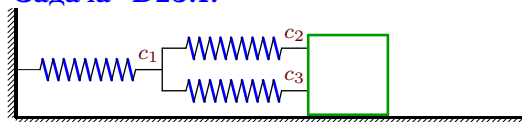


Свободное колебание точки

Груз массой m расположен на гладкой горизонтальной плоскости и скреплен с тремя пружинами, жесткости которых заданы. Определить частоту собственных колебаний груза. Массой пружин пренебречь. В ответах дана приведенная жесткость пружин c_0 и частота k .

Задача D23.1.

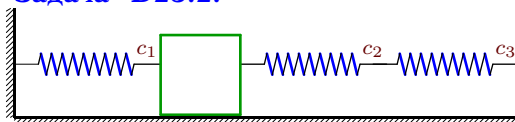
5



$$c_1 = 3 \text{ Н/м}, c_2 = 2 \text{ Н/м}, \\ c_3 = 6 \text{ Н/м}, m = 7 \text{ кг}.$$

Задача D23.2.

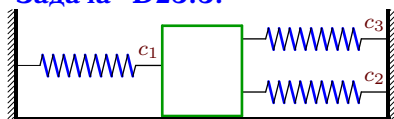
5



$$c_1 = 3 \text{ Н/м}, c_2 = 1 \text{ Н/м}, \\ c_3 = 3 \text{ Н/м}, m = 4 \text{ кг}.$$

Задача D23.3.

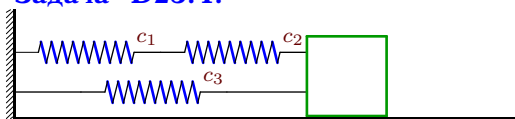
5



$$c_1 = 1 \text{ Н/м}, c_2 = 2 \text{ Н/м}, \\ c_3 = 1 \text{ Н/м}, m = 5 \text{ кг}.$$

Задача D23.4.

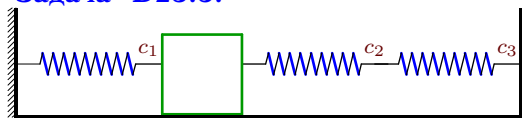
5



$$c_1 = 4 \text{ Н/м}, c_2 = 2 \text{ Н/м}, \\ c_3 = 5 \text{ Н/м}, m = 7 \text{ кг}.$$

Задача D23.5.

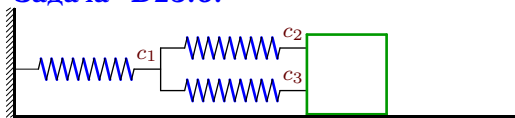
5



$$c_1 = 8 \text{ Н/м}, c_2 = 1 \text{ Н/м}, \\ c_3 = 3 \text{ Н/м}, m = 2 \text{ кг}.$$

Задача D23.6.

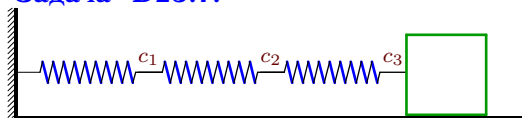
5



$$c_1 = 8 \text{ Н/м}, c_2 = 4 \text{ Н/м}, \\ c_3 = 2 \text{ Н/м}, m = 2 \text{ кг}.$$

Задача D23.7.

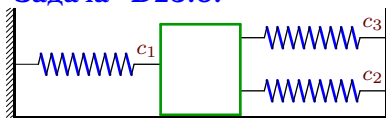
5



$$c_1 = 8 \text{ Н/м}, c_2 = 1 \text{ Н/м}, \\ c_3 = 6 \text{ Н/м}, m = 8 \text{ кг}.$$

Задача D23.8.

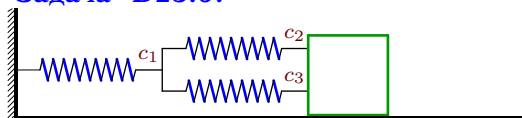
5



$$c_1 = 5 \text{ Н/м}, c_2 = 7 \text{ Н/м}, \\ c_3 = 5 \text{ Н/м}, m = 9 \text{ кг}.$$

Задача D23.9.

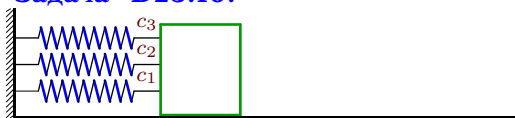
5



$$c_1 = 3 \text{ Н/м}, c_2 = 4 \text{ Н/м}, \\ c_3 = 2 \text{ Н/м}, m = 4 \text{ кг}.$$

Задача D23.10.

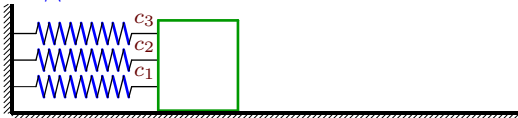
5



$$c_1 = 4 \text{ Н/м}, c_2 = 1 \text{ Н/м}, \\ c_3 = 3 \text{ Н/м}, m = 7 \text{ кг}.$$

Задача D23.11.

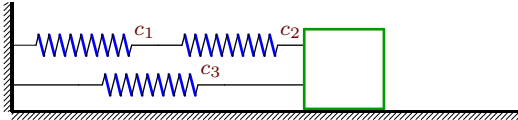
5



$$c_1 = 1 \text{ Н/м}, c_2 = 5 \text{ Н/м}, \\ c_3 = 3 \text{ Н/м}, m = 5 \text{ кг}.$$

Задача D23.13.

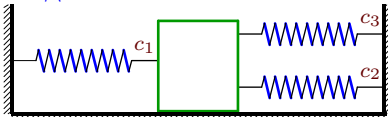
5



$$c_1 = 3 \text{ Н/м}, c_2 = 7 \text{ Н/м}, \\ c_3 = 5 \text{ Н/м}, m = 7 \text{ кг}.$$

Задача D23.15.

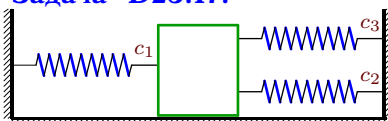
5



$$c_1 = 3 \text{ Н/м}, c_2 = 1 \text{ Н/м}, \\ c_3 = 2 \text{ Н/м}, m = 3 \text{ кг}.$$

Задача D23.17.

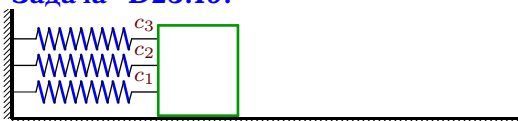
5



$$c_1 = 5 \text{ Н/м}, c_2 = 1 \text{ Н/м}, \\ c_3 = 3 \text{ Н/м}, m = 4 \text{ кг}.$$

Задача D23.19.

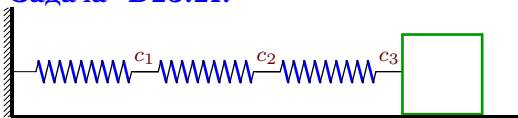
5



$$c_1 = 3 \text{ Н/м}, c_2 = 4 \text{ Н/м}, \\ c_3 = 3 \text{ Н/м}, m = 8 \text{ кг}.$$

Задача D23.21.

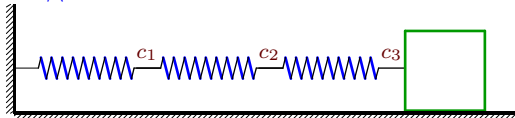
5



$$c_1 = 5 \text{ Н/м}, c_2 = 2 \text{ Н/м}, \\ c_3 = 3 \text{ Н/м}, m = 1 \text{ кг}.$$

Задача D23.12.

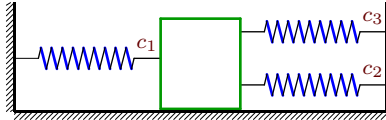
5



$$c_1 = 8 \text{ Н/м}, c_2 = 1 \text{ Н/м}, \\ c_3 = 4 \text{ Н/м}, m = 3 \text{ кг}.$$

Задача D23.14.

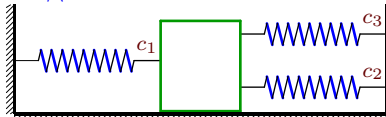
5



$$c_1 = 5 \text{ Н/м}, c_2 = 1 \text{ Н/м}, \\ c_3 = 4 \text{ Н/м}, m = 9 \text{ кг}.$$

Задача D23.16.

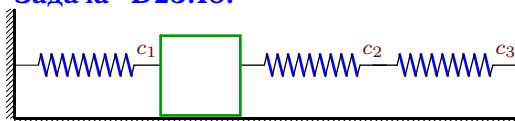
5



$$c_1 = 1 \text{ Н/м}, c_2 = 7 \text{ Н/м}, \\ c_3 = 3 \text{ Н/м}, m = 4 \text{ кг}.$$

Задача D23.18.

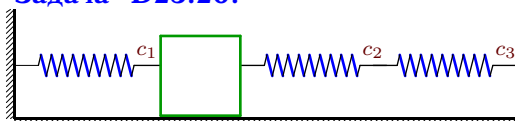
5



$$c_1 = 8 \text{ Н/м}, c_2 = 2 \text{ Н/м}, \\ c_3 = 5 \text{ Н/м}, m = 4 \text{ кг}.$$

Задача D23.20.

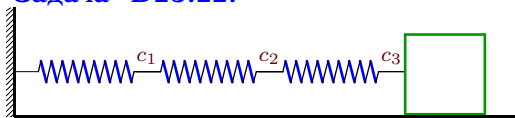
5



$$c_1 = 2 \text{ Н/м}, c_2 = 1 \text{ Н/м}, \\ c_3 = 3 \text{ Н/м}, m = 6 \text{ кг}.$$

Задача D23.22.

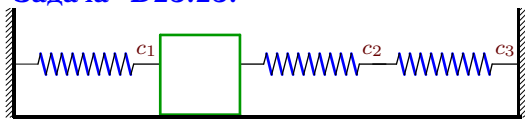
5



$$c_1 = 1 \text{ Н/м}, c_2 = 7 \text{ Н/м}, \\ c_3 = 3 \text{ Н/м}, m = 6 \text{ кг}.$$

Задача D23.23.

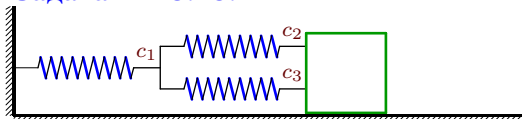
5



$$c_1 = 8 \text{ Н/м}, c_2 = 5 \text{ Н/м}, \\ c_3 = 1 \text{ Н/м}, m = 3 \text{ кг}.$$

Задача D23.25.

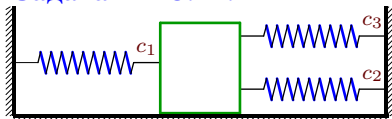
5



$$c_1 = 4 \text{ Н/м}, c_2 = 1 \text{ Н/м}, \\ c_3 = 3 \text{ Н/м}, m = 2 \text{ кг}.$$

Задача D23.27.

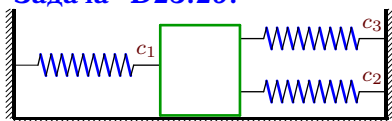
5



$$c_1 = 1 \text{ Н/м}, c_2 = 4 \text{ Н/м}, \\ c_3 = 2 \text{ Н/м}, m = 5 \text{ кг}.$$

Задача D23.29.

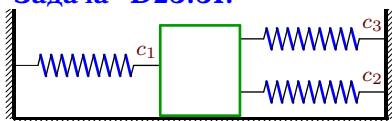
5



$$c_1 = 3 \text{ Н/м}, c_2 = 2 \text{ Н/м}, \\ c_3 = 3 \text{ Н/м}, m = 3 \text{ кг}.$$

Задача D23.31.

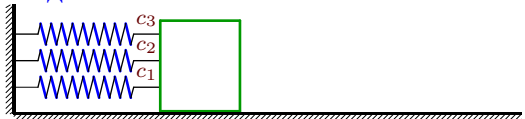
5



$$c_1 = 4 \text{ Н/м}, c_2 = 2 \text{ Н/м}, \\ c_3 = 4 \text{ Н/м}, m = 2 \text{ кг}.$$

Задача D23.33.

5



$$c_1 = 3 \text{ Н/м}, c_2 = 2 \text{ Н/м}, \\ c_3 = 5 \text{ Н/м}, m = 8 \text{ кг}.$$

Задача D23.24.

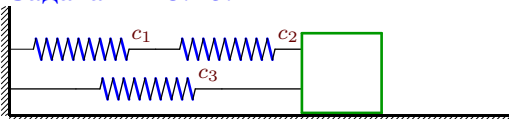
5



$$c_1 = 1 \text{ Н/м}, c_2 = 5 \text{ Н/м}, \\ c_3 = 2 \text{ Н/м}, m = 5 \text{ кг}.$$

Задача D23.26.

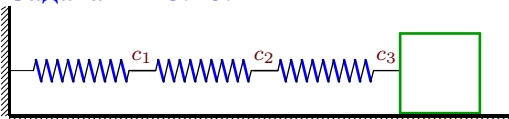
5



$$c_1 = 8 \text{ Н/м}, c_2 = 3 \text{ Н/м}, \\ c_3 = 2 \text{ Н/м}, m = 1 \text{ кг}.$$

Задача D23.28.

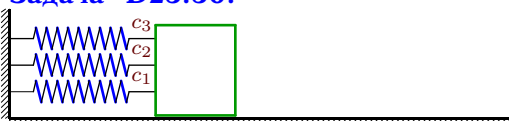
5



$$c_1 = 5 \text{ Н/м}, c_2 = 3 \text{ Н/м}, \\ c_3 = 6 \text{ Н/м}, m = 2 \text{ кг}.$$

Задача D23.30.

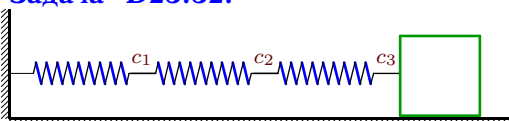
5



$$c_1 = 5 \text{ Н/м}, c_2 = 7 \text{ Н/м}, \\ c_3 = 4 \text{ Н/м}, m = 2 \text{ кг}.$$

Задача D23.32.

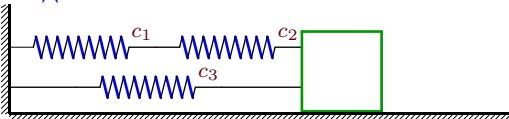
5



$$c_1 = 2 \text{ Н/м}, c_2 = 5 \text{ Н/м}, \\ c_3 = 6 \text{ Н/м}, m = 5 \text{ кг}.$$

Задача D23.34.

5



$$c_1 = 5 \text{ Н/м}, c_2 = 7 \text{ Н/м}, \\ c_3 = 2 \text{ Н/м}, m = 1 \text{ кг}.$$

D23 Ответы.**Свободное колебание точки**

23.03.2012

№	c_0 , Н/м	k , с ⁻¹
1	0.458	0.256
2	3.750	0.968
3	4.000	0.894
4	6.333	0.951
5	8.750	2.092
6	0.292	0.382
7	0.774	0.311
8	17.000	1.374
9	0.500	0.354
10	8.000	1.069
11	9.000	1.342
12	0.727	0.492
13	7.100	1.007
14	10.000	1.054
15	6.000	1.414
16	11.000	1.658
17	9.000	1.500
18	9.429	1.535
19	10.000	1.118
20	2.750	0.677
21	0.968	0.984
22	0.677	0.336
23	8.833	1.716
24	8.000	1.265
25	0.500	0.500
26	4.182	2.045
27	7.000	1.183
28	1.429	0.845
29	8.000	1.633
30	16.000	2.828
31	10.000	2.236
32	1.154	0.480
33	10.000	1.118
34	4.917	2.217

D23 файл о23d5A