

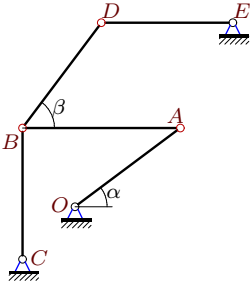
## Кинематический анализ механизма (5 звеньев)

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.

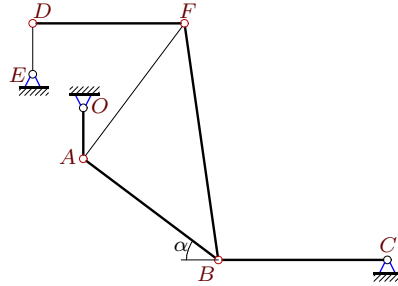
16



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

### Задача 23.2.

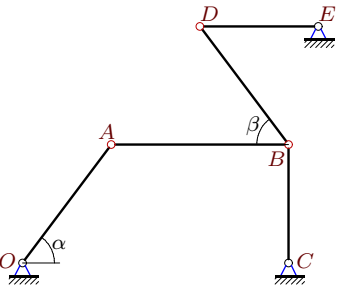
16



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

### Задача 23.3.

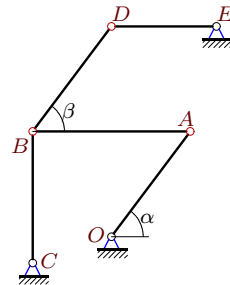
16



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

### Задача 23.4.

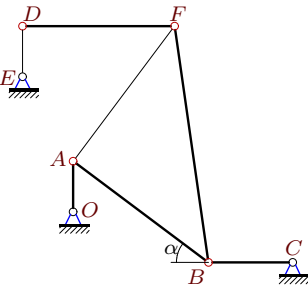
16



$\omega_{OA} = 20$  рад/с,  $OA = 5$ ,  $AB = 6$ ,  $BC = 5$ ,  $DE = 4$ ,  $BD = 5$ ,  $\cos \alpha = 0.6$ ,  $\cos \beta = 0.6$ .

### Задача 23.5.

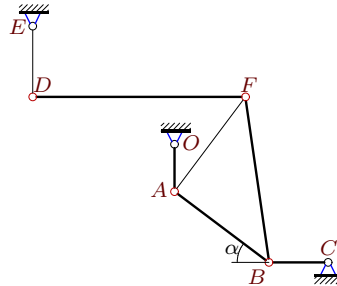
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$\omega_{OA} = 30$  рад/с,  $OA = 3$ ,  $AB=BF=10$ ,  $BC = 5$ ,  $DF=9$ ,  $DE=3$ ,  $\cos \alpha=0.8$ ,  $AB \perp AF$ .

### Задача 23.6.

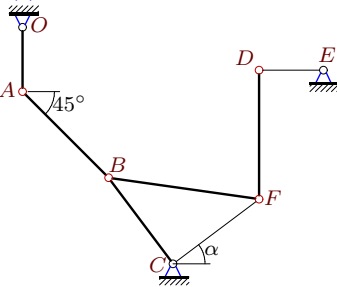
16



$\omega_{OA} = 45$  рад/с,  $OA = 4$ ,  $AB=BF=10$ ,  $BC = 5$ ,  $DF=18$ ,  $DE=6$ ,  $\cos \alpha=0.8$ ,  $AB \perp AF$ .

### Задача 23.7.

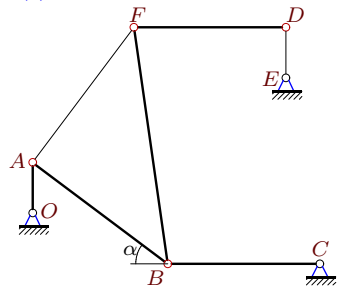
16



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

### Задача 23.8.

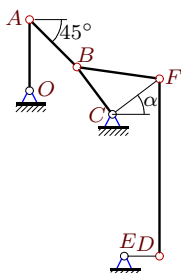
16



$\omega_{OA} = 18$  рад/с,  $OA = 3$ ,  $AB=BF=10$ ,  $BC = 9$ ,  $DF=9$ ,  $DE=3$ ,  $\cos \alpha=0.8$ ,  $AB \perp AF$ .

**Задача 23.9.**

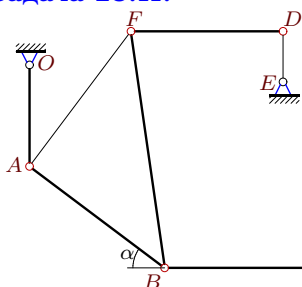
16



$\omega_{OA} = 10$  рад/с,  $OA = 6$ ,  $DF=15$ ,  $BC=CF=5$ ,  
 $AB = 4\sqrt{2}$ ,  $DE=3$ ,  $\cos \alpha=0.8$ ,  $CB \perp CF$ .

**Задача 23.11.**

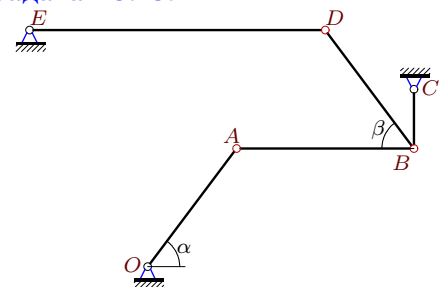
16



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

**Задача 23.13.**

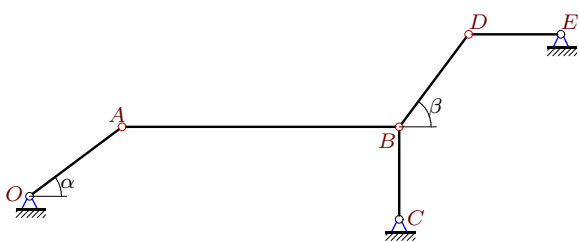
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$\omega_{OA} = 10$  рад/с,  $OA = 5$ ,  $AB = 6$ ,  $BC = 2$ ,  
 $DE = 10$ ,  $BD = 5$ ,  $\cos \alpha = 0.6$ ,  $\cos \beta = 0.6$ .

**Задача 23.15.**

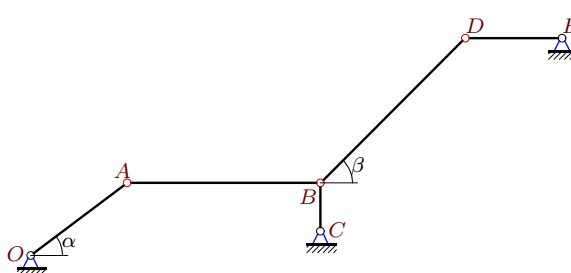
16



$\omega_{OA} = 48$  рад/с,  $OA = 5$ ,  $AB = 12$ ,  $BC = 4$ ,  
 $DE = 4$ ,  $BD = 5$ ,  $\cos \alpha = 0.8$ ,  $\cos \beta = 0.6$ .

**Задача 23.10.**

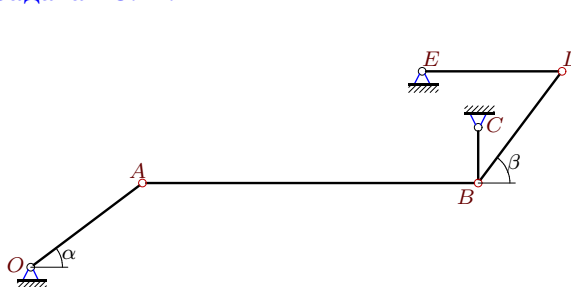
16



$\omega_{OA} = 4$  рад/с,  $OA = 5$ ,  $AB = 8$ ,  $BC = 2$ ,  
 $DE = 4$ ,  $BD = 6\sqrt{2}$ ,  $\cos \alpha = 0.8$ ,  $\beta = 45^\circ$ .

**Задача 23.12.**

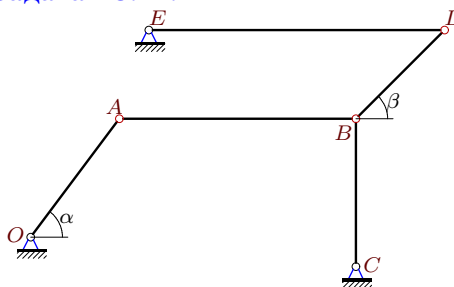
16



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

**Задача 23.14.**

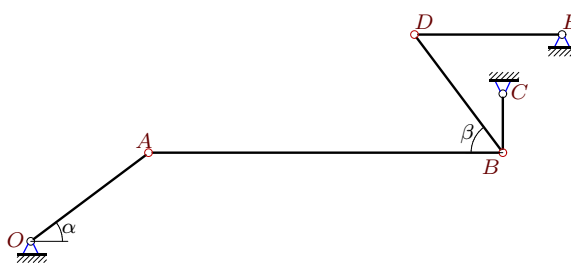
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$\omega_{OA} = 120$  рад/с,  $OA = 5$ ,  $AB = 8$ ,  $BC = 5$ ,  
 $DE = 10$ ,  $BD = 3\sqrt{2}$ ,  $\cos \alpha = 0.6$ ,  $\beta = 45^\circ$ .

**Задача 23.16.**

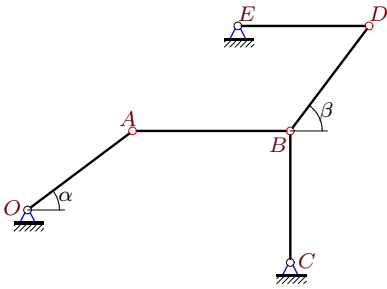
16



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

**Задача 23.17.**

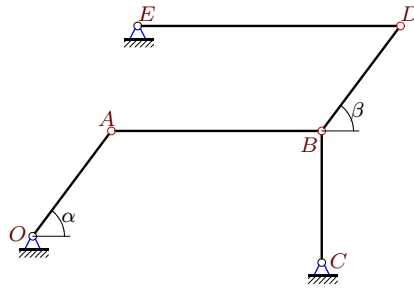
16



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

**Задача 23.18.**

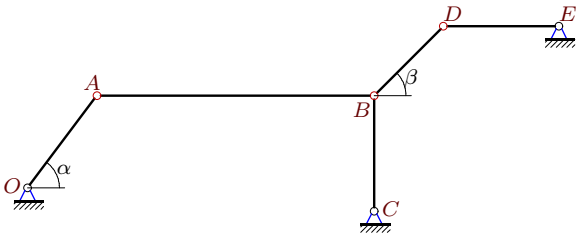
16



$\omega_{OA} = 40$  рад/с,  $OA = 5$ ,  $AB = 8$ ,  $BC = 5$ ,  
 $DE = 10$ ,  $BD = 5$ ,  $\cos \alpha = 0.6$ ,  $\cos \beta = 0.6$ .

**Задача 23.19.**

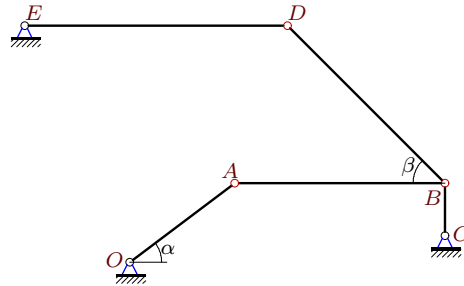
16



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

**Задача 23.20.**

16



$\omega_{OA} = 10$  рад/с,  $OA = 5$ ,  $AB = 8$ ,  $BC = 2$ ,  
 $DE = 10$ ,  $BD = 6\sqrt{2}$ ,  $\cos \alpha = 0.8$ ,  $\beta = 45^\circ$ .

**Кинематический анализ механизма (5 звеньев)**

№	$\omega_{AB}$	$\omega_{BC}$	$\omega_{DB}$	$\omega_{DF}$	$\omega_{DE}$
1	40	36	45	—	27
2	15	12	—	10	70
3	2	4	4	—	3
4	10	16	20	—	15
5	15	24	—	10	70
6	30	48	—	10	70
7	9	12	—	6	16
8	9	8	—	6	42
9	45	60	—	12	80
10	2	6	2	—	3
11	15	12	—	10	70
12	20	90	45	—	27
13	5	20	10	—	3
14	45	96	160	—	48
15	16	36	36	—	27
16	20	90	45	—	27
17	40	36	45	—	27
18	15	32	40	—	12
19	15	48	80	—	48
20	5	15	5	—	3