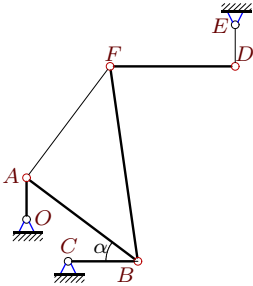


Кинематический анализ механизма (5 звеньев)

В указанном положении механизма задана угловая скорость одного из его звеньев. Длины звеньев даны в сантиметрах. Стержни, направление которых не указано, считать вертикальными или горизонтальными. Найти угловые скорости звеньев механизма.

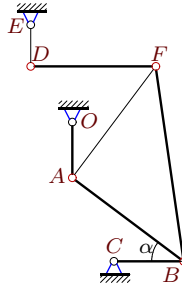
Кирсанов М.Н. **Решебник. Теоретическая механика**/Под ред. А. И. Кириллова. – М.:ФИЗМАТЛИТ, 2008. – 384 с. (с.158.)

Задача 23.1.



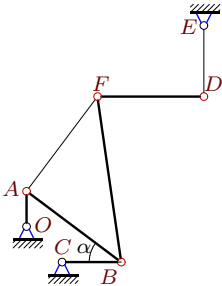
$\omega_{OA} = 30$ рад/с, $OA = 3$, $AB=AF=10$,
 $BC = 5$, $DF=9$, $DE=3$, $\cos \alpha=0.8$, $AB \perp AF$.

Задача 23.2.



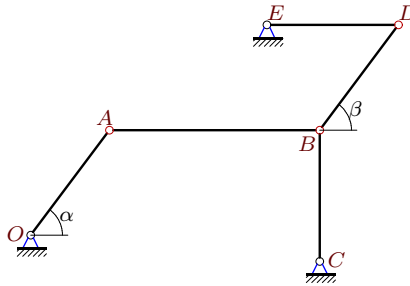
$\omega_{OA} = 45$ рад/с, $OA = 4$, $AB=AF=10$,
 $BC = 5$, $DF=9$, $DE=3$, $\cos \alpha=0.8$, $AB \perp AF$.

Задача 23.3.



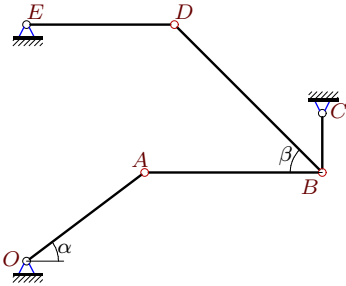
$\omega_{OA} = 30$ рад/с, $OA = 3$, $AB=AF=10$,
 $BC = 5$, $DF=9$, $DE=6$, $\cos \alpha=0.8$, $AB \perp AF$.

Задача 23.4.



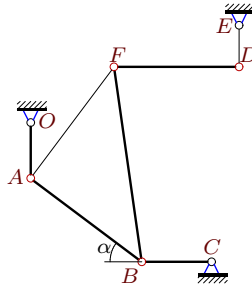
$\omega_{OA} = 40$ рад/с, $OA = 5$, $AB = 8$, $BC = 5$,
 $DE = 5$, $BD = 5$, $\cos \alpha = 0.6$, $\cos \beta = 0.6$.

Задача 23.5.



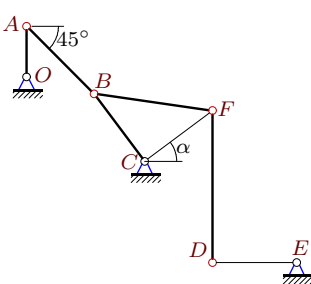
$\omega_{OA} = 30$ рад/с, $OA = 5$, $AB = 6$, $BC = 2$,
 $DE = 5$, $BD = 5\sqrt{2}$, $\cos \alpha = 0.8$, $\beta = 45^\circ$.

Задача 23.6.



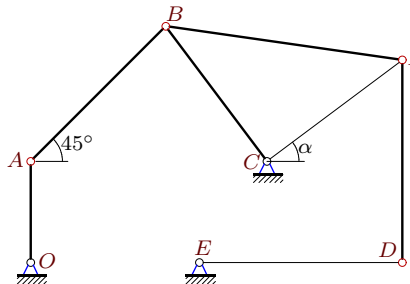
$\omega_{OA} = 45$ рад/с, $OA = 4$, $AB=AF=10$,
 $BC = 5$, $DF=9$, $DE=3$, $\cos \alpha=0.8$, $AB \perp AF$.

Задача 23.7.



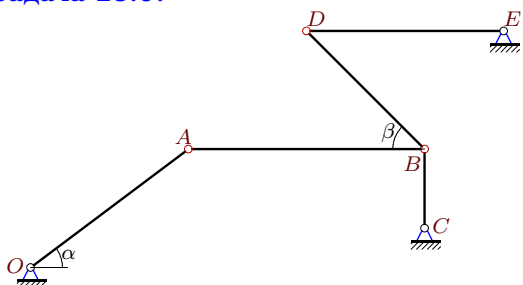
$\omega_{OA} = 20$ рад/с, $OA = 3$, $DF=9$, $BC=CF=5$,
 $AB = 4\sqrt{2}$, $DE=5$, $\cos \alpha=0.8$, $CB \perp CF$.

Задача 23.8.



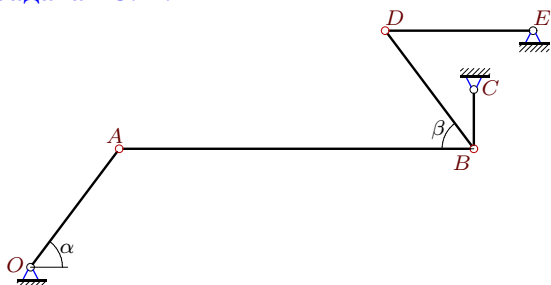
$\omega_{OA} = 28$ рад/с, $OA = 3$, $DF=6$, $BC=CF=5$,
 $AB = 4\sqrt{2}$, $DE=6$, $\cos \alpha=0.8$, $CB \perp CF$.

Задача 23.9.



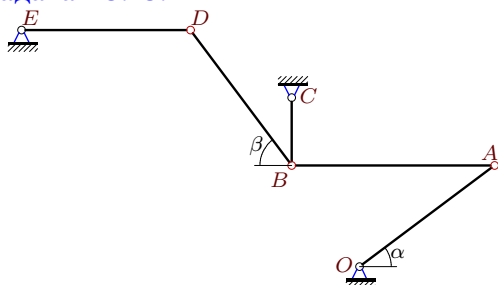
$\omega_{OA} = 30$ рад/с, $OA = 5$, $AB = 6$, $BC = 2$,
 $DE = 5$, $BD = 3\sqrt{2}$, $\cos \alpha = 0.8$, $\beta = 45^\circ$.

Задача 23.11.



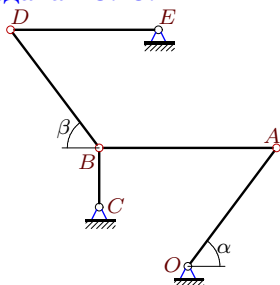
$\omega_{OA} = 20$ рад/с, $OA = 5$, $AB = 12$, $BC = 2$,
 $DE = 5$, $BD = 5$, $\cos \alpha = 0.6$, $\cos \beta = 0.6$.

Задача 23.13.



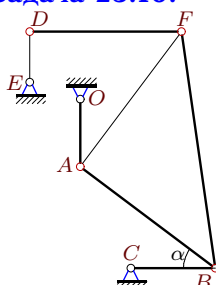
$\omega_{OA} = 60$ рад/с, $OA = 5$, $AB = 6$, $BC = 2$,
 $DE = 5$, $BD = 5$, $\cos \alpha = 0.8$, $\cos \beta = 0.6$.

Задача 23.15.



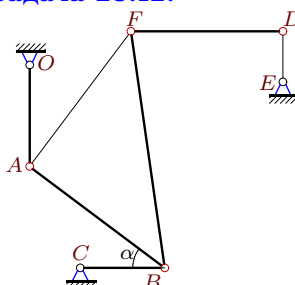
$\omega_{OA} = 10$ рад/с, $OA = 5$, $AB = 6$, $BC = 2$,
 $DE = 5$, $BD = 5$, $\cos \alpha = 0.6$, $\cos \beta = 0.6$.

Задача 23.10.



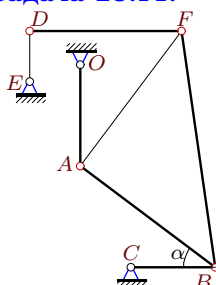
$\omega_{OA} = 45$ рад/с, $OA = 4$, $AB=AF=10$,
 $BC = 5$, $DF=9$, $DE=3$, $\cos \alpha=0.8$, $AB \perp AF$.

Задача 23.12.



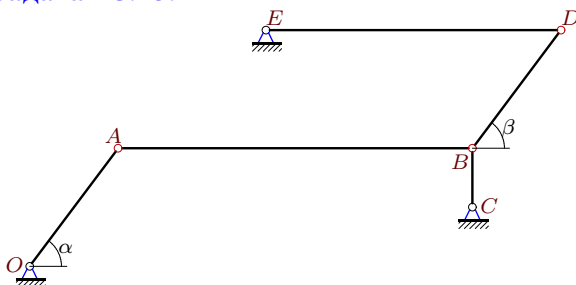
$\omega_{OA} = 15$ рад/с, $OA = 6$, $AB=AF=10$,
 $BC = 5$, $DF=9$, $DE=3$, $\cos \alpha=0.8$, $AB \perp AF$.

Задача 23.14.



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

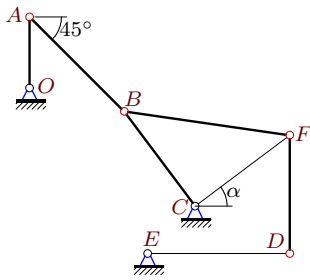
Задача 23.16.



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

Задача 23.17.

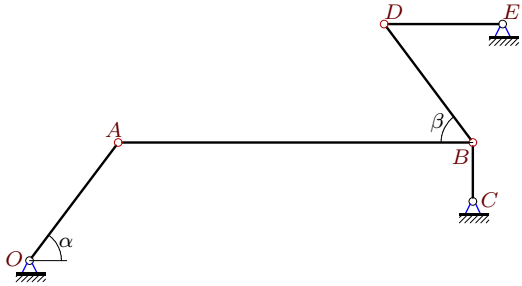
1



$\omega_{OA} = 20$ рад/с, $OA = 3$, $DF = 5$, $BC = CF = 5$,
 $AB = 4\sqrt{2}$, $DE = 6$, $\cos \alpha = 0.8$, $CB \perp CF$.

Задача 23.19.

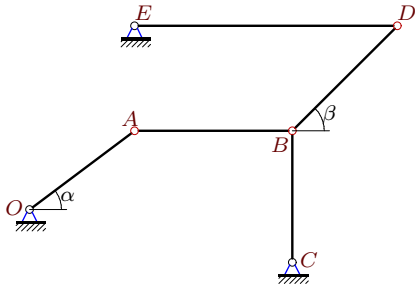
1



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

Задача 23.21.

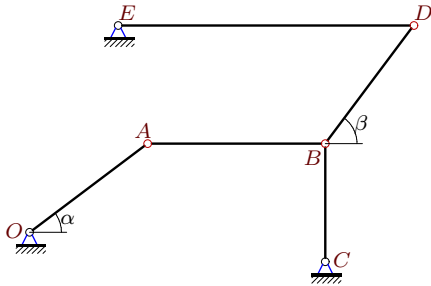
1



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

Задача 23.23.

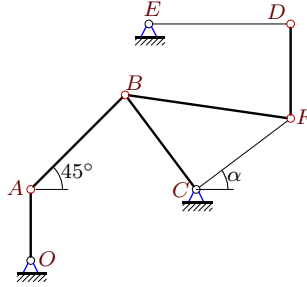
1



$\omega_{OA} = 120$ рад/с, $OA = 5$, $AB = 6$, $BC = 4$,
 $DE = 10$, $BD = 5$, $\cos \alpha = 0.8$, $\cos \beta = 0.6$.

Задача 23.18.

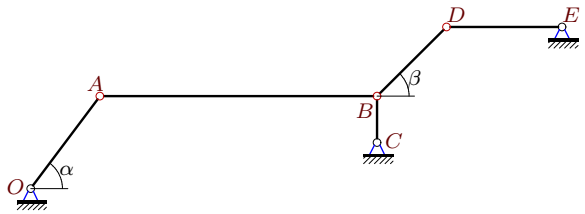
1



$\omega_{OA} = 28$ рад/с, $OA = 3$, $DF = 4$, $BC = CF = 5$,
 $AB = 4\sqrt{2}$, $DE = 6$, $\cos \alpha = 0.8$, $CB \perp CF$.

Задача 23.20.

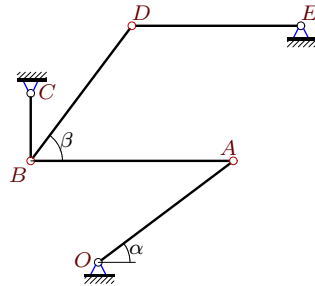
1



$\omega_{OA} = 60$ рад/с, $OA = 5$, $AB = 12$, $BC = 2$,
 $DE = 5$, $BD = 3\sqrt{2}$, $\cos \alpha = 0.6$, $\beta = 45^\circ$.

Задача 23.22.

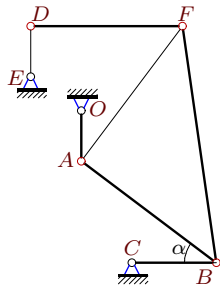
1



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

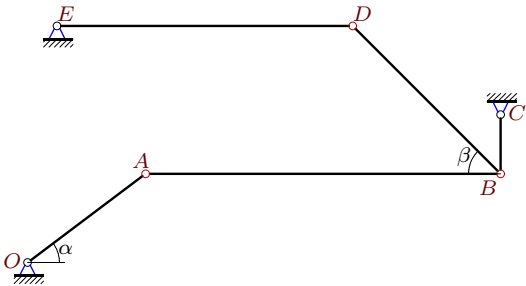
Задача 23.24.

1



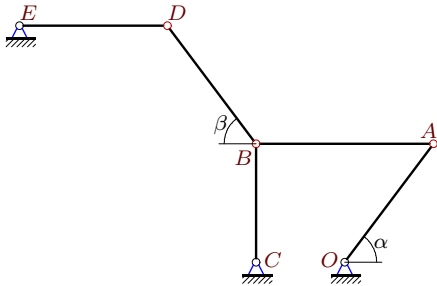
$\omega_{OA} = 30$ рад/с, $OA = 3$, $AB = AF = 10$,
 $BC = 5$, $DF = 9$, $DE = 3$, $\cos \alpha = 0.8$, $AB \perp AF$.

Задача 23.25.



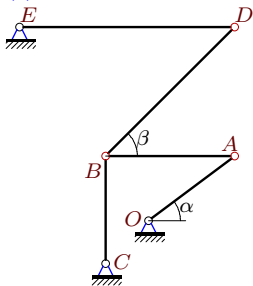
$\omega_{OA} = 30$ рад/с, $OA = 5$, $AB = 12$, $BC = 2$,
 $DE = 10$, $BD = 5\sqrt{2}$, $\cos \alpha = 0.8$, $\beta = 45^\circ$.

Задача 23.27.



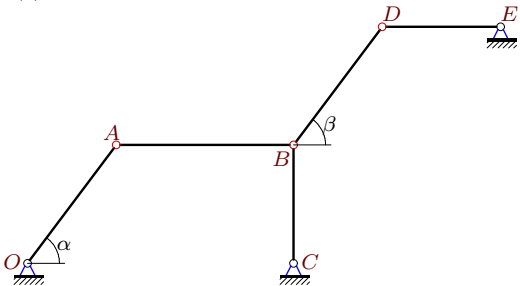
$\omega_{OA} = 10$ рад/с, $OA = 5$, $AB = 6$, $BC = 4$,
 $DE = 5$, $BD = 5$, $\cos \alpha = 0.6$, $\cos \beta = 0.6$.

Задача 23.29.



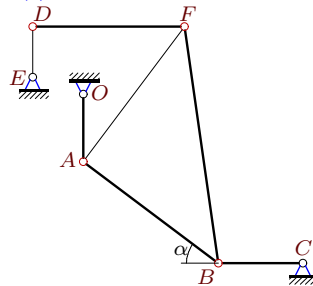
$\omega_{OA} = 30$ рад/с, $OA = 5$, $AB = 6$, $BC = 5$,
 $DE = 10$, $BD = 6\sqrt{2}$, $\cos \alpha = 0.8$, $\beta = 45^\circ$.

Задача 23.31.



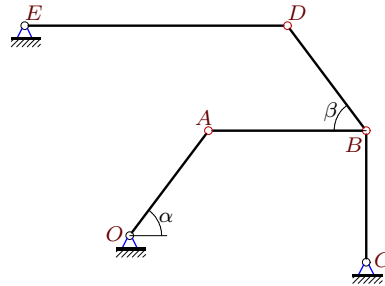
$\omega_{OA} = 4$ рад/с, $OA = 5$, $AB = 6$, $BC = 4$,
 $DE = 4$, $BD = 5$, $\cos \alpha = 0.6$, $\cos \beta = 0.6$.

Задача 23.26.



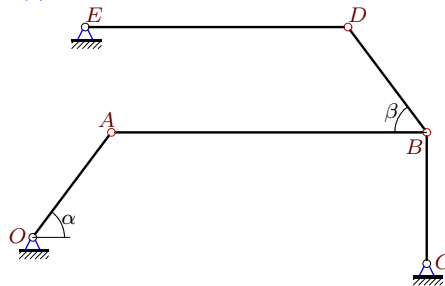
$\omega_{OA} = 45$ рад/с, $OA = 4$, $AB = AF = 10$,
 $BC = 5$, $DF = 9$, $DE = 3$, $\cos \alpha = 0.8$, $AB \perp AF$.

Задача 23.28.



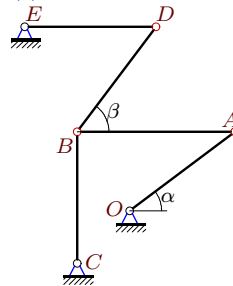
$\omega_{OA} = 10$ рад/с, $OA = 5$, $AB = 6$, $BC = 5$,
 $DE = 10$, $BD = 5$, $\cos \alpha = 0.6$, $\cos \beta = 0.6$.

Задача 23.30.



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

Задача 23.32.



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

Кинематический анализ механизма (5 звеньев)

№	ω_{AB}	ω_{BC}	ω_{DB}	ω_{DF}	ω_{DE}
1	15	24	—	10	70
2	30	48	—	20	140
3	15	24	—	10	35
4	15	32	40	—	24
5	20	45	18	—	18
6	30	48	—	20	140
7	45	60	—	20	48
8	9	12	—	6	8
9	20	45	30	—	18
10	30	48	—	20	140
11	5	40	20	—	12
12	15	24	—	10	70
13	40	90	45	—	27
14	15	24	—	10	70
15	5	20	10	—	6
16	5	40	20	—	6
17	45	60	—	36	40
18	9	12	—	9	8
19	1	8	4	—	3
20	15	120	80	—	48
21	40	36	45	—	18
22	40	90	45	—	27
23	80	90	90	—	27
24	15	24	—	10	70
25	10	45	18	—	9
26	30	48	—	20	140
27	5	10	10	—	6
28	5	8	10	—	3
29	20	18	15	—	9
30	5	16	20	—	6
31	2	4	4	—	3
32	40	36	45	—	27