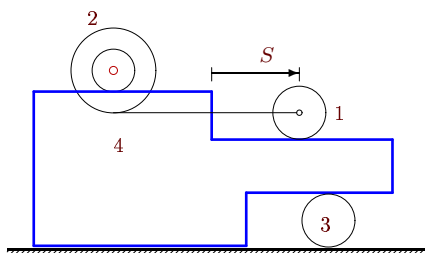


Теорема о центре масс системы

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.

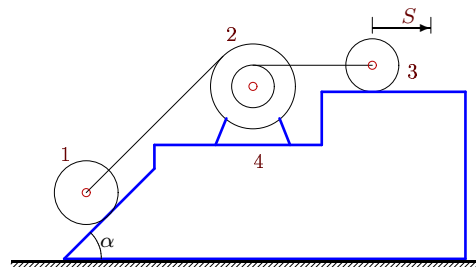
2



$$R_2 = 5, \quad r_2 = 3, \quad m_1 = 15, \quad m_2 = 4, \quad m_3 = 20, \\ m_4 = 13, \quad S = 168.$$

Задача D-4.2.

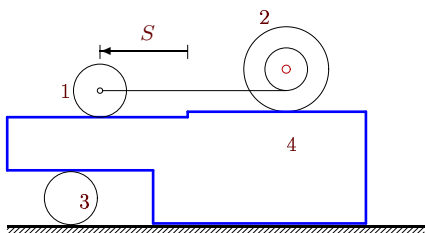
2



$$R_2 = 4, \quad r_2 = 2, \quad m_1 = 1, \quad m_2 = 10, \quad m_3 = 13, \\ m_4 = 12, \quad S = 108, \quad \alpha = \pi/3.$$

Задача D-4.3.

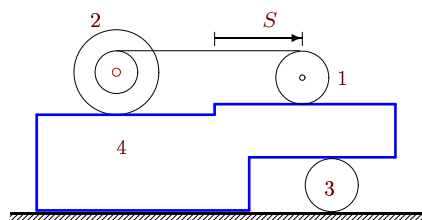
2



$$R_2 = 3, \quad r_2 = 2, \quad m_1 = 13, \quad m_2 = 1, \quad m_3 = 20, \\ m_4 = 13, \quad S = 74.$$

Задача D-4.4.

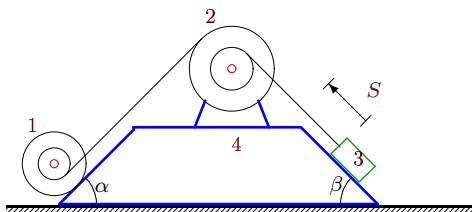
2



$$R_2 = 4, \quad r_2 = 3, \quad m_1 = 15, \quad m_2 = 14, \quad m_3 = 26, \\ m_4 = 12, \quad S = 162.$$

Задача D-4.5.

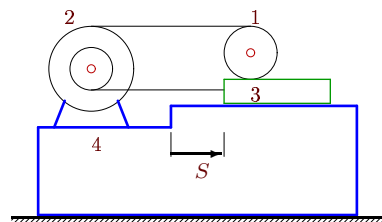
2



$$R_1 = 4, \quad r_1 = 2, \quad R_2 = 4, \quad r_2 = 3, \quad m_1 = 6, \quad m_2 = 15, \\ m_3 = 6, \quad m_4 = 13, \quad S = 120, \quad \alpha = \pi/3, \quad \beta = \pi/3.$$

Задача D-4.6.

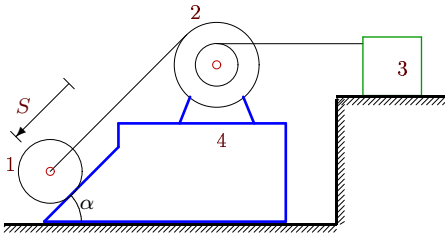
2



$$R_2 = 3, \quad r_2 = 2, \quad m_1 = 4, \quad m_2 = 10, \quad m_3 = 10, \\ m_4 = 13, \quad S = 111.$$

Задача D-4.7.

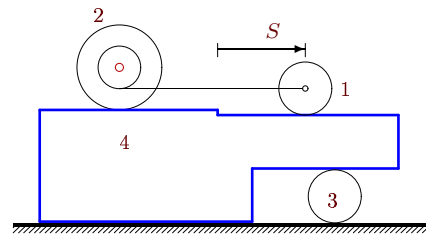
2



$R_2 = 4, r_2 = 2, m_1 = 10, m_2 = 12, m_3 = 2, m_4 = 15, S = 156, \cos \alpha = 0,6.$

Задача D-4.8.

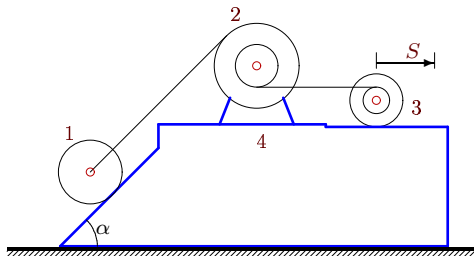
2



$R_2 = 4, r_2 = 2, m_1 = 13, m_2 = 4, m_3 = 20, m_4 = 10, S = 111.$

Задача D-4.9.

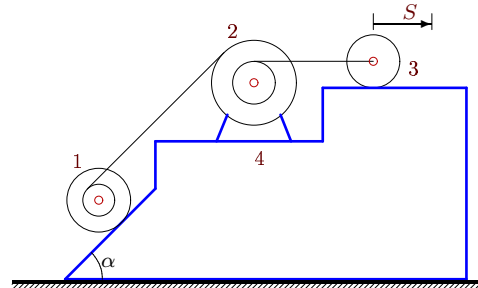
2



$R_2 = 4, r_2 = 3, R_3 = 4, r_3 = 2, m_1 = 1, m_2 = 13, m_3 = 15, m_4 = 10, S = 39, \alpha = \pi/3.$

Задача D-4.10.

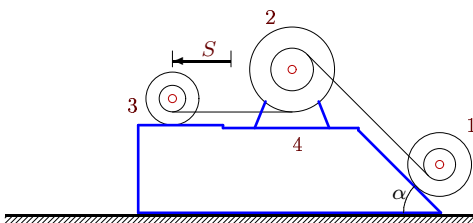
2



$R_1 = 4, r_1 = 2, R_2 = 3, r_2 = 2, m_1 = 5, m_2 = 12, m_3 = 13, m_4 = 13, S = 129, \cos \alpha = 0,6.$

Задача D-4.11.

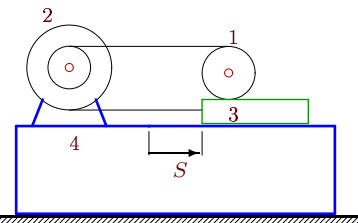
2



$R_1 = 4, r_1 = 2, R_2 = 4, r_2 = 2, R_3 = 4, r_3 = 2, m_1 = 5, m_2 = 15, m_3 = 10, m_4 = 12, S = 84, \cos \alpha = 0,8.$

Задача D-4.12.

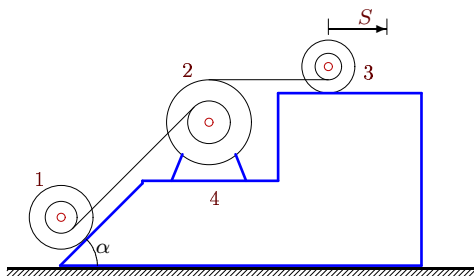
2



$R_2 = 3, r_2 = 2, m_1 = 6, m_2 = 12, m_3 = 13, m_4 = 10, S = 164.$

Задача D-4.13.

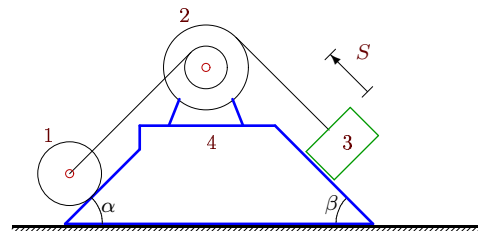
2



$R_1 = 4, r_1 = 3, R_2 = 4, r_2 = 3, R_3 = 4, r_3 = 3, m_1 = 20, m_2 = 13, m_3 = 15, m_4 = 10, S = 174, \cos \alpha = 0,6.$

Задача D-4.14.

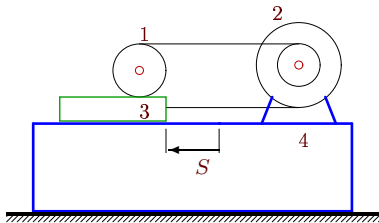
2



$R_2 = 3, r_2 = 2, m_1 = 3, m_2 = 15, m_3 = 8, m_4 = 13, S = 156, \alpha = \pi/3, \beta = \pi/3.$

Задача D-4.15.

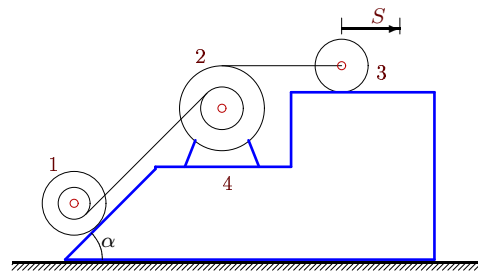
2



$R_2 = 5, r_2 = 3, m_1 = 10, m_2 = 13, m_3 = 12, m_4 = 12, S = 94.$

Задача D-4.16.

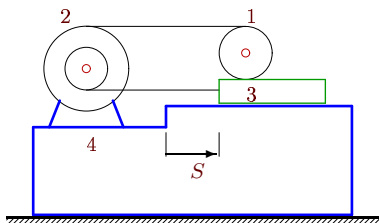
2



$R_1 = 5, r_1 = 3, R_2 = 5, r_2 = 3, m_1 = 4, m_2 = 12, m_3 = 15, m_4 = 15, S = 184, \alpha = \pi/3.$

Задача D-4.17.

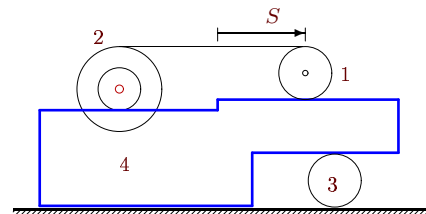
2



$R_2 = 4, r_2 = 2, m_1 = 4, m_2 = 15, m_3 = 13, m_4 = 15, S = 141.$

Задача D-4.18.

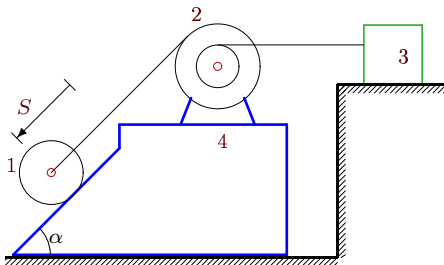
2



$R_2 = 5, r_2 = 3, m_1 = 12, m_2 = 16, m_3 = 20, m_4 = 13, S = 153.$

Задача D-4.19.

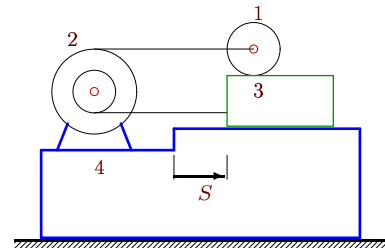
2



$R_2 = 4, r_2 = 3, m_1 = 5, m_2 = 13, m_3 = 8, m_4 = 10, S = 108, \cos \alpha = 0,6.$

Задача D-4.20.

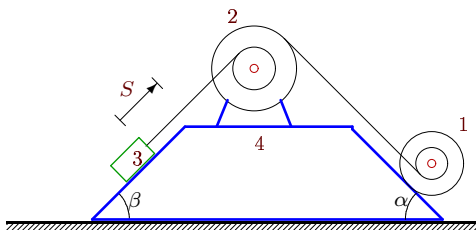
2



$R_2 = 4, r_2 = 2, m_1 = 2, m_2 = 15, m_3 = 13, m_4 = 12, S = 126.$

Задача D-4.21.

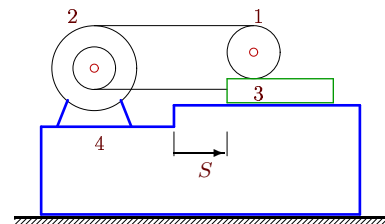
2



$R_1 = 5, r_1 = 3, R_2 = 4, r_2 = 2, m_1 = 2, m_2 = 15, m_3 = 6, m_4 = 12, S = 105, \cos \alpha = 0,8, \beta = \pi/3.$

Задача D-4.22.

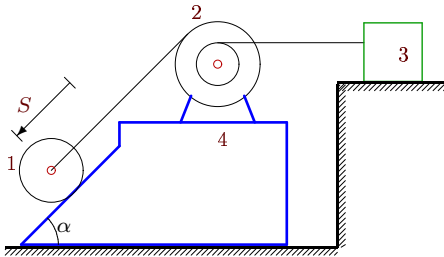
2



$R_2 = 4, r_2 = 3, m_1 = 6, m_2 = 12, m_3 = 12, m_4 = 13, S = 129.$

Задача D-4.23.

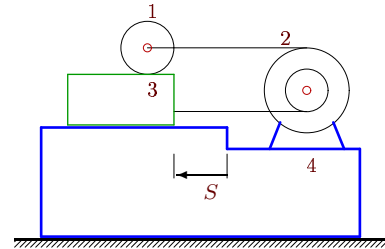
2



$R_2 = 5, r_2 = 3, m_1 = 10, m_2 = 15, m_3 = 10, m_4 = 15, S = 150, \cos \alpha = 0,6.$

Задача D-4.24.

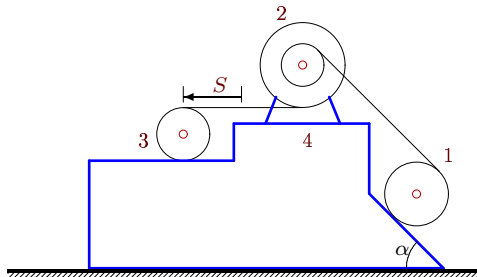
2



$R_2 = 5, r_2 = 3, m_1 = 3, m_2 = 15, m_3 = 12, m_4 = 12, S = 126.$

Задача D-4.25.

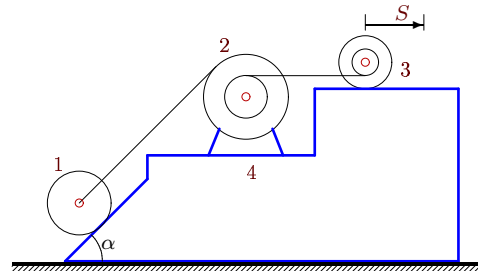
2



$R_2 = 5, r_2 = 3, m_1 = 25, m_2 = 13, m_3 = 15, m_4 = 15, S = 136, \cos \alpha = 0,8.$

Задача D-4.26.

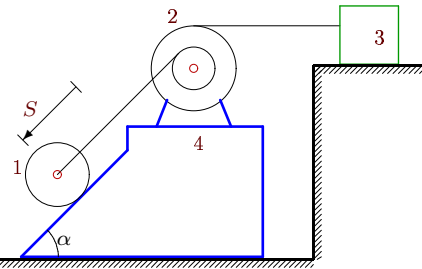
2



$R_2 = 4, r_2 = 3, R_3 = 3, r_3 = 2, m_1 = 9, m_2 = 12, m_3 = 12, m_4 = 13, S = 184, \alpha = \pi/3.$

Задача D-4.27.

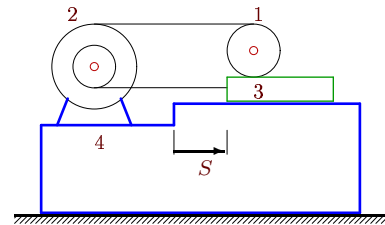
2



$R_2 = 3, r_2 = 2, m_1 = 5, m_2 = 12, m_3 = 4, m_4 = 10, S = 124, \cos \alpha = 0,6.$

Задача D-4.28.

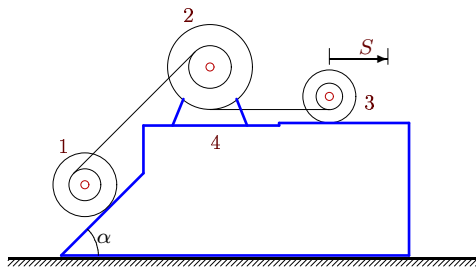
2



$R_2 = 4, r_2 = 2, m_1 = 4, m_2 = 10, m_3 = 13, m_4 = 15, S = 84.$

Задача D-4.29.

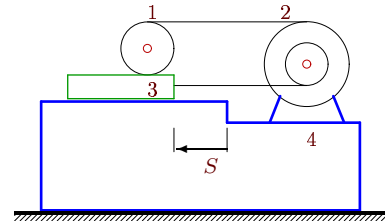
2



$R_1 = 4, r_1 = 2, R_2 = 5, r_2 = 3, R_3 = 4, r_3 = 3, m_1 = 20, m_2 = 12, m_3 = 12, m_4 = 12, S = 168, \alpha = \pi/3.$

Задача D-4.30.

2



$R_2 = 4, r_2 = 2, m_1 = 4, m_2 = 10, m_3 = 13, m_4 = 12, S = 39.$

Ответы.

Теорема о центре масс системы

09-Jun-17

№	Δ_4
1	36
2	42
3	32
4	93
5	33
6	27
7	28
8	63
9	14
10	48
11	16
12	56
13	72
14	20
15	28
16	72
17	33
18	72
19	27
20	27
21	33
22	33
23	36
24	21
25	6
26	56
27	36
28	22
29	33
30	11

D-4 файл 4d2-AnsA