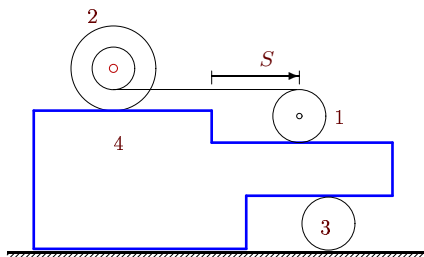


Теорема о центре масс системы

Механизм, состоящий из трех тел, установлен на призме, скользящей по гладкой плоскости. Нити, соединяющие тела, параллельны плоскостям. Под действием внутренних сил из состояния покоя механизм пришел в движение. Центр цилиндра (блока) или бруска сместился относительно призмы на расстояние S . Найти смещение призмы. Массы даны в килограммах, радиусы и смещение — в сантиметрах.

Задача D-4.1.

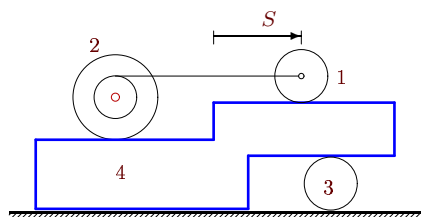
3



$$R_2 = 4, \quad r_2 = 3, \quad m_1 = 15, \quad m_2 = 1, \quad m_3 = 24, \\ m_4 = 10, \quad S = 114.$$

Задача D-4.2.

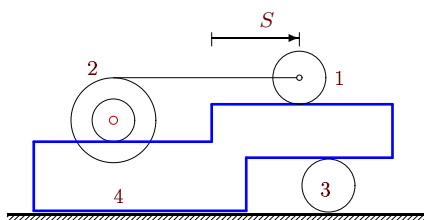
3



$$R_2 = 4, \quad r_2 = 3, \quad m_1 = 15, \quad m_2 = 7, \quad m_3 = 20, \\ m_4 = 12, \quad S = 132.$$

Задача D-4.3.

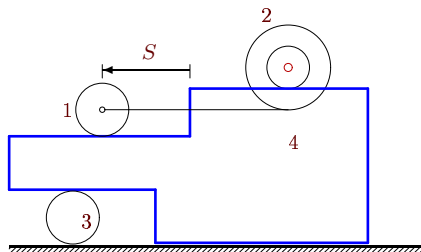
3



$$R_2 = 4, \quad r_2 = 2, \quad m_1 = 10, \quad m_2 = 6, \quad m_3 = 30, \\ m_4 = 12, \quad S = 86.$$

Задача D-4.4.

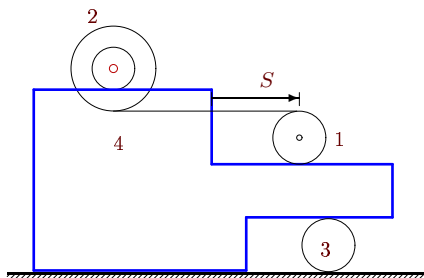
3



$$R_2 = 4, \quad r_2 = 2, \quad m_1 = 13, \quad m_2 = 4, \quad m_3 = 26, \\ m_4 = 10, \quad S = 120.$$

Задача D-4.5.

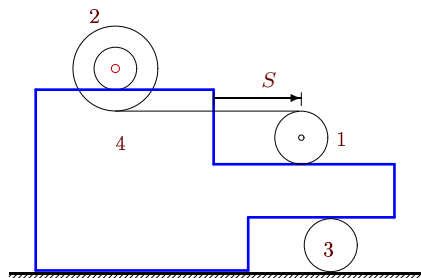
3



$$R_2 = 3, \quad r_2 = 2, \quad m_1 = 13, \quad m_2 = 1, \quad m_3 = 26, \\ m_4 = 15, \quad S = 84.$$

Задача D-4.6.

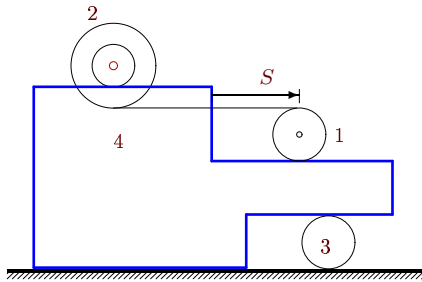
3



$$R_2 = 3, \quad r_2 = 2, \quad m_1 = 10, \quad m_2 = 1, \quad m_3 = 20, \\ m_4 = 10, \quad S = 31.$$

Задача D-4.7.

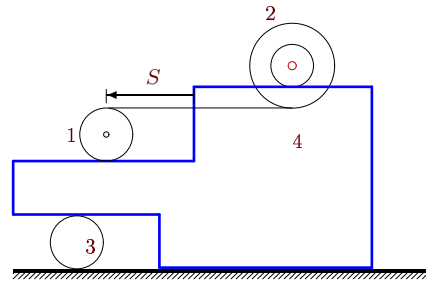
3



$$R_2 = 5, \quad r_2 = 3, \quad m_1 = 15, \quad m_2 = 2, \quad m_3 = 26, \\ m_4 = 15, \quad S = 180.$$

Задача D-4.8.

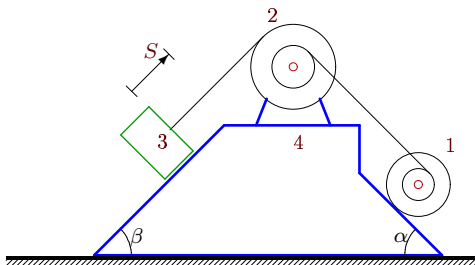
3



$$R_2 = 3, \quad r_2 = 2, \quad m_1 = 10, \quad m_2 = 2, \quad m_3 = 24, \\ m_4 = 10, \quad S = 34.$$

Задача D-4.9.

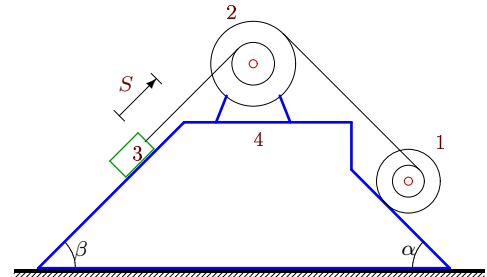
3



$$R_1 = 5, \quad r_1 = 3, \quad R_2 = 5, \quad r_2 = 3, \quad m_1 = 10, \quad m_2 = 15, \\ m_3 = 6, \quad m_4 = 12, \quad S = 129, \quad \cos \alpha = 0,8, \quad \beta = \pi/3.$$

Задача D-4.10.

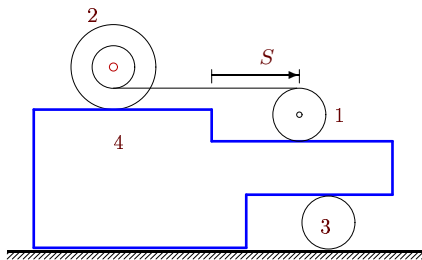
3



$$R_1 = 4, \quad r_1 = 2, \quad R_2 = 5, \quad r_2 = 3, \quad m_1 = 18, \quad m_2 = 12, \\ m_3 = 5, \quad m_4 = 12, \quad S = 94, \quad \cos \alpha = 0,8, \quad \cos \beta = 0,6.$$

Задача D-4.11.

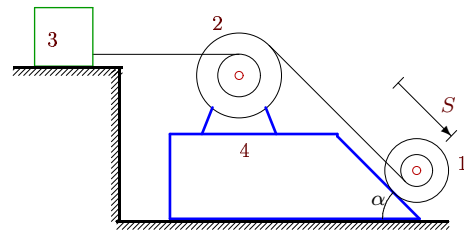
3



$$R_2 = 4, \quad r_2 = 3, \quad m_1 = 12, \quad m_2 = 2, \quad m_3 = 30, \\ m_4 = 10, \quad S = 78.$$

Задача D-4.12.

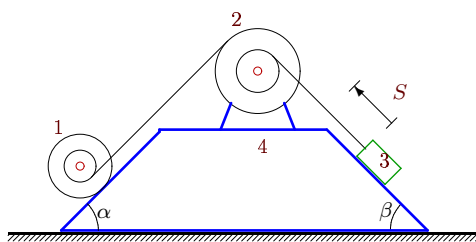
3



$$R_1 = 3, \quad r_1 = 2, \quad R_2 = 4, \quad r_2 = 3, \quad m_1 = 5, \quad m_2 = 10, \\ m_3 = 4, \quad m_4 = 13, \quad S = 32, \quad \cos \alpha = 0,8.$$

Задача D-4.13.

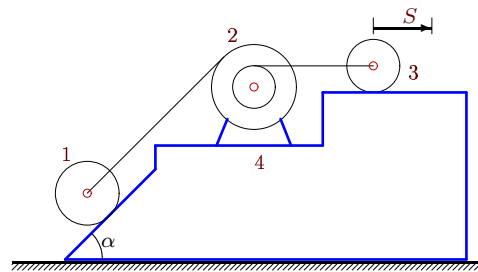
3



$$R_1 = 4, \quad r_1 = 2, \quad R_2 = 3, \quad r_2 = 2, \quad m_1 = 10, \quad m_2 = 15, \\ m_3 = 15, \quad m_4 = 10, \quad S = 100, \quad \cos \alpha = \cos \beta = 0,6.$$

Задача D-4.14.

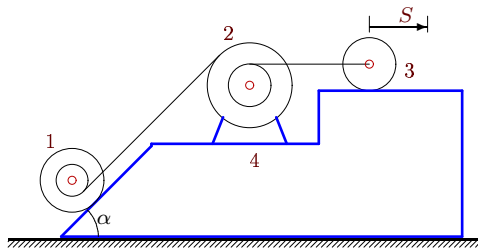
3



$$R_2 = 4, \quad r_2 = 2, \quad m_1 = 1, \quad m_2 = 15, \quad m_3 = 13, \\ m_4 = 12, \quad S = 123, \quad \alpha = \pi/3.$$

Задача D-4.15.

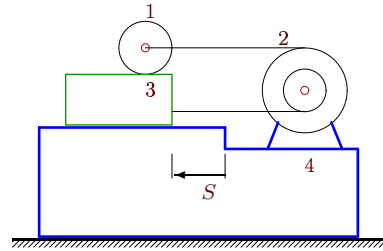
3



$$R_1 = 3, r_1 = 2, R_2 = 5, r_2 = 3, m_1 = 1, m_2 = 10, m_3 = 12, m_4 = 15, S = 76, \cos \alpha = 0,6.$$

Задача D-4.16.

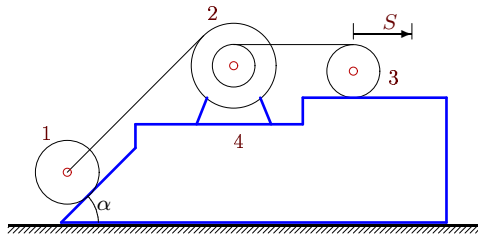
3



$$R_2 = 5, r_2 = 3, m_1 = 3, m_2 = 10, m_3 = 15, m_4 = 15, S = 43.$$

Задача D-4.17.

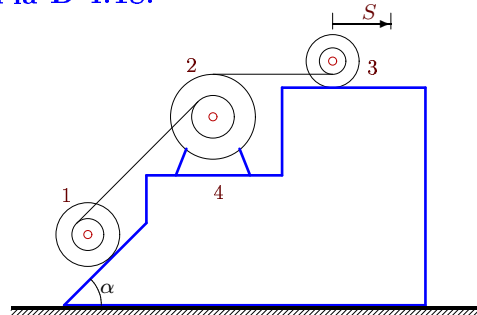
3



$$R_2 = 4, r_2 = 2, m_1 = 1, m_2 = 12, m_3 = 10, m_4 = 12, S = 140, \alpha = \pi/3.$$

Задача D-4.18.

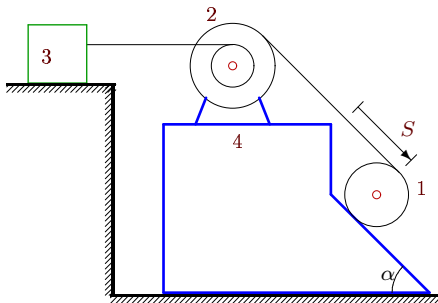
3



$$R_1 = 3, r_1 = 2, R_2 = 5, r_2 = 3, R_3 = 5, r_3 = 3, m_1 = 125, m_2 = 13, m_3 = 12, m_4 = 15, S = 165, \alpha = \pi/3.$$

Задача D-4.19.

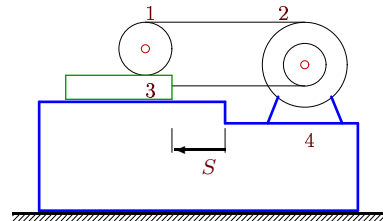
3



$$R_2 = 4, r_2 = 2, m_1 = 5, m_2 = 15, m_3 = 1, m_4 = 15, S = 144, \cos \alpha = 0,8.$$

Задача D-4.20.

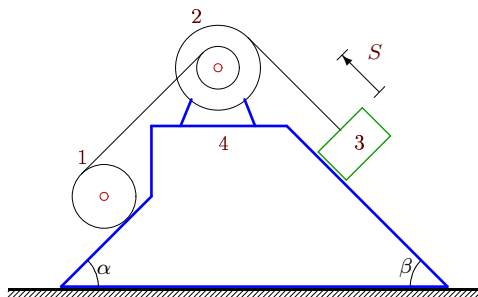
3



$$R_2 = 4, r_2 = 3, m_1 = 6, m_2 = 13, m_3 = 12, m_4 = 10, S = 41.$$

Задача D-4.21.

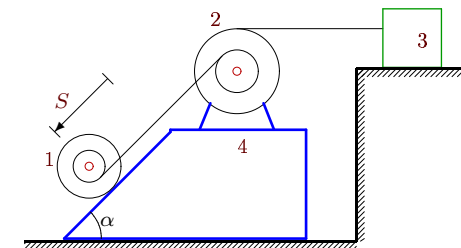
3



$$R_2 = 4, r_2 = 3, m_1 = 16, m_2 = 10, m_3 = 4, m_4 = 13, S = 43, \alpha = \beta = \pi/3.$$

Задача D-4.22.

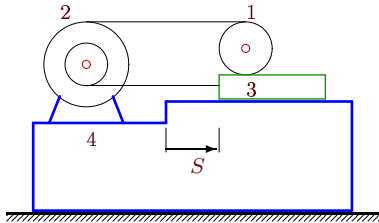
3



$$R_1 = 3, r_1 = 2, R_2 = 4, r_2 = 2, m_1 = 10, m_2 = 13, m_3 = 3, m_4 = 12, S = 76, \cos \alpha = 0,6.$$

Задача D-4.23.

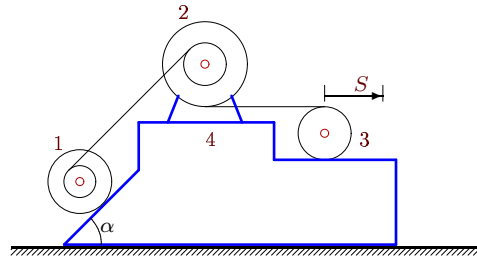
3



$$R_2 = 4, \quad r_2 = 2, \quad m_1 = 4, \quad m_2 = 13, \quad m_3 = 13, \\ m_4 = 15, \quad S = 135.$$

Задача D-4.24.

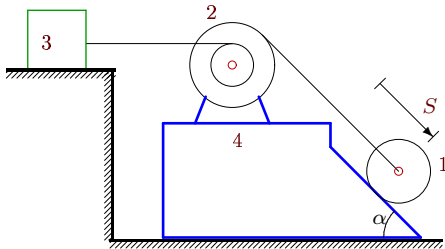
3



$$R_1 = 5, \quad r_1 = 3, \quad R_2 = 4, \quad r_2 = 2, \quad m_1 = 8, \quad m_2 = 15, \\ m_3 = 10, \quad m_4 = 15, \quad S = 144, \quad \cos \alpha = 0,6.$$

Задача D-4.25.

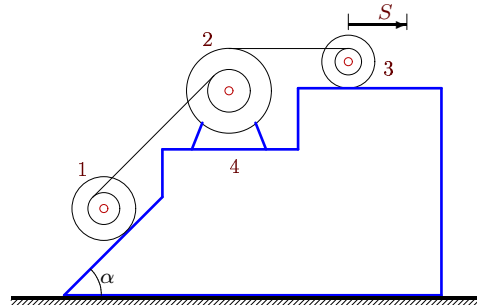
3



$$R_2 = 5, \quad r_2 = 3, \quad m_1 = 5, \quad m_2 = 15, \quad m_3 = 10, \\ m_4 = 15, \quad S = 180, \quad \cos \alpha = 0,8.$$

Задача D-4.26.

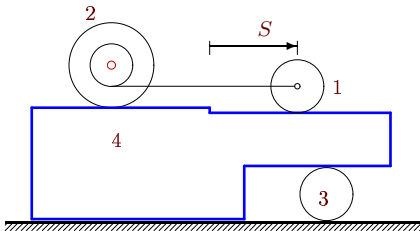
3



$$R_1 = 3, \quad r_1 = 2, \quad R_2 = 3, \quad r_2 = 2, \quad R_3 = 4, \quad r_3 = 3, \\ m_1 = 50, \quad m_2 = 13, \quad m_3 = 10, \quad m_4 = 10, \quad S = 166, \\ \cos \alpha = 0,6.$$

Задача D-4.27.

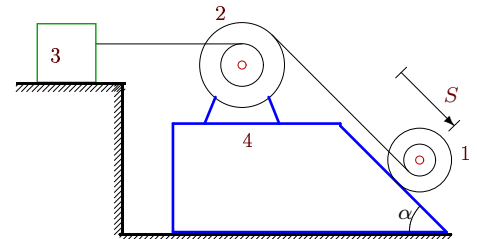
3



$$R_2 = 4, \quad r_2 = 2, \quad m_1 = 10, \quad m_2 = 4, \quad m_3 = 30, \\ m_4 = 12, \quad S = 82.$$

Задача D-4.28.

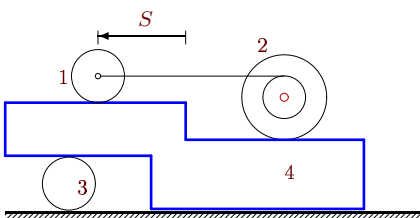
3



$$R_1 = 5, \quad r_1 = 3, \quad R_2 = 3, \quad r_2 = 2, \quad m_1 = 5, \quad m_2 = 12, \\ m_3 = 30, \quad m_4 = 10, \quad S = 228, \quad \cos \alpha = 0,8.$$

Задача D-4.29.

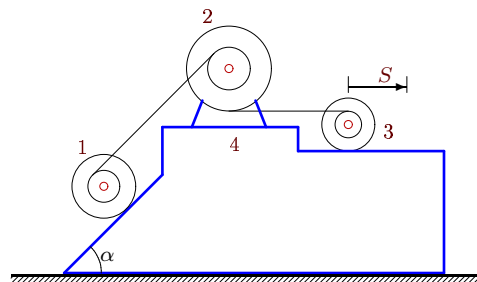
3



$$R_2 = 4, \quad r_2 = 2, \quad m_1 = 10, \quad m_2 = 12, \quad m_3 = 30, \\ m_4 = 12, \quad S = 98.$$

Задача D-4.30.

3



$$R_1 = 4, \quad r_1 = 3, \quad R_2 = 5, \quad r_2 = 3, \quad R_3 = 3, \quad r_3 = 2, \\ m_1 = 7, \quad m_2 = 10, \quad m_3 = 15, \quad m_4 = 15, \quad S = 141, \\ \alpha = \pi/3.$$

Ответы.**Теорема о центре масс системы**

09-Jun-17

№	Δ_4
1	69
2	57
3	24
4	27
5	18
6	6
7	36
8	2
9	18
10	38
11	56
12	5
13	54
14	42
15	30
16	10
17	48
18	21
19	20
20	11
21	5
22	16
23	33
24	21
25	40
26	62
27	36
28	48
29	36
30	39

D-4 файл 4d3-AnsA