

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. 14

$\omega_{OA} = 2 \text{ рад/с}$, $OA = 6$, $DF = 9$, $BC = CF = 5$,
 $AB = 4\sqrt{2}$, $DE = 3$, $\cos \alpha = 0.8$, $CB \perp CF$.

Задача 23.2. 14

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

Задача 23.3. 14

$\omega_{OA} = 4 \text{ рад/с}$, $OA = 7$, $AB = 4$, $BF = FC = 5$,
 $CE = 2$, $DF = 4$, $\cos \alpha = 0.8$, $FB \perp CF$.

Задача 23.4. 14

$\omega_{OA} = 18 \text{ рад/с}$, $OA = 3$, $AB = AF = 10$,
 $BC = 9$, $DF = 9$, $DE = 6$, $\cos \alpha = 0.8$, $AB \perp AF$.

Задача 23.5. 14

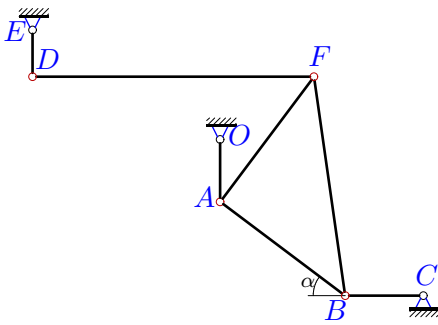
$\omega_{OA} = 4 \text{ рад/с}$, $OA = 3$, $DF = 6$, $BC = CF = 5$,
 $AB = 4\sqrt{2}$, $DE = 3$, $\cos \alpha = 0.8$, $CB \perp CF$.

Задача 23.6. 14

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

Задача 23.7.

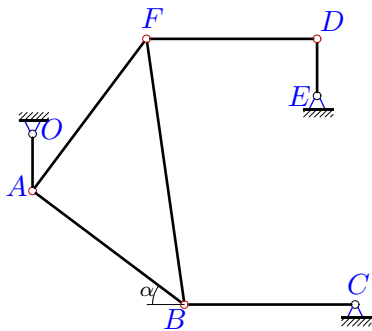
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$\omega_{OA} = 45 \text{ рад/с}$, $OA = 4$, $AB = AF = 10$,
 $BC = 5$, $DF = 18$, $DE = 3$, $\cos \alpha = 0.8$, $AB \perp AF$.

Задача 23.9.

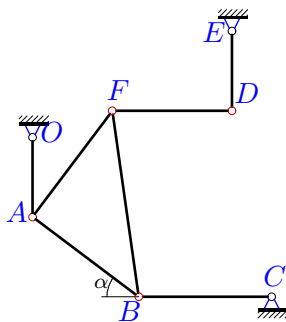
14



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

Задача 23.11.

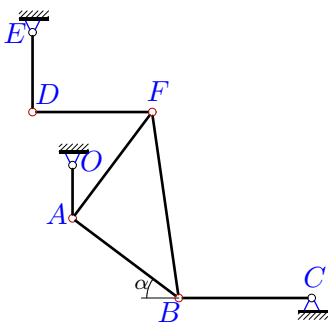
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$\omega_{OA} = 15 \text{ рад/с}$, $OA = 6$, $AB = AF = 10$,
 $BC = 10$, $DF = 9$, $DE = 6$, $\cos \alpha = 0.8$, $AB \perp AF$.

Задача 23.13.

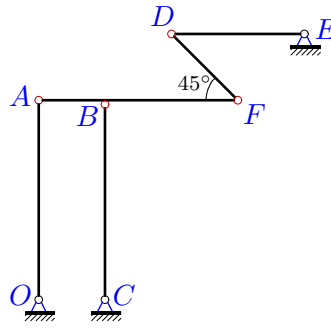
14



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

Задача 23.8.

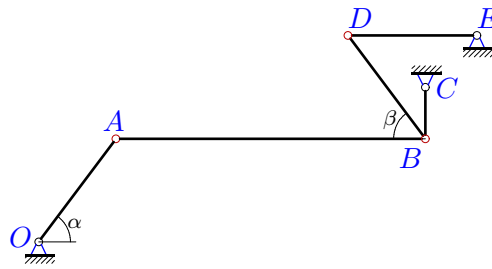
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$\omega_{OA} = 2 \text{ рад/с}$, $OA = 3$, $AB = 1$, $BF = 2$,
 $BC = 3$, $DE = 2$, $DF = \sqrt{2}$.

Задача 23.10.

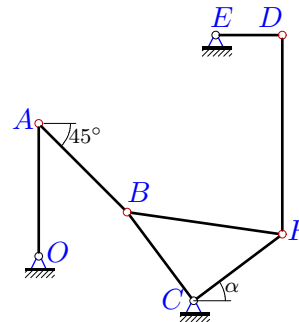
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$\omega_{OA} = 20 \text{ рад/с}$, $OA = 5$, $AB = 12$, $BC = 2$,
 $DE = 5$, $BD = 5$, $\cos \alpha = 0.6$, $\cos \beta = 0.6$.

Задача 23.12.

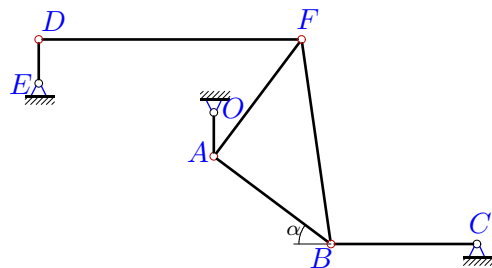
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$\omega_{OA} = 2 \text{ рад/с}$, $OA = 6$, $DF = 9$, $BC = CF = 5$,
 $AB = 4\sqrt{2}$, $DE = 3$, $\cos \alpha = 0.8$, $CB \perp CF$.

Задача 23.14.

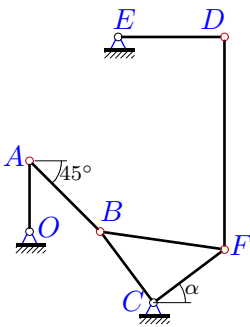
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$\omega_{OA} = 30 \text{ рад/с}$, $OA = 3$, $AB = AF = 10$,
 $BC = 10$, $DF = 18$, $DE = 3$, $\cos \alpha = 0.8$, $AB \perp AF$.

Задача 23.15.

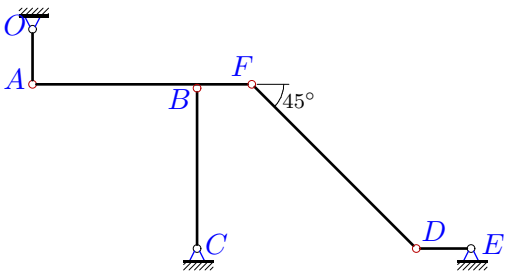
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$\omega_{OA} = 3$ рад/с, $OA = 4$, $DF = 12$, $BC = CF = 5$,
 $AB = 4\sqrt{2}$, $DE = 6$, $\cos \alpha = 0.8$, $CB \perp CF$.

Задача 23.17.

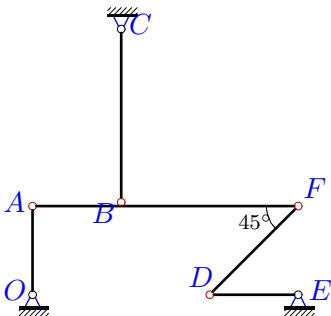
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$\omega_{OA} = 3$ рад/с, $OA = 1$, $AB = 3$, $BF = 1$,
 $BC = 3$, $DE = 1$, $DF = 3\sqrt{2}$.

Задача 23.19.

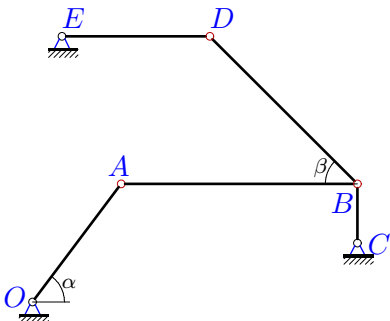
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$\omega_{OA} = 2$ рад/с, $OA = 1$, $AB = 1$, $BF = 2$,
 $BC = 2$, $DE = 1$, $DF = \sqrt{2}$.

Задача 23.21.

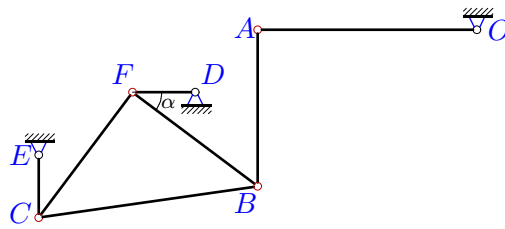
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$\omega_{OA} = 40$ рад/с, $OA = 5$, $AB = 8$, $BC = 2$,
 $DE = 5$, $BD = 5\sqrt{2}$, $\cos \alpha = 0.6$, $\beta = 45^\circ$.

Задача 23.16.

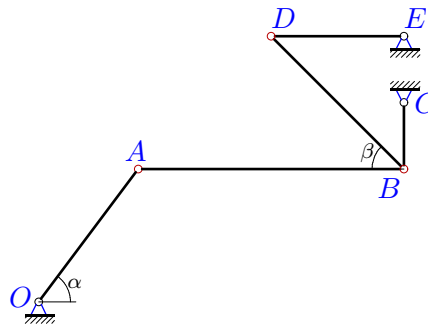
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$\omega_{OA} = 10$ рад/с, $OA = 7$, $AB = 5$, $BF = FC = 5$,
 $CE = 2$, $DF = 2$, $\cos \alpha = 0.8$, $FB \perp CF$.

Задача 23.18.

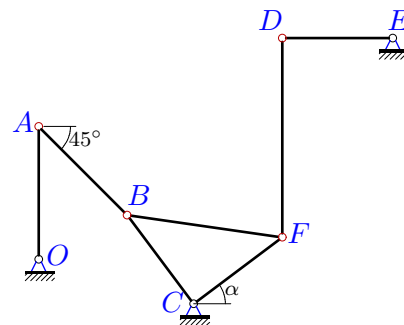
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$\omega_{OA} = 8$ рад/с, $OA = 5$, $AB = 8$, $BC = 2$,
 $DE = 4$, $BD = 4\sqrt{2}$, $\cos \alpha = 0.6$, $\beta = 45^\circ$.

Задача 23.20.

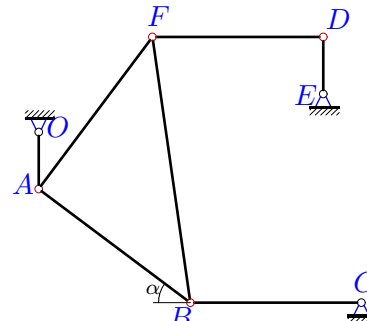
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$\omega_{OA} = 10$ рад/с, $OA = 6$, $DF = 9$, $BC = CF = 5$,
 $AB = 4\sqrt{2}$, $DE = 5$, $\cos \alpha = 0.8$, $CB \perp CF$.

Задача 23.22.

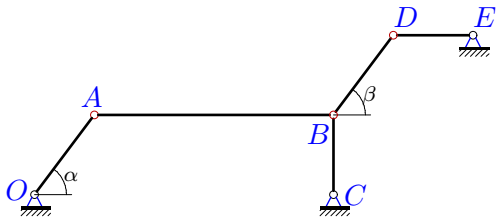
14



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

Задача 23.23.

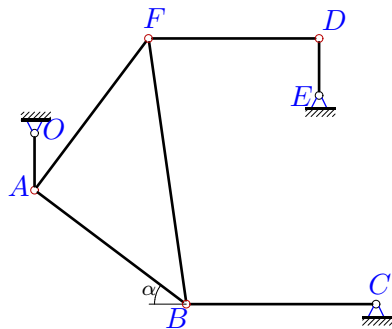
14



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

Задача 23.25.

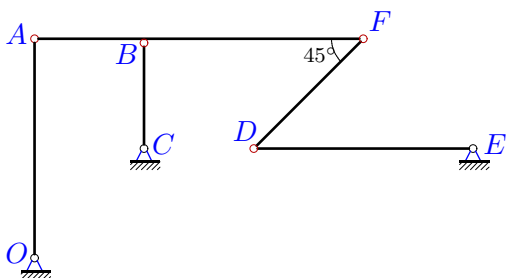
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$\omega_{OA} = 30$ рад/с, $OA = 3$, $AB=AF=10$,
 $BC = 10$, $DF=9$, $DE=3$, $\cos \alpha=0.8$, $AB \perp AF$.

Задача 23.27.

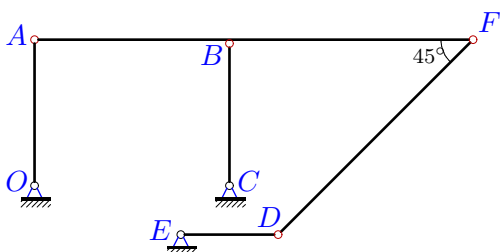
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$\omega_{OA} = 1$ рад/с, $OA = 2$, $AB = 1$, $BF = 2$,
 $BC = 1$, $DE = 2$, $DF = \sqrt{2}$.

Задача 23.29.

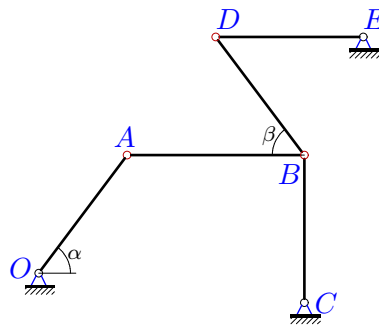
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$\omega_{OA} = 4$ рад/с, $OA = 3$, $AB = 4$, $BF = 5$,
 $BC = 3$, $DE = 2$, $DF = 4\sqrt{2}$.

Задача 23.24.

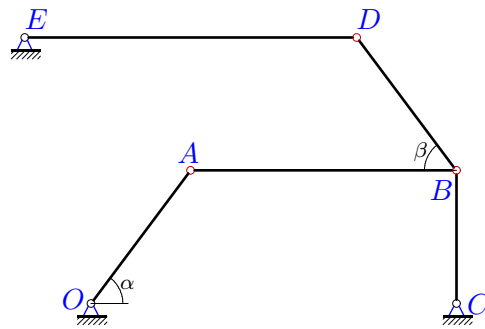
14



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

Задача 23.26.

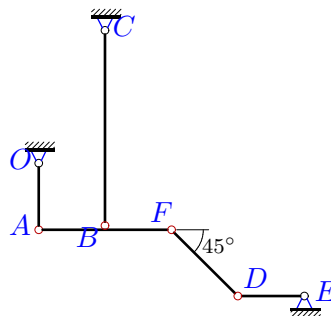
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$\omega_{OA} = 40$ рад/с, $OA = 5$, $AB = 8$, $BC = 4$,
 $DE = 10$, $BD = 5$, $\cos \alpha = 0.6$, $\cos \beta = 0.6$.

Задача 23.28.

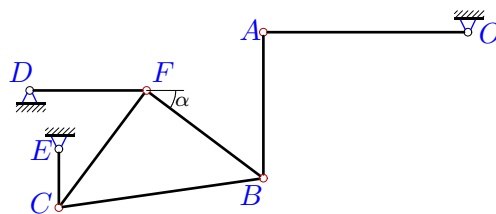
14



$\omega_{OA} = 3$ рад/с, $OA = 1$, $AB = 1$, $BF = 1$,
 $BC = 3$, $DE = 1$, $DF = \sqrt{2}$.

Задача 23.30.

14



$\omega_{OA} = 20$ рад/с, $OA = 7$, $AB = 5$, $BF = FC = 5$,
 $CE = 2$, $DF = 4$, $\cos \alpha=0.8$, $FB \perp CF$.