

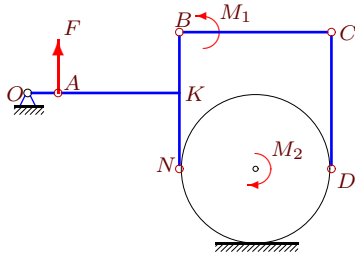
Принцип возможных перемещений (2)

Механизм с идеальными стационарными связями находится в равновесии под действием силы F и моментов M_1, M_2 . Длины звеньев даны в сантиметрах. Стержни, направление которых не указано, считать горизонтальными или вертикальными. Диск касается горизонтальной поверхности без проскальзывания. Найти величину F .

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

Задача 34.1.

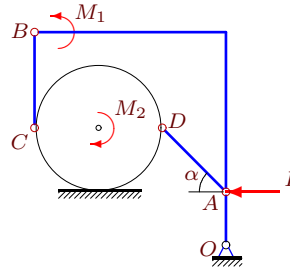
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$$M_1 = 16, M_2 = 28, R = 5, OA = 2, \\ AK = 8, BK = 4, KN = 5, CD = 9.$$

Задача 34.2.

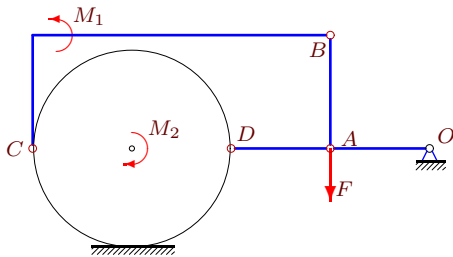
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$$M_1 = 495, M_2 = 525, R = 6, OA = 5, \\ AD = 6\sqrt{2}, BC = 9, \alpha = 45^\circ.$$

Задача 34.3.

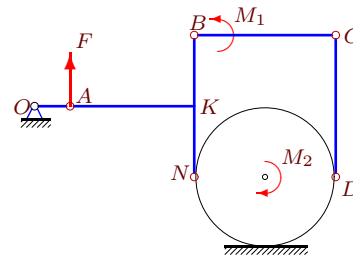
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$$M_1 = 105, M_2 = 127, R = 7, OA = 7, \\ AB = 8, AD = 7.$$

Задача 34.4.

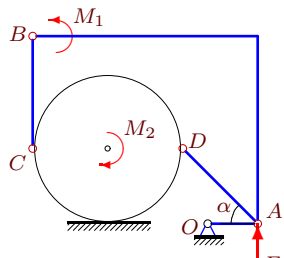
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$$M_1 = 10, M_2 = 22, R = 4, OA = 2, \\ AK = 7, BK = 4, KN = 4, CD = 8.$$

Задача 34.5.

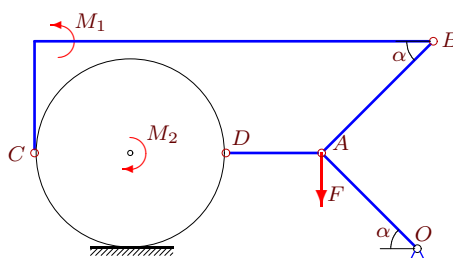
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$$M_1 = 23, M_2 = 59, R = 6, OA = 4, \\ AD = 6\sqrt{2}, BC = 9, \alpha = 45^\circ.$$

Задача 34.6.

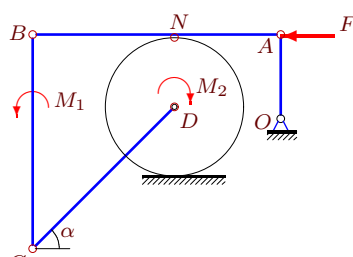
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$$M_1 = 23, M_2 = 30, R = 6, OA = 6\sqrt{2}, \\ AB = 7\sqrt{2}, AD = 6, \alpha = 45^\circ.$$

Задача 34.7.

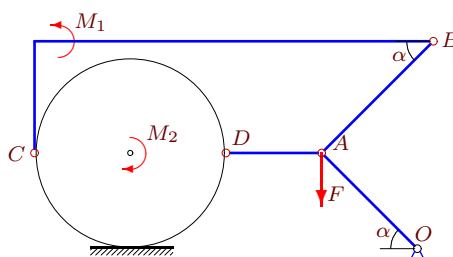
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$$M_1 = 483, M_2 = 497, R = 6, OA = 7, \\ CD = 12\sqrt{2}, AN = 9, AB = 21, \alpha = 45^\circ.$$

Задача 34.8.

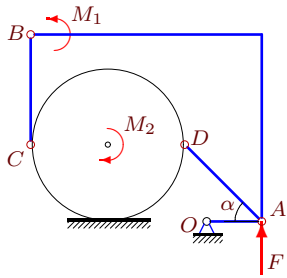
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$$M_1 = 23, M_2 = 30, R = 6, OA = 6\sqrt{2}, \\ AB = 7\sqrt{2}, AD = 6, \alpha = 45^\circ.$$

Задача 34.9.

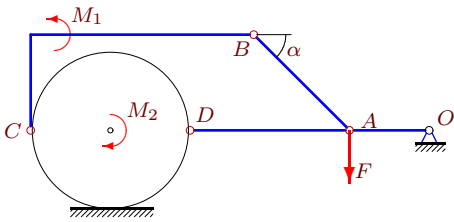
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$M_1 = 205, M_2 = 415, R = 7, OA = 5,$
 $AD = 7\sqrt{2}, BC = 10, \alpha = 45^\circ.$

Задача 34.11.

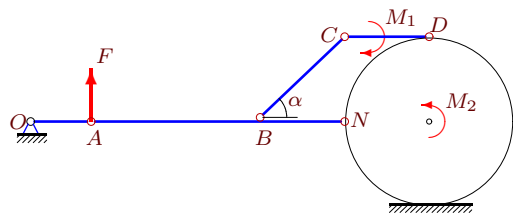
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$M_1 = 100, M_2 = 81, R = 5, OA = 5,$
 $AB = 6\sqrt{2}, AD = 10, \alpha = 45^\circ.$

Задача 34.13.

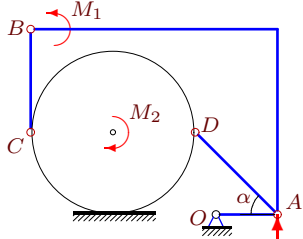
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$M_1 = 420, M_2 = 635, R = 7, OA = 5,$
 $AB = 14, BN = 7, BC = 7\sqrt{2}, CD = 7, \alpha = 45^\circ$

Задача 34.15.

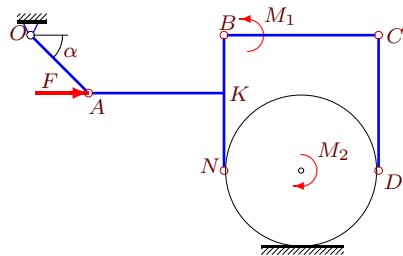
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$M_1 = M_2 = 69, R = 4, OA = 3,$
 $AD = 4\sqrt{2}, BC = 5, \alpha = 45^\circ.$

Задача 34.17.

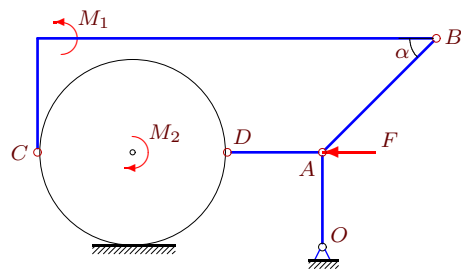
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$M_1 = M_2 = 51, R = 4, OA = 3\sqrt{2},$
 $AK = 7, BK = 3, KN = 4, CD = 7, \alpha = 45^\circ.$

Задача 34.10.

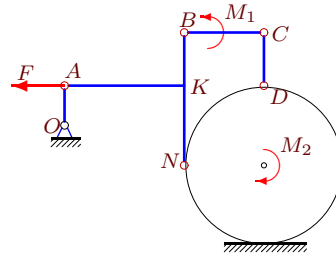
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$M_1 = 42, M_2 = 59, R = 5, OA = 5,$
 $AB = 6\sqrt{2}, AD = 5, \alpha = 45^\circ.$

Задача 34.12.

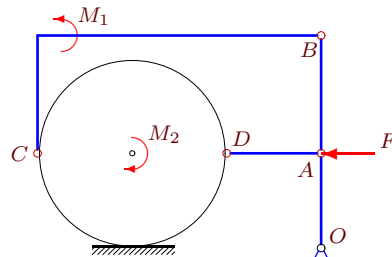
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$M_1 = 54, M_2 = 66, R = 6, OA = 3,$
 $AK = 9, BK = 4, KN = 6, CD = 4.$

Задача 34.14.

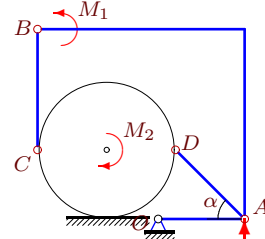
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$M_1 = 33, M_2 = 35, R = 4, OA = 4,$
 $AB = 5, AD = 4.$

Задача 34.16.

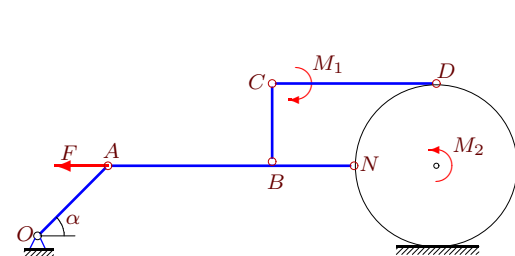
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$M_1 = 155, M_2 = 115, R = 4, OA = 5,$
 $AD = 4\sqrt{2}, BC = 7, \alpha = 45^\circ.$

Задача 34.18.

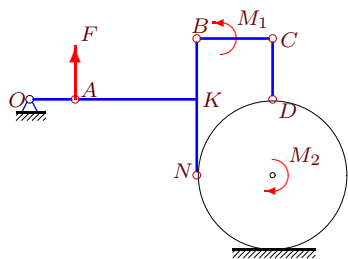
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$M_1 = 204, M_2 = 251, R = 7, OA = 6\sqrt{2},$
 $AB = 14, BN = BC = 7, CD = 14, \alpha = 45^\circ$

Задача 34.19.

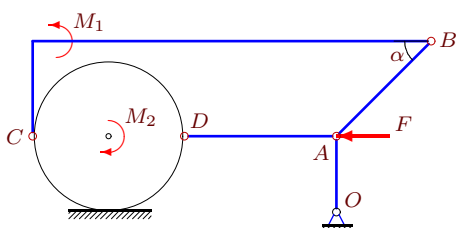
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$M_1 = 10, M_2 = 28, R = 5, OA = 3,$
 $AK = 8, BK = 4, KN = 5, CD = 4.$

Задача 34.21.

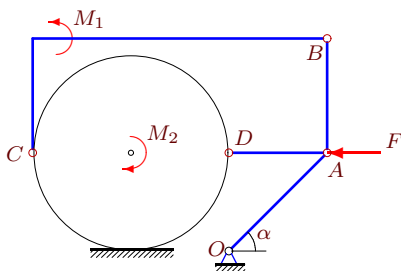
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$M_1 = 44, M_2 = 47, R = 4, OA = 4,$
 $AB = 5\sqrt{2}, AD = 8, \alpha = 45^\circ.$

Задача 34.23.

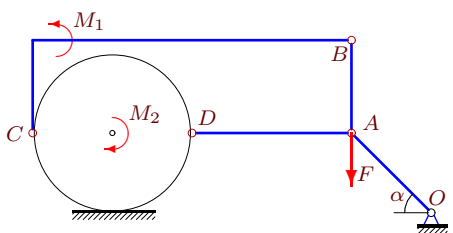
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$M_1 = 33, M_2 = 88, R = 6, OA = 6\sqrt{2},$
 $AB = 7, AD = 6, \alpha = 45^\circ.$

Задача 34.25.

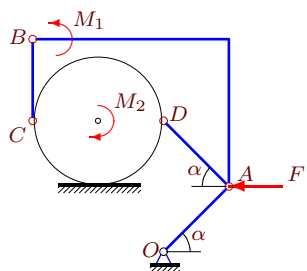
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$M_1 = 23, M_2 = 30, R = 6, OA = 6\sqrt{2},$
 $AB = 7, AD = 12, \alpha = 45^\circ.$

Задача 34.27.

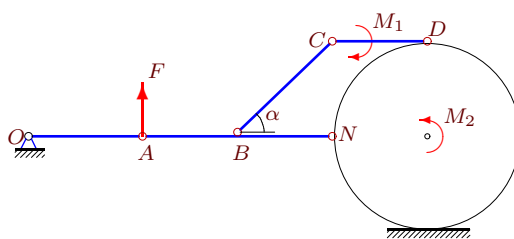
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$M_1 = 225, M_2 = 170, R = 4, OA = 4\sqrt{2},$
 $AD = 4\sqrt{2}, BC = 5, \alpha = 45^\circ.$

Задача 34.20.

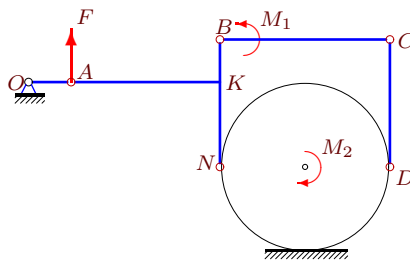
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$M_1 = 60, M_2 = 123, R = 5, OA = 6,$
 $AB = 5, BN = 5, BC = 5\sqrt{2}, CD = 5, \alpha = 45^\circ$

Задача 34.22.

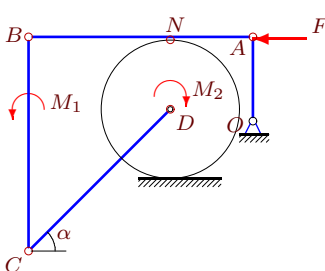
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$M_1 = 10, M_2 = 22, R = 4, OA = 2,$
 $AK = 7, BK = 2, KN = 4, CD = 6.$

Задача 34.24.

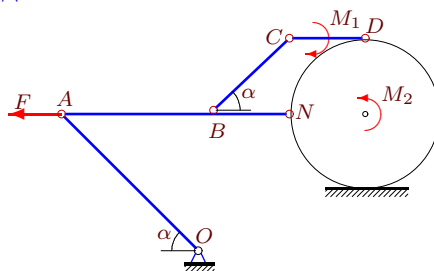
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$M_1 = 483, M_2 = 245, R = 6, OA = 7,$
 $CD = 12\sqrt{2}, AN = 7, AB = 19, \alpha = 45^\circ.$

Задача 34.26.

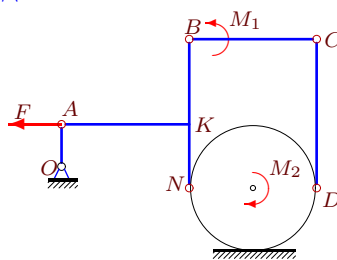
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$M_1 = 216, M_2 = 180, R = 5, OA = 9\sqrt{2},$
 $AB = 10, BN = 5, BC = 5\sqrt{2}, CD = 5, \alpha = 45^\circ$

Задача 34.28.

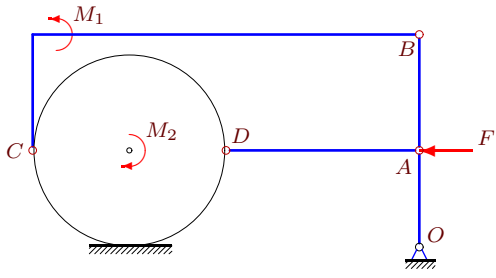
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$M_1 = 8, M_2 = 14, R = 3, OA = 2,$
 $AK = 6, BK = 4, KN = 3, CD = 7.$

Задача 34.29.

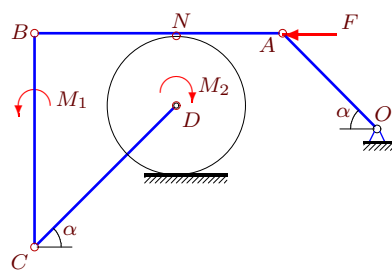
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$M_1 = 56$, $M_2 = 79$, $R = 5$, $OA = 5$,
 $AB = 6$, $AD = 10$.

Задача 34.30.

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$M_1 = 198$, $M_2 = 442$, $R = 6$, $OA = 8\sqrt{2}$,
 $CD = 12\sqrt{2}$, $AN = 9$, $AB = 21$, $\alpha = 45^\circ$.

Принцип возможных перемещений (2)

№	ω_{AB_z}	ω_{BC_z}	ω_{CD_z}	ω_{DA_z}	$\omega_{\text{диск}_z}$	ω_{OA_z}	F
1	-2	2	-2	—	2	3	4
2	15	55	—	-45	45	108	30
3	-1	-1	—	-3	0	3	5
4	-2	2	-2	—	2	3	4
5	1	1	—	1	1	3	3
6	0	0	—	-2	1	1	5
7	0	7	0	—	21	36	28
8	0	0	—	-2	1	1	5
9	5	5	—	5	5	14	15
10	1	1	—	-3	3	3	9
11	-1	-1	—	-2	0	4	5
12	-4	6	-19	—	6	4	6
13	-5	0	-5	—	0	21	-20
14	1	1	—	-3	3	3	6
15	3	3	—	3	3	8	0
16	5	5	—	5	5	8	-5
17	0	-3	0	—	-3	4	0
18	-4	6	1	—	6	7	-31
19	-2	2	-7	—	2	2	6
20	-3	0	-3	—	0	5	-6
21	1	1	—	-2	4	4	9
22	-2	2	-2	—	2	3	4
23	2	2	—	0	3	3	11
24	0	7	0	—	21	36	7
25	0	0	—	-1	1	1	5
26	0	9	0	—	9	5	-36
27	10	18	—	0	15	15	5
28	-2	4	-2	—	4	3	4
29	1	1	—	-2	4	4	13
30	-24	-10	-24	—	18	27	46