

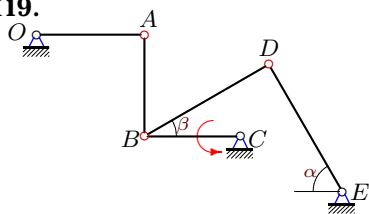
Уравнение трех угловых ускорений

Многозвенный механизм приводится в движение кривошипом OA или BC , вращающимся с известной угловой скоростью и известным угловым ускорением. Найти угловые скорости и угловые ускорения звеньев механизма. Длины звеньев даны в см, угловые скорости — в рад/с, угловые ускорения — в рад/с². Стержни, положение которых не определено углом, вертикальны или горизонтальны.

Кирсанов М.Н. Решебник. Теоретическая механика с. 183.

Вариант 1

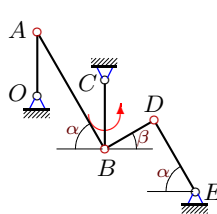
K19.



$\omega_{BC}=3, \varepsilon_{BC}=4, \alpha=60^\circ, \beta=30^\circ,$
 $OA=36, AB=34, BC=32, BD=48,$
 $DE=49.$

Вариант 2

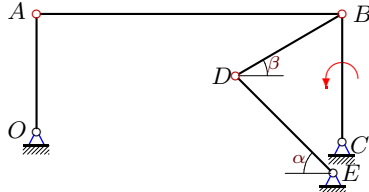
K19.



$\omega_{BC}=2, \varepsilon_{BC}=4, \alpha=60^\circ, \beta=30^\circ,$
 $OA=28, AB=59, BC=30, BD=25,$
 $DE=36.$

Вариант 3

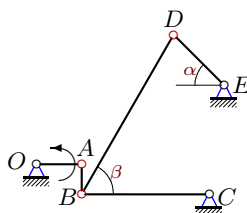
K19.



$\omega_{BC}=2, \varepsilon_{BC}=2, \alpha=45^\circ, \beta=30^\circ,$
 $OA=24, AB=62, BC=26, BD=25,$
 $DE=28.$

Вариант 4

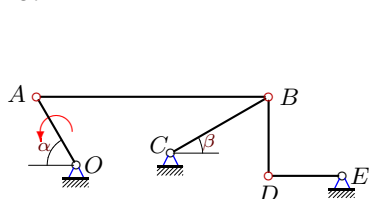
K19.



$\omega_{OA}=4, \varepsilon_{OA}=1, \alpha=45^\circ, \beta=60^\circ,$
 $OA=12, AB=8, BC=34, BD=49,$
 $DE=19.$

Вариант 5

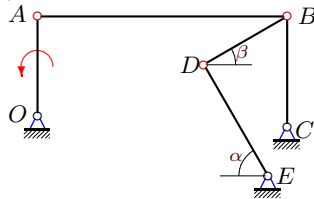
K19.



$\omega_{OA}=4, \varepsilon_{OA}=4, \alpha=60^\circ, \beta=30^\circ,$
 $OA=28, AB=82, BC=40, BD=28,$
 $DE=26.$

Вариант 6

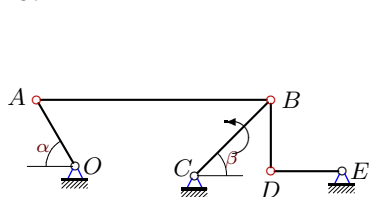
K19.



$\omega_{OA}=3, \varepsilon_{OA}=4, \alpha=60^\circ, \beta=30^\circ,$
 $OA=28, AB=70, BC=31, BD=27,$
 $DE=36.$

Вариант 7

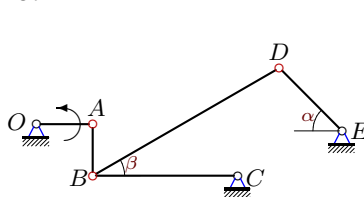
K19.



$\omega_{BC}=3, \varepsilon_{BC}=4, \alpha=60^\circ, \beta=45^\circ,$
 $OA=28, AB=85, BC=39, BD=26,$
 $DE=26.$

Вариант 8

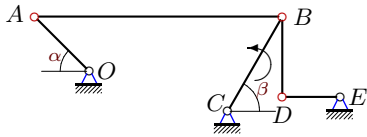
K19.



$\omega_{OA}=1, \varepsilon_{OA}=1, \alpha=45^\circ, \beta=30^\circ,$
 $OA=12, AB=11, BC=31, BD=46,$
 $DE=19.$

Вариант 9

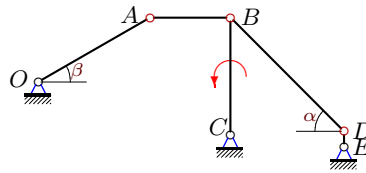
K19.



$\omega_{BC}=2, \varepsilon_{BC}=2, \alpha=45^\circ, \beta=60^\circ,$
 $OA=24, AB=77, BC=34, BD=25,$
 $DE=18.$

Вариант 10

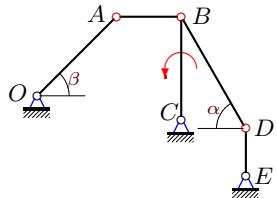
K19.



$\omega_{BC}=2, \varepsilon_{BC}=2, \alpha=45^\circ, \beta=30^\circ,$
 $OA=24, AB=15, BC=22, BD=30,$
 $DE=3.$

Вариант 11

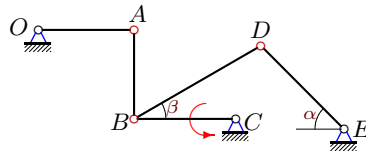
K19.



$\omega_{BC}=2, \varepsilon_{BC}=3, \alpha=60^\circ, \beta=45^\circ,$
 $OA=26, AB=15, BC=24, BD=30,$
 $DE=11.$

Вариант 12

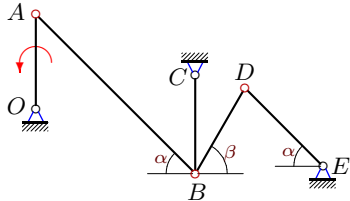
K19.



$\omega_{BC}=1, \varepsilon_{BC}=1, \alpha=45^\circ, \beta=30^\circ,$
 $OA=30, AB=28, BC=32, BD=46,$
 $DE=37.$

Вариант 13

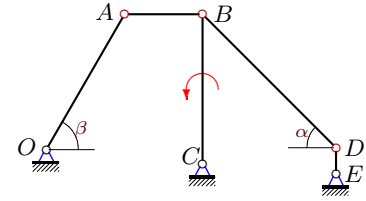
K19.



$\omega_{OA}=1, \varepsilon_{OA}=2, \alpha=45^\circ, \beta=60^\circ,$
 $OA=24, AB=57, BC=25, BD=25,$
 $DE=28.$

Вариант 14

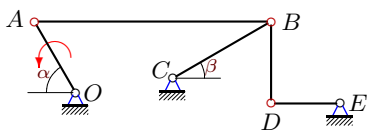
K19.



$\omega_{BC}=1, \varepsilon_{BC}=2, \alpha=45^\circ, \beta=60^\circ,$
 $OA=24, AB=12, BC=23, BD=29,$
 $DE=4.$

Вариант 15

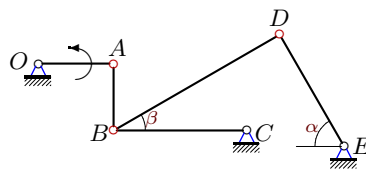
K19.



$\omega_{OA}=2, \varepsilon_{OA}=3, \alpha=60^\circ, \beta=30^\circ,$
 $OA=26, AB=75, BC=36, BD=26,$
 $DE=22.$

Вариант 16

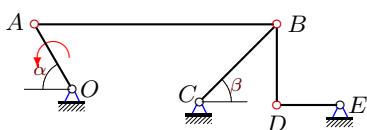
K19.



$\omega_{OA}=1, \varepsilon_{OA}=4, \alpha=60^\circ, \beta=30^\circ,$
 $OA=18, AB=16, BC=32, BD=46,$
 $DE=31.$

Вариант 17

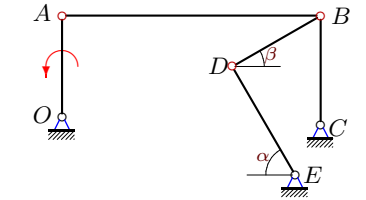
K19.



$\omega_{OA}=4, \varepsilon_{OA}=3, \alpha=60^\circ, \beta=45^\circ,$
 $OA=26, AB=84, BC=38, BD=28,$
 $DE=22.$

Вариант 18

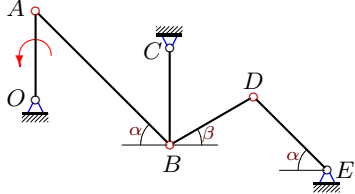
K19.



$\omega_{OA}=2, \varepsilon_{OA}=3, \alpha=60^\circ, \beta=30^\circ,$
 $OA=26, AB=66, BC=28, BD=26,$
 $DE=32.$

Вариант 19

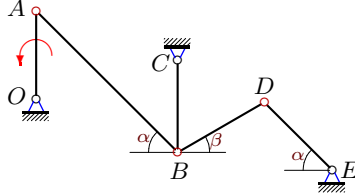
K19.



$\omega_{OA}=2, \varepsilon_{OA}=2, \alpha=45^\circ, \beta=30^\circ,$
 $OA=24, AB=51, BC=26, BD=26,$
 $DE=28.$

Вариант 20

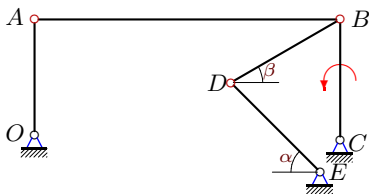
K19.



$\omega_{OA}=1, \varepsilon_{OA}=1, \alpha=45^\circ, \beta=30^\circ,$
 $OA=22, AB=50, BC=23, BD=25,$
 $DE=24.$

Вариант 21

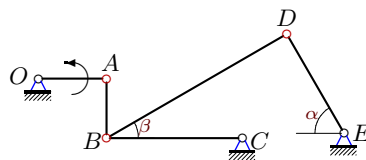
K19.



$\omega_{BC}=1, \varepsilon_{BC}=1, \alpha=45^\circ, \beta=30^\circ,$
 $OA=22, AB=58, BC=23, BD=24,$
 $DE=24.$

Вариант 22

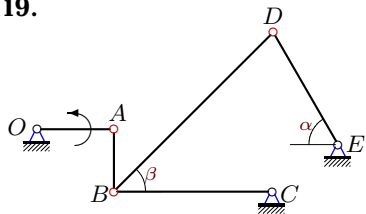
K19.



$\omega_{OA}=4, \varepsilon_{OA}=3, \alpha=60^\circ, \beta=30^\circ,$
 $OA=16, AB=14, BC=32, BD=49,$
 $DE=27.$

Вариант 23

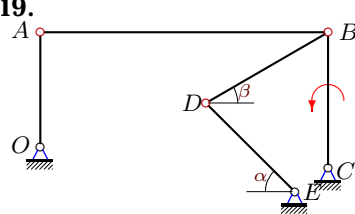
K19.



$\omega_{OA}=2, \varepsilon_{OA}=3, \alpha=60^\circ, \beta=45^\circ,$
 $OA=16, AB=13, BC=33, BD=47,$
 $DE=27.$

Вариант 24

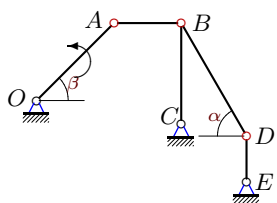
K19.



$\omega_{BC}=4, \varepsilon_{BC}=1, \alpha=45^\circ, \beta=30^\circ,$
 $OA=22, AB=55, BC=26, BD=27,$
 $DE=24.$

Вариант 25

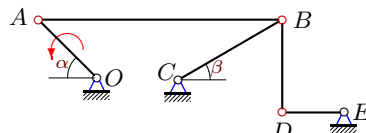
K19.



$\omega_{OA}=2, \varepsilon_{OA}=3, \alpha=60^\circ, \beta=45^\circ,$
 $OA=26, AB=16, BC=24, BD=31,$
 $DE=11.$

Вариант 26

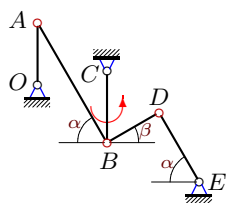
K19.



$\omega_{OA}=3, \varepsilon_{OA}=2, \alpha=45^\circ, \beta=30^\circ,$
 $OA=24, AB=71, BC=35, BD=27,$
 $DE=18.$

Вариант 27

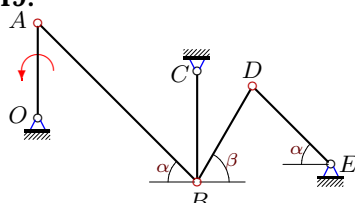
K19.



$\omega_{BC}=4, \varepsilon_{BC}=4, \alpha=60^\circ, \beta=30^\circ,$
 $OA=28, AB=62, BC=32, BD=27,$
 $DE=36.$

Вариант 28

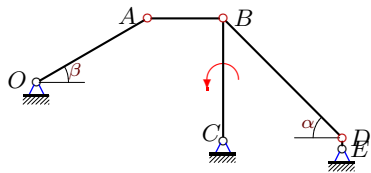
K19.



$\omega_{OA}=4, \varepsilon_{OA}=2, \alpha=45^\circ, \beta=60^\circ,$
 $OA=24, AB=57, BC=28, BD=28,$
 $DE=28.$

Вариант 29

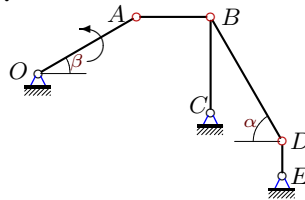
K19.



$\omega_{BC}=1, \varepsilon_{BC}=1, \alpha=45^\circ, \beta=30^\circ,$
 $OA=22, AB=13, BC=21, BD=29,$
 $DE=2.$

Вариант 30

K19.



$\omega_{OA}=4, \varepsilon_{OA}=3, \alpha=60^\circ, \beta=30^\circ,$
 $OA=26, AB=17, BC=22, BD=33,$
 $DE=8.$

Ответы

	ω_{OA}	ω_{AB}	ω_{BC}	ω_{BD}	ω_{DE}	ε_{OA}	ε_{AB}	ε_{BC}	ε_{BD}	ε_{DE}
1	-2.667	0.000	3.000	1.732	0.980	-3.556	16.000	4.000	4.330	-0.845
2	-2.143	0.000	2.000	1.200	-1.443	11.091	8.426	4.000	-4.757	-3.553
3	2.167	0.000	2.000	1.523	1.665	2.167	0.140	2.000	1.071	2.187
4	4.000	0.000	-1.412	-0.717	-2.265	1.000	32.471	-0.353	-1.089	-2.414
5	4.000	2.732	4.850	3.464	-6.462	4.000	-7.290	-16.493	56.087	27.144
6	3.000	0.000	2.710	1.556	2.021	4.000	0.348	3.613	0.218	4.041
7	3.412	1.535	3.000	3.182	-3.182	13.243	3.880	4.000	23.914	-4.822
8	1.000	0.000	-0.387	-0.191	-0.327	1.000	1.513	-0.387	-0.173	-0.426
9	3.470	1.206	2.000	2.356	-1.889	12.916	4.412	2.000	7.644	-3.052
10	3.667	-5.081	2.000	0.000	14.667	-51.886	76.785	2.000	-26.273	200.444
11	2.611	-3.200	2.000	0.000	4.364	-11.255	15.749	3.000	-7.564	24.410
12	-1.067	0.000	1.000	0.509	0.448	-1.067	2.362	1.000	0.782	0.060
13	1.000	0.000	-0.960	-0.703	0.444	2.000	1.167	-0.038	-0.799	-0.316
14	1.107	-1.107	1.000	0.000	5.750	0.799	-0.595	2.000	-5.328	38.813
15	2.000	1.387	2.502	1.732	-3.545	3.000	-0.598	-1.966	16.781	4.361
16	1.000	0.000	-0.563	-0.339	-0.290	4.000	1.758	-2.250	-1.302	-1.274
17	4.000	1.691	3.352	3.217	-4.094	3.000	-1.246	-7.520	16.734	9.739
18	2.000	0.000	1.857	1.000	1.407	3.000	0.113	2.786	0.721	2.807
19	2.000	0.000	-1.846	-1.351	1.537	2.000	5.119	5.254	-1.772	-3.624
20	1.000	0.000	-0.957	-0.644	0.822	1.000	1.217	0.915	-0.783	-0.611
21	1.045	0.000	1.000	0.702	0.859	1.045	0.018	1.000	0.632	1.044
22	4.000	0.000	-2.000	-1.131	-1.185	3.000	27.429	-1.500	-0.316	-2.672
23	2.000	0.000	-0.970	-0.610	-0.868	3.000	7.310	-1.455	-0.922	-1.673
24	4.727	0.000	4.000	2.820	3.885	1.182	1.375	1.000	1.186	4.728
25	2.000	-2.298	1.532	0.000	3.343	3.000	-2.372	8.883	-4.295	29.864
26	3.000	1.959	2.909	1.886	-4.899	2.000	-1.966	-5.877	21.693	12.791
27	-4.571	0.000	4.000	2.370	-3.079	63.297	35.392	4.000	-26.694	-5.976
28	4.000	0.000	-3.429	-2.510	1.775	2.000	17.694	23.755	7.212	-17.158
29	1.909	-2.798	1.000	0.000	10.500	-13.655	21.482	1.000	-9.729	110.250
30	4.000	-5.298	2.364	0.000	6.500	3.000	1.032	39.838	-13.036	156.124