

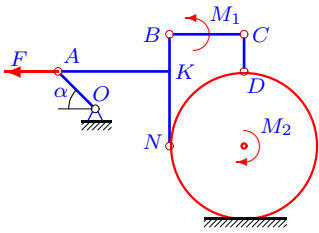
## Принцип возможных перемещений (2)

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 D-34.1.

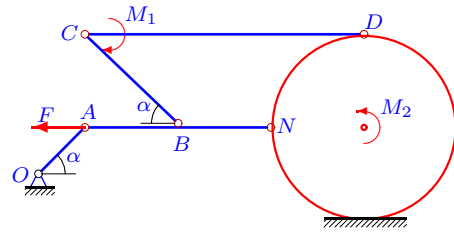
Акулина Даша



$$M_1 = 17, M_2 = 35, R = 6, OA = 3\sqrt{2}, \\ AK = 9, BK = 3, KN = 6, CD = 3, \alpha = 45^\circ.$$

### Задача D-34.2.

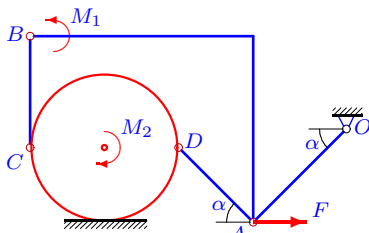
Анарбаев Б.



$$M_1 = 33, M_2 = 89, R = 6, OA = 3\sqrt{2}, \\ AB = 6, BN = 6, BC = 6\sqrt{2}, CD = 18, \alpha = 45^\circ$$

### Задача D-34.3.

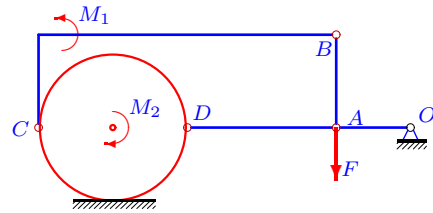
Баранов Максим



$$M_1 = 945, M_2 = 570, R = 4, OA = 5\sqrt{2}, \\ AD = 4\sqrt{2}, BC = 6, \alpha = 45^\circ.$$

### Задача D-34.4.

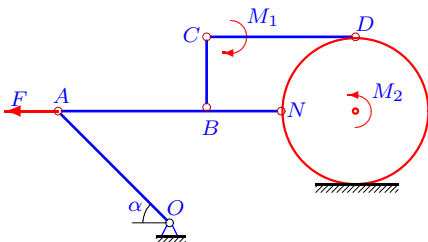
Бибирли Эмиль



$$M_1 = 80, M_2 = 49, R = 4, OA = 4, \\ AB = 5, AD = 8.$$

### Задача D-34.5.

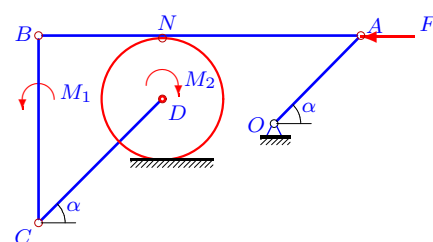
Биль Евгений



$$M_1 = 90, M_2 = 69, R = 4, OA = 6\sqrt{2}, \\ AB = 8, BN = BC = 4, CD = 8, \alpha = 45^\circ$$

### Задача D-34.6.

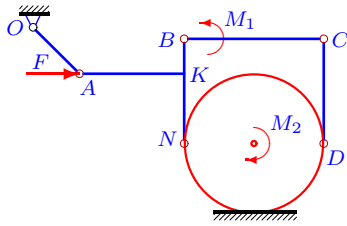
Волкобой Илья



$$M_1 = 504, M_2 = 518, R = 5, OA = 7\sqrt{2}, \\ CD = 10\sqrt{2}, AN = 16, AB = 26, \alpha = 45^\circ.$$

**Задача D-34.7.**

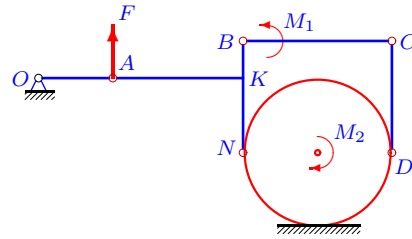
Глядяев А.Д.



$M_1 = 26, M_2 = 74, R = 6, OA = 4\sqrt{2},$   
 $AK = 9, BK = 3, KN = 6, CD = 9, \alpha = 45^\circ.$

**Задача D-34.8.**

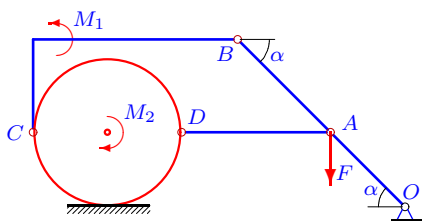
Горбатенко Егор



$M_1 = 32, M_2 = 44, R = 4, OA = 4,$   
 $AK = 7, BK = 2, KN = 4, CD = 6.$

**Задача D-34.9.**

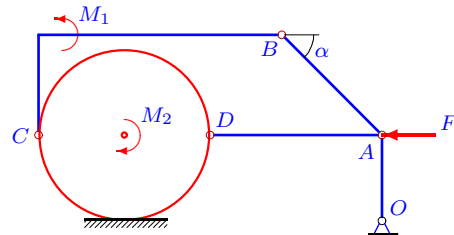
Губин Иван



$M_1 = 15, M_2 = 12, R = 4, OA = 4\sqrt{2},$   
 $AB = 5\sqrt{2}, AD = 8, \alpha = 45^\circ.$

**Задача D-34.10.**

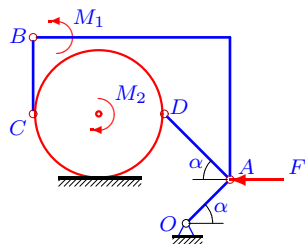
Драгин Егор



$M_1 = 68, M_2 = 119, R = 6, OA = 6,$   
 $AB = 7\sqrt{2}, AD = 12, \alpha = 45^\circ.$

**Задача D-34.11.**

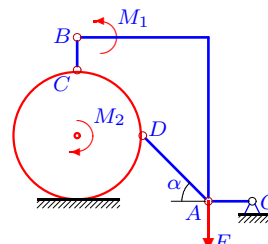
Исаков Александр



$M_1 = 210, M_2 = 224, R = 6, OA = 4\sqrt{2},$   
 $AD = 6\sqrt{2}, BC = 7, \alpha = 45^\circ.$

**Задача D-34.12.**

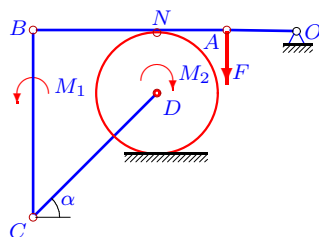
Картушин Александр



$M_1 = 37, M_2 = 61, R = 6, OA = 4,$   
 $AD = 6\sqrt{2}, BC = 3, \alpha = 45^\circ.$

**Задача D-34.13.**

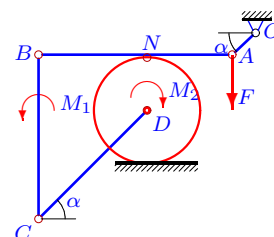
Костина Даша



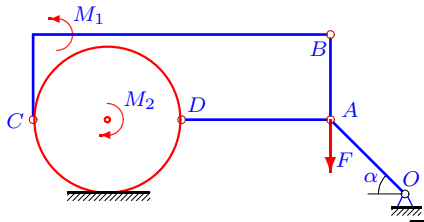
$M_1 = 162, M_2 = 137, R = 8, OA = 9,$   
 $CD = 16\sqrt{2}, AN = 9, AB = 25, \alpha = 45^\circ.$

**Задача D-34.14.**

Лбова Александра

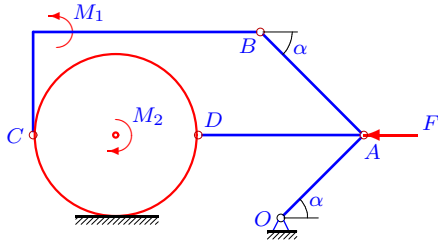


$M_1 = 495, M_2 = 501, R = 7, OA = 3\sqrt{2},$   
 $CD = 14\sqrt{2}, AN = 11, AB = 25, \alpha = 45^\circ.$

**Задача D-34.15.***Муржи Николай*

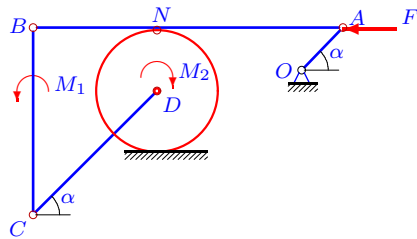
$$M_1 = 27, M_2 = 42, R = 7, OA = 7\sqrt{2},$$

$$AB = 8, AD = 14, \alpha = 45^\circ.$$

**Задача D-34.17.***Новиков Павел*

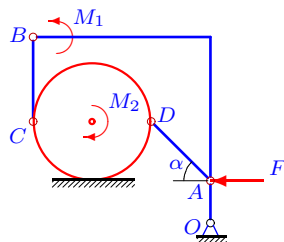
$$M_1 = 14, M_2 = 23, R = 4, OA = 4\sqrt{2},$$

$$AB = 5\sqrt{2}, AD = 8, \alpha = 45^\circ.$$

**Задача D-34.19.***Оршак Сергей*

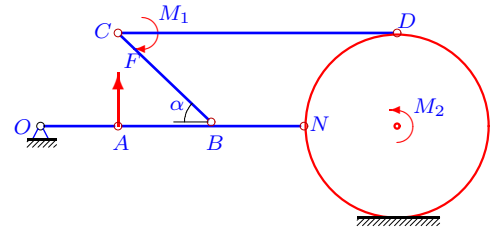
$$M_1 = 99, M_2 = 425, R = 6, OA = 4\sqrt{2},$$

$$CD = 12\sqrt{2}, AN = 18, AB = 30, \alpha = 45^\circ.$$

**Задача D-34.21.***Парохин Антон*

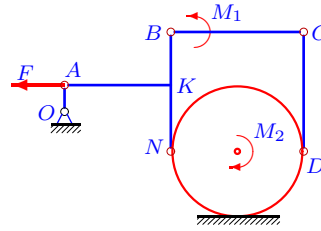
$$M_1 = 615, M_2 = 1255, R = 7, OA = 5,$$

$$AD = 7\sqrt{2}, BC = 10, \alpha = 45^\circ.$$

**Задача D-34.16.***Никитенков Федор*

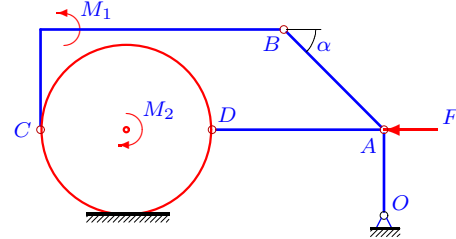
$$M_1 = 360, M_2 = 905, R = 6, OA = 5,$$

$$AB = 6, BN = 6, BC = 6\sqrt{2}, CD = 18, \alpha = 45^\circ.$$

**Задача D-34.18.***Опитев Владислав*

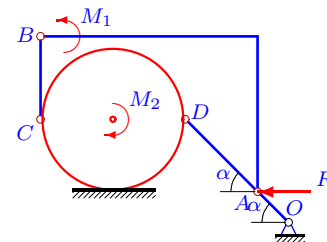
$$M_1 = 104, M_2 = 134, R = 5, OA = 2,$$

$$AK = 8, BK = 4, KN = 5, CD = 9.$$

**Задача D-34.20.***Парашин Андрей*

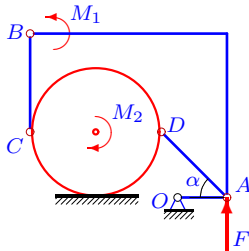
$$M_1 = 68, M_2 = 119, R = 6, OA = 6,$$

$$AB = 7\sqrt{2}, AD = 12, \alpha = 45^\circ.$$

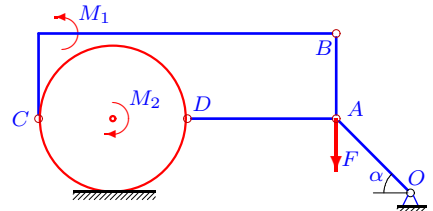
**Задача D-34.22.***Пархоменко Иван*

$$M_1 = 252, M_2 = 508, R = 7, OA = 3\sqrt{2},$$

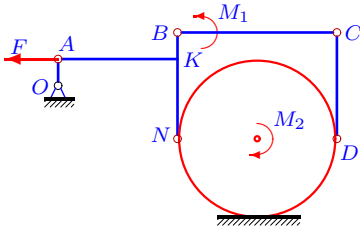
$$AD = 7\sqrt{2}, BC = 8, \alpha = 45^\circ.$$

**Задача D-34.23.***Петров Кирилл*

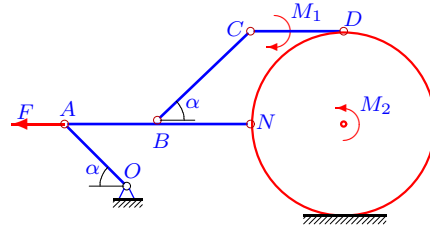
$$M_1 = 45, M_2 = 69, R = 4, OA = 3, \\ AD = 4\sqrt{2}, BC = 6, \alpha = 45^\circ.$$

**Задача D-34.24.***Петухов Антон*

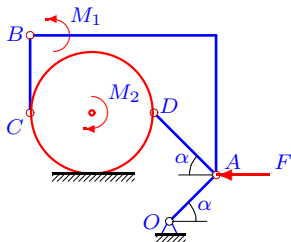
$$M_1 = 27, M_2 = 42, R = 7, OA = 7\sqrt{2}, \\ AB = 8, AD = 14, \alpha = 45^\circ.$$

**Задача D-34.25.***Руфин Никита*

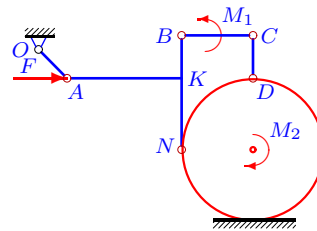
$$M_1 = 21, M_2 = 33, R = 6, OA = 2, \\ AK = 9, BK = 2, KN = 6, CD = 8.$$

**Задача D-34.26.***Самойлов Никита*

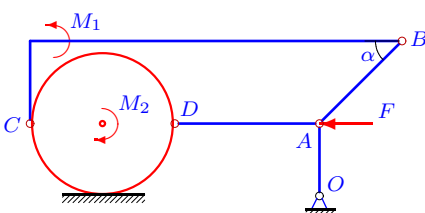
$$M_1 = 22, M_2 = 60, R = 6, OA = 4\sqrt{2}, \\ AB = 6, BN = 6, BC = 6\sqrt{2}, CD = 6, \alpha = 45^\circ$$

**Задача D-34.27.***Семенова Ирина*

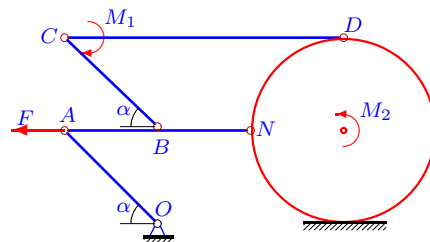
$$M_1 = 165, M_2 = 170, R = 4, OA = 3\sqrt{2}, \\ AD = 4\sqrt{2}, BC = 5, \alpha = 45^\circ.$$

**Задача D-34.28.***Слявин Ярослав*

$$M_1 = 96, M_2 = 156, R = 5, OA = 2\sqrt{2}, \\ AK = 8, BK = 3, KN = 5, CD = 3, \alpha = 45^\circ.$$

**Задача D-34.29.***Сюлюкин Кирилл*

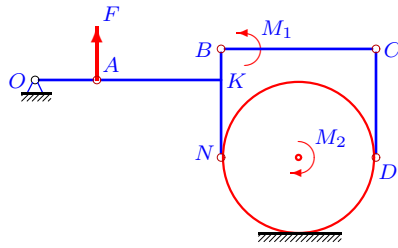
$$M_1 = 80, M_2 = 167, R = 7, OA = 7, \\ AB = 8\sqrt{2}, AD = 14, \alpha = 45^\circ.$$

**Задача D-34.30.***Хачалов Магомед*

$$M_1 = 102, M_2 = 124, R = 7, OA = 7\sqrt{2}, \\ AB = 7, BN = 7, BC = 7\sqrt{2}, CD = 21, \alpha = 45^\circ$$

**Задача D-34.31.**

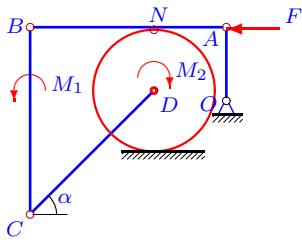
Чаймелов Андрей



$$M_1 = 44, M_2 = 56, R = 5, OA = 4, \\ AB = 10, BK = 2, KN = 5, CD = 7.$$

**Задача D-34.33.**

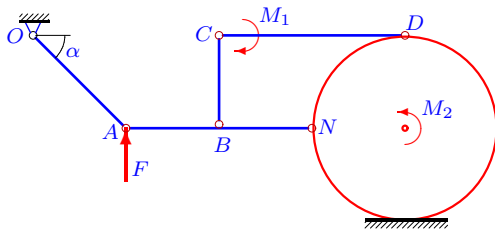
Шубин Станислав



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

**Задача D-34.35.**

Ярилин Иван

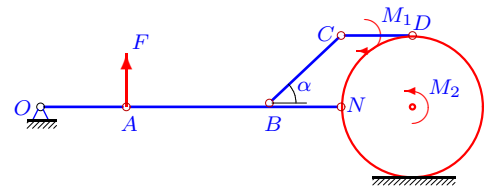


$$M_1 = 42, M_2 = 41, R = 5, OA = 5\sqrt{2}, \\ AB = 5, BN = BC = 5, CD = 10, \alpha = 45^\circ$$

D-34

**Ответы.****Принцип возможных перемещений (2)****Задача D-34.32.**

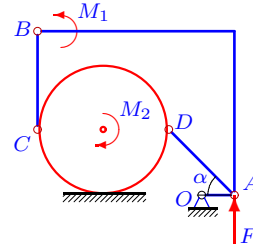
Чумаков Иван



$$M_1 = 150, M_2 = 122, R = 5, OA = 6, \\ AB = 10, BN = 5, BC = 5\sqrt{2}, CD = 5, \alpha = 45^\circ$$

**Задача D-34.34.**

Юшин Илья



$$M_1 = 47, M_2 = 59, R = 6, OA = 3, \\ AD = 6\sqrt{2}, BC = 9, \alpha = 45^\circ.$$

11.11.2013

№	$\omega_{AB_z}$	$\omega_{BC_z}$	$\omega_{CD_z}$	$\omega_{DA_z}$	$\omega_{диск_z}$	$\omega_{OA_z}$	$F$	
1	0	1	-2	—	1	2	3	Акулина Даша
2	-3	3	1	—	3	6	-13	Анарбаев Б.
3	-30	-50	—	0	-45	36	15	Баранов Максим
4	-1	-1	—	-2	0	4	5	Бибирли Эмиль
5	0	6	3	—	6	4	-6	Биль Евгений
6	35	42	35	—	56	80	14	Волковой Илья
7	0	-2	0	—	-2	3	-8	Глядяев А.Д.
8	-4	4	-4	—	4	3	4	Горбатенко Егор
9	0	0	—	-1	1	1	3	Губин Иван
10	1	1	—	-2	4	4	17	Драгин Егор
11	28	52	—	0	42	63	14	Исаков Александр
12	-1	-1	—	-1	-1	3	-2	Картушин Александр
13	-3	-2	-3	—	0	3	12	Костина Даша
14	-42	-39	-42	—	-33	154	6	Лбова Александра
15	0	0	—	-1	1	1	6	Муржи Николай
16	-15	0	-5	—	0	36	-10	Никитенков Федор
17	1	1	—	0	2	2	4	Новиков Павел
18	-10	16	-10	—	16	15	16	Опитев Владислав
19	6	7	6	—	9	27	29	Оршак Сергей
20	1	1	—	-2	4	4	17	Парашин Андрей
21	5	19	—	-15	15	42	75	Парохин Антон
22	-4	3	—	-12	0	28	12	Пархоменко Иван
23	3	3	—	3	3	8	3	Петров Кирилл
24	0	0	—	-1	1	1	6	Петухов Антон
25	-2	3	-2	—	3	3	6	Руфин Никита
26	0	2	0	—	2	3	-10	Самойлов Никита
27	10	18	—	0	15	20	15	Семенова Ирина
28	0	-6	10	—	-6	15	-12	Слявин Ярослав
29	1	1	—	-2	4	4	21	Сюлюкин Кирилл
30	0	3	2	—	3	3	-8	Хачалов Магомед
31	-4	4	-4	—	4	3	4	Чаймелов Андрей
32	-2	0	-2	—	0	5	-10	Чумаков Иван
33	0	7	0	—	21	36	7	Шубин Станислав
34	1	1	—	1	1	4	1	Юшин Илья
35	0	-2	-1	—	-2	2	4	Ярилин Иван

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