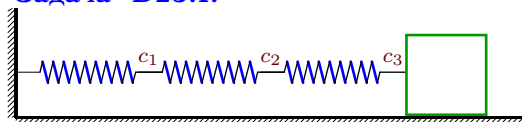


Свободное колебание точки

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.

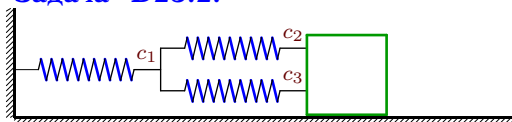
||



$$c_1 = 4 \text{ Н/м}, c_2 = 2 \text{ Н/м}, \\ c_3 = 12 \text{ Н/м}, m = 1.2 \text{ кг}.$$

Задача D23.2.

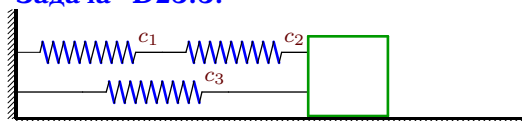
||



$$c_1 = 1 \text{ Н/м}, c_2 = 3 \text{ Н/м}, \\ c_3 = 6 \text{ Н/м}, m = 0.9 \text{ кг}.$$

Задача D23.3.

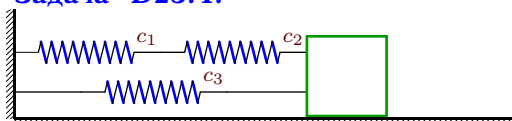
||



$$c_1 = 5 \text{ Н/м}, c_2 = 5 \text{ Н/м}, \\ c_3 = 240.5 \text{ Н/м}, m = 3 \text{ кг}.$$

Задача D23.4.

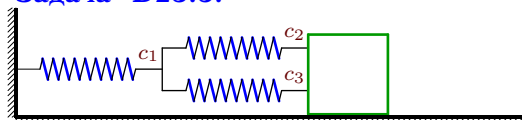
||



$$c_1 = 6 \text{ Н/м}, c_2 = 4 \text{ Н/м}, \\ c_3 = 6.6 \text{ Н/м}, m = 1 \text{ кг}.$$

Задача D23.5.

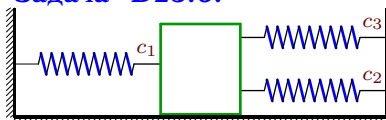
||



$$c_1 = 1 \text{ Н/м}, c_2 = 5 \text{ Н/м}, \\ c_3 = 4 \text{ Н/м}, m = 0.9 \text{ кг}.$$

Задача D23.6.

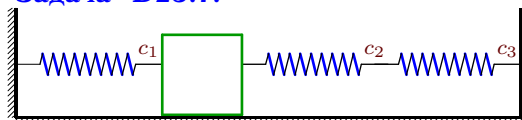
||



$$c_1 = 3 \text{ Н/м}, c_2 = 5 \text{ Н/м}, \\ c_3 = 40 \text{ Н/м}, m = 3 \text{ кг}.$$

Задача D23.7.

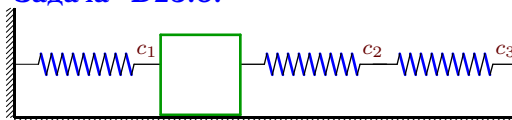
||



$$c_1 = 98.4 \text{ Н/м}, c_2 = 2 \text{ Н/м}, \\ c_3 = 8 \text{ Н/м}, m = 4 \text{ кг}.$$

Задача D23.8.

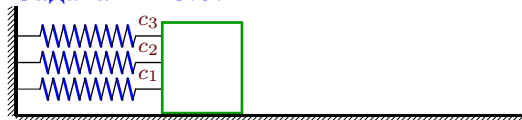
||



$$c_1 = 33.9 \text{ Н/м}, c_2 = 3 \text{ Н/м}, \\ c_3 = 7 \text{ Н/м}, m = 1 \text{ кг}.$$

Задача D23.9.

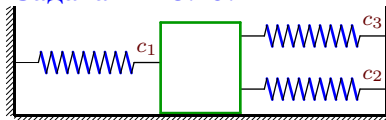
||



$$c_1 = 136 \text{ Н/м}, c_2 = 5 \text{ Н/м}, \\ c_3 = 3 \text{ Н/м}, m = 1 \text{ кг}.$$

Задача D23.10.

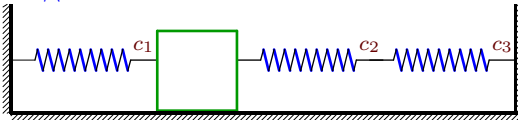
||



$$c_1 = 6 \text{ Н/м}, c_2 = 2 \text{ Н/м}, \\ c_3 = 355 \text{ Н/м}, m = 3 \text{ кг}.$$

Задача D23.11.

11

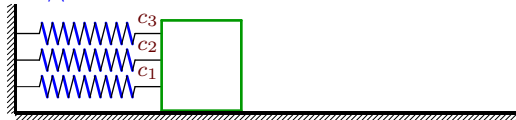


$$c_1 = 143.1 \text{ Н/м}, c_2 = 1 \text{ Н/м},$$

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

Задача D23.12.

11

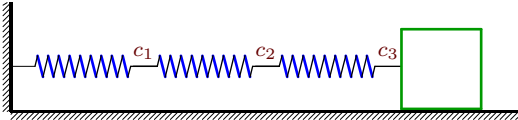


$$c_1 = 41 \text{ Н/м}, c_2 = 5 \text{ Н/м},$$

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

Задача D23.13.

11

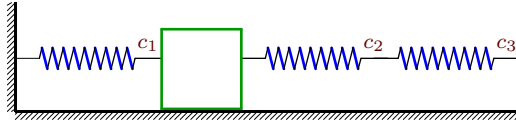


$$c_1 = 4 \text{ Н/м}, c_2 = 4 \text{ Н/м},$$

$$c_3 = 8 \text{ Н/м}, m = 1.6 \text{ кг}.$$

Задача D23.14.

11

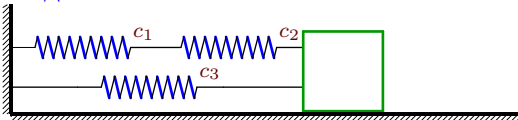


$$c_1 = 106.4 \text{ Н/м}, c_2 = 2 \text{ Н/м},$$

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

Задача D23.15.

11

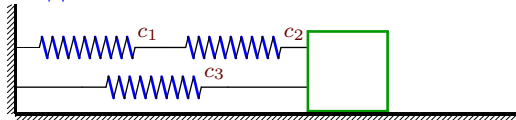


$$c_1 = 9 \text{ Н/м}, c_2 = 1 \text{ Н/м},$$

$$c_3 = 31.1 \text{ Н/м}, m = 2 \text{ кг}.$$

Задача D23.16.

11

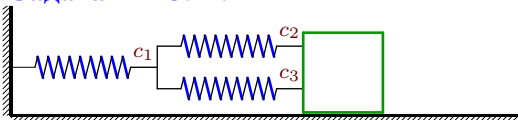


$$c_1 = 5 \text{ Н/м}, c_2 = 5 \text{ Н/м},$$

$$c_3 = 97.5 \text{ Н/м}, m = 4 \text{ кг}.$$

Задача D23.17.

11

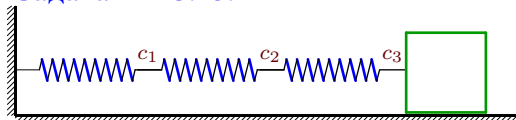


$$c_1 = 4 \text{ Н/м}, c_2 = 5 \text{ Н/м},$$

$$c_3 = 1 \text{ Н/м}, m = 2.4 \text{ кг}.$$

Задача D23.18.

11

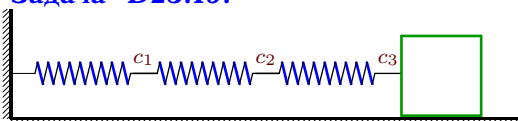


$$c_1 = 3 \text{ Н/м}, c_2 = 3 \text{ Н/м},$$

$$c_3 = 6 \text{ Н/м}, m = 1.2 \text{ кг}.$$

Задача D23.19.

11

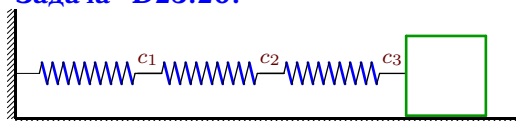


$$c_1 = 2 \text{ Н/м}, c_2 = 2 \text{ Н/м},$$

$$c_3 = 4 \text{ Н/м}, m = 0.8 \text{ кг}.$$

Задача D23.20.

11

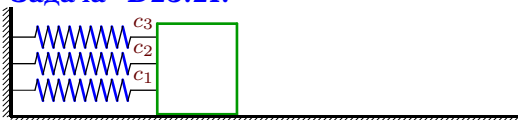


$$c_1 = 4 \text{ Н/м}, c_2 = 4 \text{ Н/м},$$

$$c_3 = 8 \text{ Н/м}, m = 1.6 \text{ кг}.$$

Задача D23.21.

11

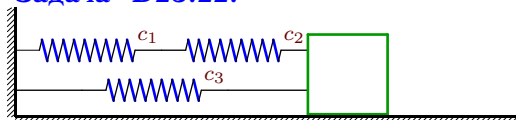


$$c_1 = 2 \text{ Н/м}, c_2 = 3 \text{ Н/м},$$

$$c_3 = 11 \text{ Н/м}, m = 4 \text{ кг}.$$

Задача D23.22.

11

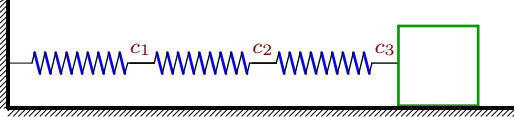


$$c_1 = 6 \text{ Н/м}, c_2 = 4 \text{ Н/м},$$

$$c_3 = 13.6 \text{ Н/м}, m = 4 \text{ кг}.$$

Задача D23.23.

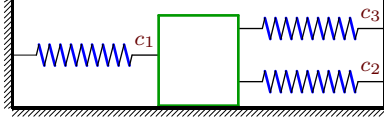
11



$c_1 = 10 \text{ Н/м}, c_2 = 5 \text{ Н/м},$
 $c_3 = 30 \text{ Н/м}, m = 3 \text{ кг}.$

Задача D23.24.

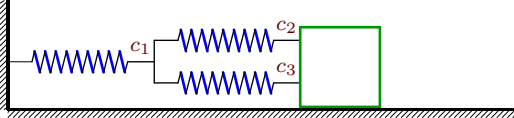
11



$c_1 = 6 \text{ Н/м}, c_2 = 4 \text{ Н/м},$
 $c_3 = -2 \text{ Н/м}, m = 2 \text{ кг}.$

Задача D23.25.

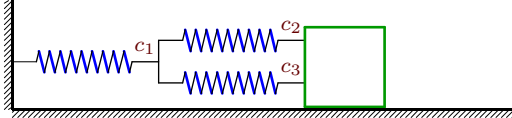
11



$c_1 = 2 \text{ Н/м}, c_2 = 5 \text{ Н/м},$
 $c_3 = 3 \text{ Н/м}, m = 1.6 \text{ кг}.$

Задача D23.26.

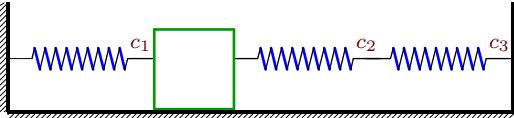
11



$c_1 = 1 \text{ Н/м}, c_2 = 3 \text{ Н/м},$
 $c_3 = 6 \text{ Н/м}, m = 0.9 \text{ кг}.$

Задача D23.27.

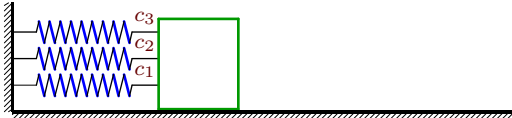
11



$c_1 = 33.6 \text{ Н/м}, c_2 = 4 \text{ Н/м},$
 $c_3 = 6 \text{ Н/м}, m = 4 \text{ кг}.$

Задача D23.28.

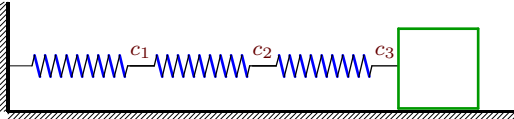
11



$c_1 = 2 \text{ Н/м}, c_2 = 1 \text{ Н/м},$
 $c_3 = 9 \text{ Н/м}, m = 3 \text{ кг}.$

Задача D23.29.

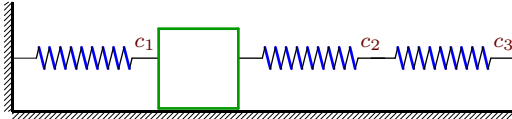
11



$c_1 = 6 \text{ Н/м}, c_2 = 12 \text{ Н/м},$
 $c_3 = 36 \text{ Н/м}, m = 3.6 \text{ кг}.$

Задача D23.30.

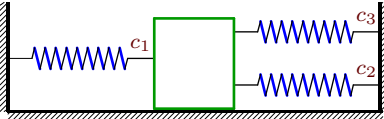
11



$c_1 = 9.9 \text{ Н/м}, c_2 = 3 \text{ Н/м},$
 $c_3 = 7 \text{ Н/м}, m = 3 \text{ кг}.$

Задача D23.31.

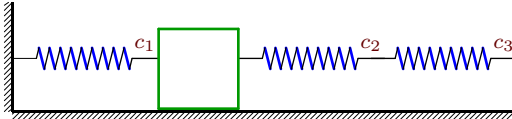
11



$c_1 = 2 \text{ Н/м}, c_2 = 47 \text{ Н/м},$
 $c_3 = 1 \text{ Н/м}, m = 2 \text{ кг}.$

Задача D23.32.

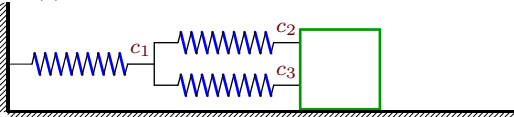
11



$c_1 = 146.1 \text{ Н/м}, c_2 = 1 \text{ Н/м},$
 $c_3 = 9 \text{ Н/м}, m = 3 \text{ кг}.$

Задача D23.33.

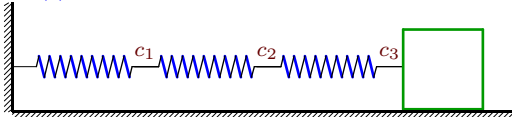
11



$c_1 = 2 \text{ Н/м}, c_2 = 1 \text{ Н/м},$
 $c_3 = 7 \text{ Н/м}, m = 0.18 \text{ кг}.$

Задача D23.34.

11



$c_1 = 6 \text{ Н/м}, c_2 = 6 \text{ Н/м},$
 $c_3 = 12 \text{ Н/м}, m = 2.4 \text{ кг}.$

D23 Ответы.
Свободное колебание точки

01.10.2012

№	c_0 , Н/м	k , с ⁻¹
1	1.200	1.000
2	0.900	1.000
3	243.000	9.000
4	9.000	3.000
5	0.900	1.000
6	48.000	4.000
7	100.000	5.000
8	36.000	6.000
9	144.000	12.000
10	363.000	11.000
11	144.000	12.000
12	50.000	5.000
13	1.600	1.000
14	108.000	6.000
15	32.000	4.000
16	100.000	5.000
17	2.400	1.000
18	1.200	1.000
19	0.800	1.000
20	1.600	1.000
21	16.000	2.000
22	16.000	2.000
23	3.000	1.000
24	8.000	2.000
25	1.600	1.000
26	0.900	1.000
27	36.000	3.000
28	12.000	2.000
29	3.600	1.000
30	12.000	2.000
31	50.000	5.000
32	147.000	7.000
33	1.600	3.000
34	2.400	1.000

D23 файл о23d11A