.

Задача 23.11.

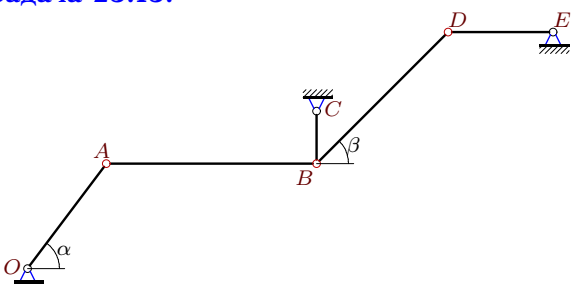
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$\omega_{OA} = 30$ рад/с, $OA = 5$, $AB = 6$, $BC = 2$,
 $DE = 5$, $BD = 6\sqrt{2}$, $\cos \alpha = 0.8$, $\beta = 45^\circ$.

Задача 23.13.

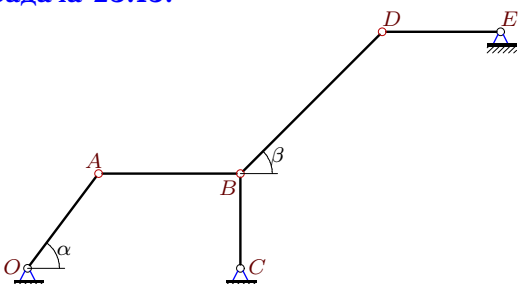
12



$\omega_{OA} = 40$ рад/с, $OA = 5$, $AB = 8$, $BC = 2$,
 $DE = 4$, $BD = 5\sqrt{2}$, $\cos \alpha = 0.6$, $\beta = 45^\circ$.

Задача 23.15.

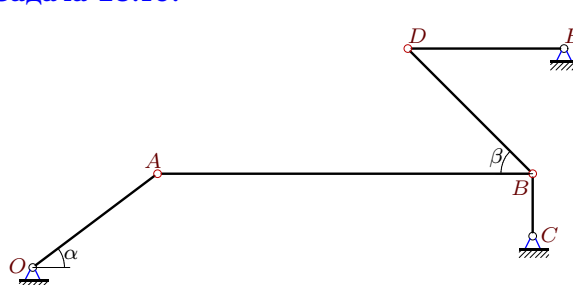
12



$\omega_{OA} = 30$ рад/с, $OA = 5$, $AB = 6$, $BC = 4$,
 $DE = 5$, $BD = 6\sqrt{2}$, $\cos \alpha = 0.6$, $\beta = 45^\circ$.

Задача 23.10.

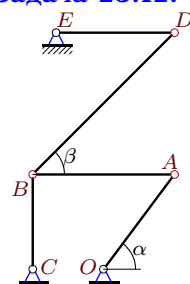
12



$\omega_{OA} = 60$ рад/с, $OA = 5$, $AB = 12$, $BC = 2$,
 $DE = 5$, $BD = 4\sqrt{2}$, $\cos \alpha = 0.8$, $\beta = 45^\circ$.

Задача 23.12.

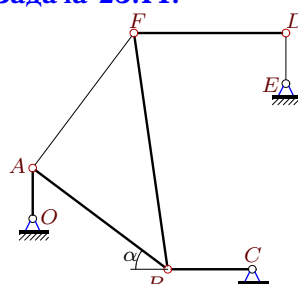
12



$\omega_{OA} = 30$ рад/с, $OA = 5$, $AB = 6$, $BC = 4$,
 $DE = 5$, $BD = 6\sqrt{2}$, $\cos \alpha = 0.6$, $\beta = 45^\circ$.

Задача 23.14.

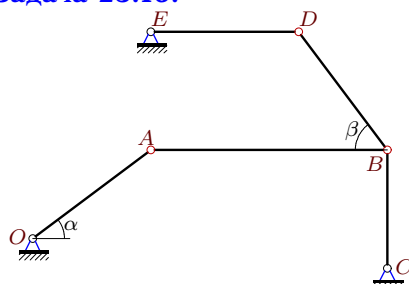
12



$\omega_{OA} = 30$ рад/с, $OA = 3$, $AB=AF=10$,
 $BC = 5$, $DF=9$, $DE=3$, $\cos \alpha=0.8$, $AB \perp AF$.

Задача 23.16.

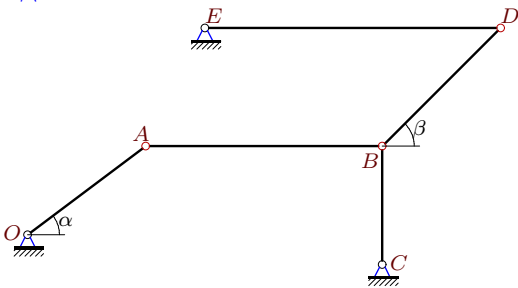
12



$\omega_{OA} = 20$ рад/с, $OA = 5$, $AB = 8$, $BC = 4$,
 $DE = 5$, $BD = 5$, $\cos \alpha = 0.8$, $\cos \beta = 0.6$.

Задача 23.17.

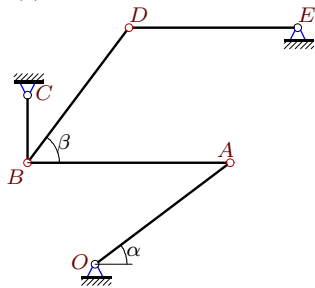
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$\omega_{OA} = 20$ рад/с, $OA = 5$, $AB = 8$, $BC = 4$,
 $DE = 10$, $BD = 4\sqrt{2}$, $\cos \alpha = 0.8$, $\beta = 45^\circ$.

Задача 23.19.

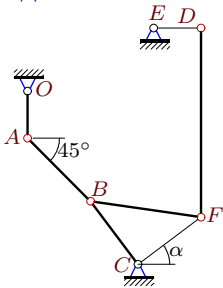
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$\omega_{OA} = 60$ рад/с, $OA = 5$, $AB = 6$, $BC = 2$,
 $DE = 5$, $BD = 5$, $\cos \alpha = 0.8$, $\cos \beta = 0.6$.

Задача 23.21.

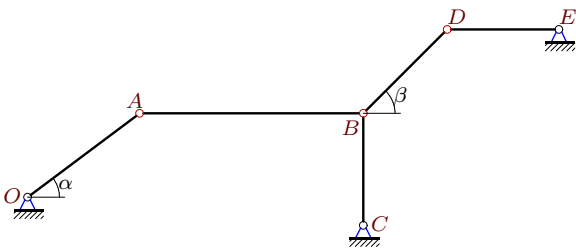
12



$\omega_{OA} = 4$ рад/с, $OA = 3$, $DF = 12$, $BC = CF = 5$,
 $AB = 4\sqrt{2}$, $DE = 3$, $\cos \alpha = 0.8$, $CB \perp CF$.

Задача 23.23.

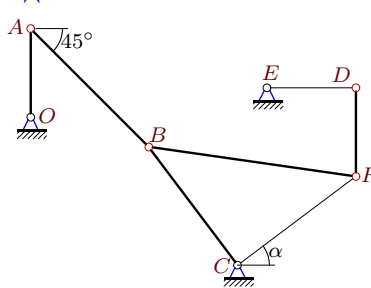
12



$\omega_{OA} = 4$ рад/с, $OA = 5$, $AB = 8$, $BC = 4$,
 $DE = 4$, $BD = 3\sqrt{2}$, $\cos \alpha = 0.8$, $\beta = 45^\circ$.

Задача 23.18.

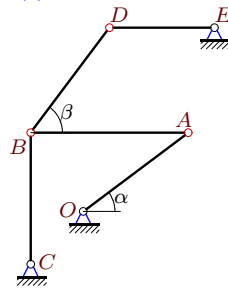
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$\omega_{OA} = 4$ рад/с, $OA = 3$, $DF = 3$, $BC = CF = 5$,
 $AB = 4\sqrt{2}$, $DE = 3$, $\cos \alpha = 0.8$, $CB \perp CF$.

Задача 23.20.

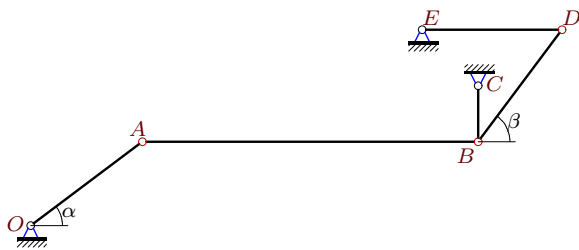
12



$\omega_{OA} = 240$ рад/с, $OA = 5$, $AB = 6$, $BC = 5$,
 $DE = 4$, $BD = 5$, $\cos \alpha = 0.8$, $\cos \beta = 0.6$.

Задача 23.22.

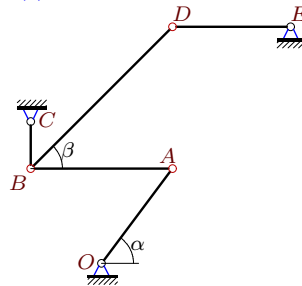
12



$\omega_{OA} = 60$ рад/с, $OA = 5$, $AB = 12$, $BC = 2$,
 $DE = 5$, $BD = 5$, $\cos \alpha = 0.8$, $\cos \beta = 0.6$.

Задача 23.24.

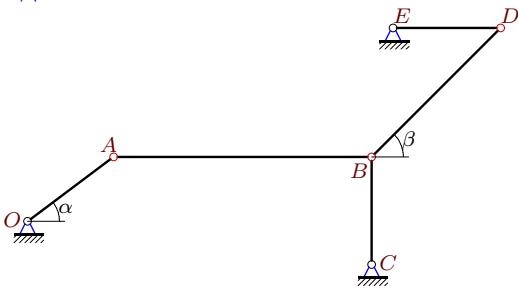
12



$\omega_{OA} = 30$ рад/с, $OA = 5$, $AB = 6$, $BC = 2$,
 $DE = 5$, $BD = 6\sqrt{2}$, $\cos \alpha = 0.6$, $\beta = 45^\circ$.

Задача 23.25.

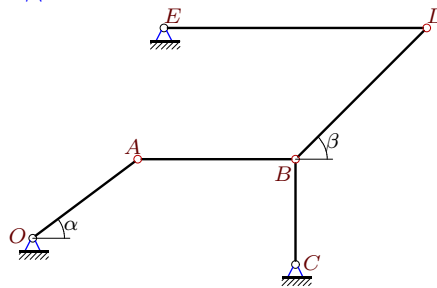
12



$\omega_{OA} = 30$ рад/с, $OA = 5$, $AB = 12$, $BC = 5$, $DE = 5$, $BD = 6\sqrt{2}$, $\cos \alpha = 0.8$, $\beta = 45^\circ$.

Задача 23.26.

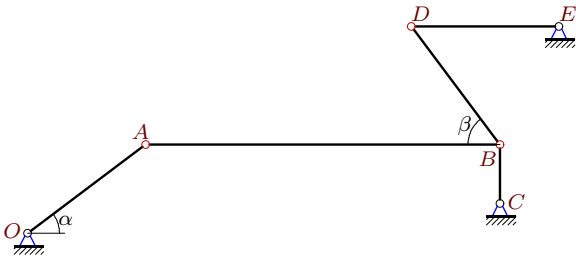
12



$\omega_{OA} = 60$ рад/с, $OA = 5$, $AB = 6$, $BC = 4$, $DE = 10$, $BD = 5\sqrt{2}$, $\cos \alpha = 0.8$, $\beta = 45^\circ$.

Задача 23.27.

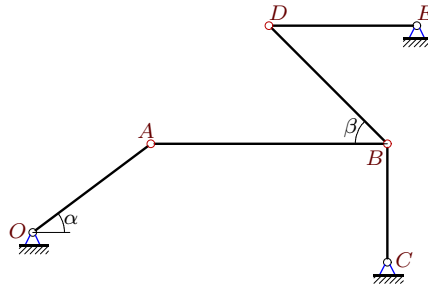
12



$\omega_{OA} = 60$ рад/с, $OA = 5$, $AB = 12$, $BC = 2$, $DE = 5$, $BD = 5$, $\cos \alpha = 0.8$, $\cos \beta = 0.6$.

Задача 23.28.

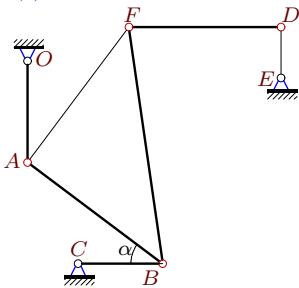
12



$\omega_{OA} = 20$ рад/с, $OA = 5$, $AB = 8$, $BC = 4$, $DE = 5$, $BD = 4\sqrt{2}$, $\cos \alpha = 0.8$, $\beta = 45^\circ$.

Задача 23.29.

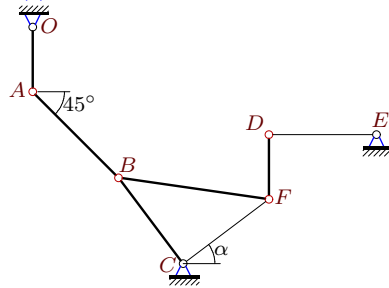
12



$\omega_{OA} = 15$ рад/с, $OA = 6$, $AB = AF = 10$, $BC = 5$, $DF = 9$, $DE = 3$, $\cos \alpha = 0.8$, $AB \perp AF$.

Задача 23.30.

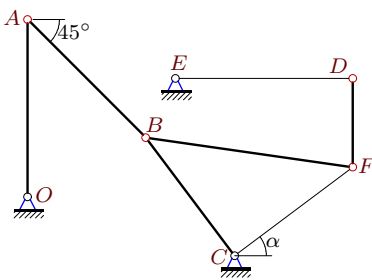
12



$\omega_{OA} = 20$ рад/с, $OA = 3$, $DF = 3$, $BC = CF = 5$, $AB = 4\sqrt{2}$, $DE = 5$, $\cos \alpha = 0.8$, $CB \perp CF$.

Задача 23.31.

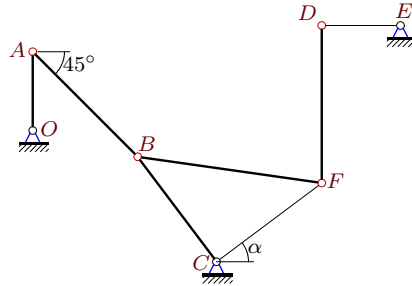
12



$\omega_{OA} = 2$ рад/с, $OA = 6$, $DF = 3$, $BC = CF = 5$, $AB = 4\sqrt{2}$, $DE = 6$, $\cos \alpha = 0.8$, $CB \perp CF$.

Задача 23.32.

12



$\omega_{OA} = 4$ рад/с, $OA = 3$, $DF = 6$, $BC = CF = 5$, $AB = 4\sqrt{2}$, $DE = 3$, $\cos \alpha = 0.8$, $CB \perp CF$.

Кинематический анализ механизма (5 звеньев)

№	ω_{AB}	ω_{BC}	ω_{DB}	ω_{DF}	ω_{DE}
1	10	18	30	—	9
2	15	20	—	5	16
3	30	48	—	20	70
4	15	12	—	10	70
5	5	20	10	—	4
6	9	12	—	6	16
7	45	60	—	20	48
8	15	24	—	10	70
9	5	16	20	—	8
10	20	90	45	—	36
11	20	45	15	—	18
12	15	30	20	—	24
13	15	80	32	—	40
14	15	24	—	10	70
15	15	30	20	—	24
16	10	15	15	—	9
17	10	15	15	—	6
18	9	12	—	12	16
19	40	90	45	—	27
20	160	144	180	—	135
21	9	12	—	3	16
22	20	90	45	—	27
23	2	3	4	—	3
24	15	60	20	—	24
25	10	18	15	—	18
26	40	45	36	—	18
27	20	90	45	—	27
28	10	15	15	—	12
29	15	24	—	10	70
30	45	60	—	60	48
31	9	12	—	12	8
32	9	12	—	6	16