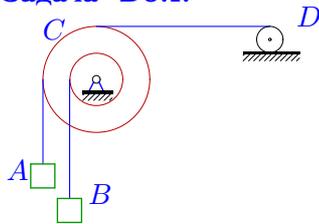
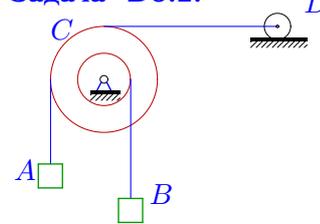
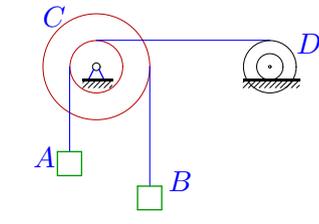
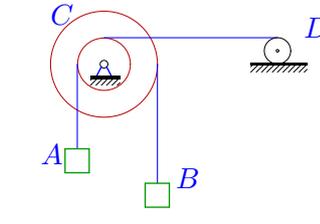
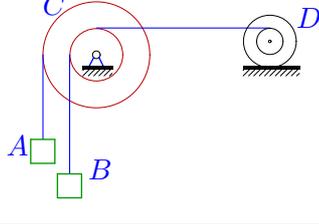
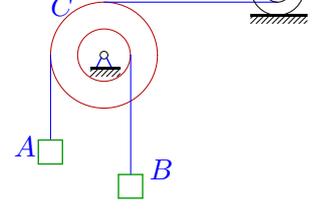
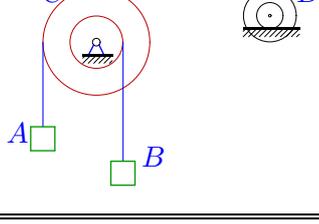
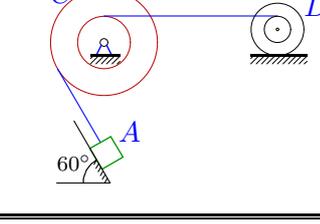
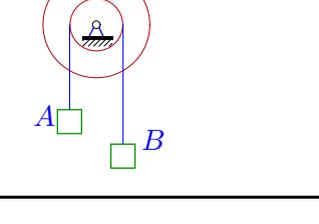
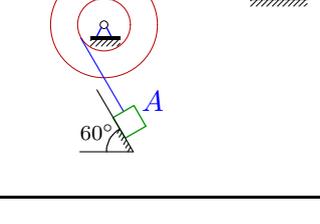


Теорема об изменении кинетической энергии (3)

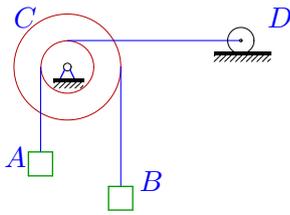
Механическая система с одной степенью свободы состоит из тел, совершающих плоское движение. Под действием сил тяжести система из состояния покоя приходит в движение. Какую скорость приобретет груз A , переместившись (вверх или вниз) на $S = 1$ м? Качение цилиндра (или блока) происходит без проскальзывания. Коэффициент трения скольжения f . Радиус инерции i_D . Внешние радиусы R_C, R_D , внутренние r_C, r_D .

Кирсанов М.Н. **Решебник. Теоретическая механика**/Под ред. А. И. Кириллова. – М.: ФИЗМАТЛИТ, 2008. – 384 с. (с.247.)

<p>Задача D8.1. 1</p>  <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="text-align: left;"> $r_C = 18 \text{ см},$ $R_C = 37 \text{ см},$ $r_D = 11 \text{ см},$ </div> <div style="text-align: left;"> $m_A = 12 \text{ кг},$ $m_B = 4 \text{ кг},$ $m_D = 8 \text{ кг}.$ </div> </div>	<p>Задача D8.2. 1</p>  <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="text-align: left;"> $r_C = 20 \text{ см},$ $R_C = 40 \text{ см},$ $r_D = 15 \text{ см},$ </div> <div style="text-align: left;"> $m_A = 4 \text{ кг},$ $m_B = 2 \text{ кг},$ $m_D = 9 \text{ кг}.$ </div> </div>
<p>Задача D8.3. 1</p>  <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="text-align: left;"> $r_C = 22 \text{ см},$ $R_C = 37 \text{ см},$ $r_D = 18 \text{ см},$ $R_D = 26 \text{ см},$ $i_D = 25 \text{ см}.$ </div> <div style="text-align: left;"> $m_A = 24 \text{ кг},$ $m_B = 6 \text{ кг},$ $m_D = 4 \text{ кг}.$ </div> </div>	<p>Задача D8.4. 1</p>  <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="text-align: left;"> $r_C = 18 \text{ см},$ $R_C = 33 \text{ см},$ $r_D = 13 \text{ см},$ </div> <div style="text-align: left;"> $m_A = 18 \text{ кг},$ $m_B = 4 \text{ кг},$ $m_D = 4 \text{ кг}.$ </div> </div>
<p>Задача D8.5. 1</p>  <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="text-align: left;"> $r_C = 14 \text{ см},$ $R_C = 32 \text{ см},$ $r_D = 14 \text{ см},$ $R_D = 23 \text{ см},$ $i_D = 18 \text{ см}.$ </div> <div style="text-align: left;"> $m_A = 3 \text{ кг},$ $m_B = 2 \text{ кг},$ $m_D = 7 \text{ кг}.$ </div> </div>	<p>Задача D8.6. 1</p>  <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="text-align: left;"> $r_C = 18 \text{ см},$ $R_C = 38 \text{ см},$ $r_D = 13 \text{ см},$ $R_D = 23 \text{ см},$ $i_D = 19 \text{ см}.$ </div> <div style="text-align: left;"> $m_A = 10 \text{ кг},$ $m_B = 4 \text{ кг},$ $m_D = 9 \text{ кг}.$ </div> </div>
<p>Задача D8.7. 1</p>  <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="text-align: left;"> $r_C = 14 \text{ см},$ $R_C = 31 \text{ см},$ $r_D = 15 \text{ см},$ $R_D = 24 \text{ см},$ $i_D = 22 \text{ см}.$ </div> <div style="text-align: left;"> $m_A = 12 \text{ кг},$ $m_B = 5 \text{ кг},$ $m_D = 6 \text{ кг}.$ </div> </div>	<p>Задача D8.8. 1</p>  <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="text-align: left;"> $r_C = 22 \text{ см},$ $R_C = 41 \text{ см},$ $r_D = 12 \text{ см},$ $R_D = 22 \text{ см},$ $i_D = 17 \text{ см}.$ </div> <div style="text-align: left;"> $f = 0.6,$ $m_A = 3 \text{ кг},$ $m_D = 8 \text{ кг}.$ </div> </div>
<p>Задача D8.9. 1</p>  <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="text-align: left;"> $r_C = 14 \text{ см},$ $R_C = 32 \text{ см},$ $r_D = 20 \text{ см},$ </div> <div style="text-align: left;"> $m_A = 8 \text{ кг},$ $m_B = 4 \text{ кг},$ $m_D = 7 \text{ кг}.$ </div> </div>	<p>Задача D8.10. 1</p>  <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="text-align: left;"> $r_C = 20 \text{ см},$ $R_C = 34 \text{ см},$ $r_D = 19 \text{ см},$ </div> <div style="text-align: left;"> $f = 0.1,$ $m_A = 8 \text{ кг},$ $m_D = 3 \text{ кг}.$ </div> </div>

Задача D8.11.

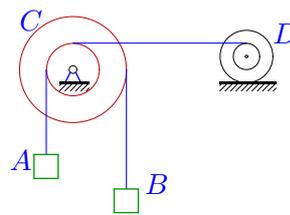
1



$r_c = 16 \text{ см}, m_A = 4 \text{ кг},$
 $R_c = 34 \text{ см}, m_B = 1 \text{ кг},$
 $r_D = 11 \text{ см}, m_D = 7 \text{ кг}.$

Задача D8.12.

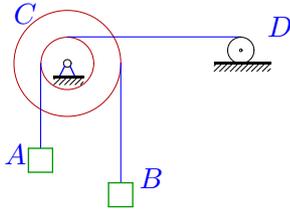
1



$r_c = 22 \text{ см}, m_A = 25 \text{ кг},$
 $R_c = 38 \text{ см}, m_B = 6 \text{ кг},$
 $r_D = 17 \text{ см}, m_D = 5 \text{ кг},$
 $R_D = 25 \text{ см},$
 $i_D = 24 \text{ см}.$

Задача D8.13.

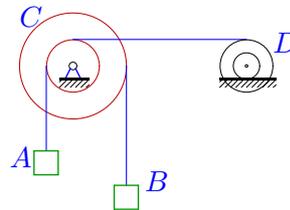
1



$r_c = 22 \text{ см}, m_A = 7 \text{ кг},$
 $R_c = 37 \text{ см}, m_B = 2 \text{ кг},$
 $r_D = 14 \text{ см}, m_D = 4 \text{ кг}.$

Задача D8.14.

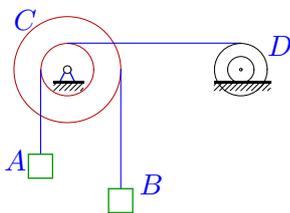
1



$r_c = 22 \text{ см}, m_A = 26 \text{ кг},$
 $R_c = 42 \text{ см}, m_B = 6 \text{ кг},$
 $r_D = 16 \text{ см}, m_D = 9 \text{ кг},$
 $R_D = 26 \text{ см},$
 $i_D = 23 \text{ см}.$

Задача D8.15.

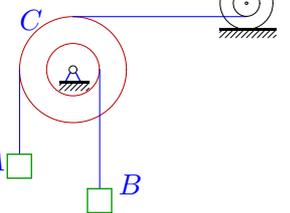
1



$r_c = 16 \text{ см}, m_A = 14 \text{ кг},$
 $R_c = 34 \text{ см}, m_B = 4 \text{ кг},$
 $r_D = 20 \text{ см}, m_D = 7 \text{ кг},$
 $R_D = 29 \text{ см},$
 $i_D = 24 \text{ см}.$

Задача D8.16.

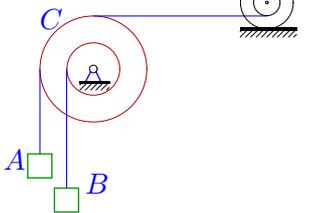
1



$r_c = 20 \text{ см}, m_A = 3 \text{ кг},$
 $R_c = 38 \text{ см}, m_B = 2 \text{ кг},$
 $r_D = 14 \text{ см}, m_D = 7 \text{ кг},$
 $R_D = 23 \text{ см},$
 $i_D = 18 \text{ см}.$

Задача D8.17.

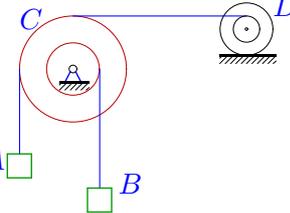
1



$r_c = 18 \text{ см}, m_A = 9 \text{ кг},$
 $R_c = 37 \text{ см}, m_B = 5 \text{ кг},$
 $r_D = 20 \text{ см}, m_D = 8 \text{ кг},$
 $R_D = 30 \text{ см},$
 $i_D = 25 \text{ см}.$

Задача D8.18.

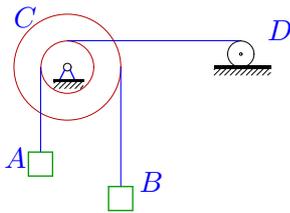
1



$r_c = 16 \text{ см}, m_A = 10 \text{ кг},$
 $R_c = 32 \text{ см}, m_B = 5 \text{ кг},$
 $r_D = 16 \text{ см}, m_D = 5 \text{ кг},$
 $R_D = 24 \text{ см},$
 $i_D = 22 \text{ см}.$

Задача D8.19.

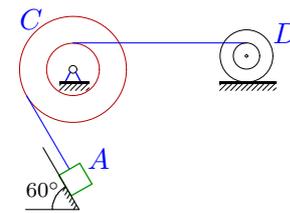
1



$r_c = 20 \text{ см}, m_A = 10 \text{ кг},$
 $R_c = 40 \text{ см}, m_B = 2 \text{ кг},$
 $r_D = 12 \text{ см}, m_D = 9 \text{ кг}.$

Задача D8.20.

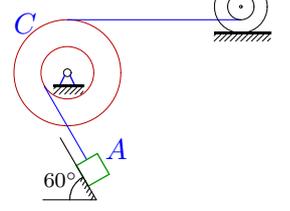
1



$r_c = 14 \text{ см}, f = 0.4,$
 $R_c = 31 \text{ см}, m_A = 1 \text{ кг},$
 $r_D = 19 \text{ см}, m_D = 6 \text{ кг},$
 $R_D = 28 \text{ см},$
 $i_D = 23 \text{ см}.$

Задача D8.21.

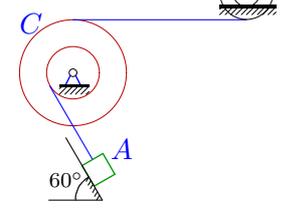
1



$r_c = 18 \text{ см}, f = 0.4,$
 $R_c = 35 \text{ см}, m_A = 9 \text{ кг},$
 $r_D = 14 \text{ см}, m_D = 6 \text{ кг},$
 $R_D = 23 \text{ см},$
 $i_D = 21 \text{ см}.$

Задача D8.22.

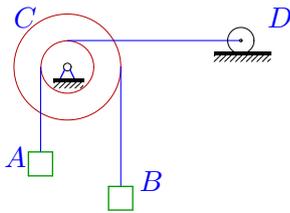
1



$r_c = 20 \text{ см}, f = 0.1,$
 $R_c = 34 \text{ см}, m_A = 8 \text{ кг},$
 $r_D = 18 \text{ см}, m_D = 3 \text{ кг},$
 $R_D = 25 \text{ см},$
 $i_D = 24 \text{ см}.$

Задача D8.23.

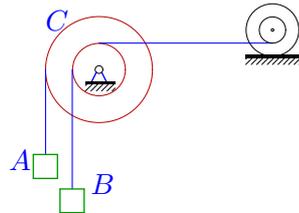
1



$r_c = 12 \text{ см}, m_A = 20 \text{ кг},$
 $R_c = 32 \text{ см}, m_B = 4 \text{ кг},$
 $r_D = 17 \text{ см}, m_D = 9 \text{ кг}.$

Задача D8.24.

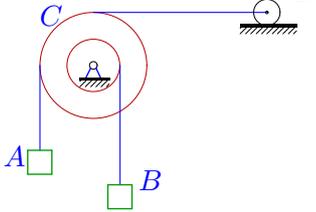
1



$r_c = 12 \text{ см}, m_A = 6 \text{ кг},$
 $R_c = 30 \text{ см}, m_B = 4 \text{ кг},$
 $r_D = 16 \text{ см}, m_D = 7 \text{ кг},$
 $R_D = 25 \text{ см},$
 $i_D = 21 \text{ см}.$

Задача D8.25.

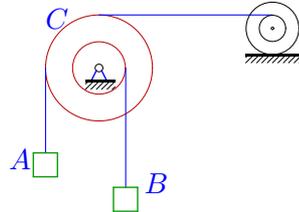
1



$r_c = 14 \text{ см}, m_A = 9 \text{ кг},$
 $R_c = 29 \text{ см}, m_B = 3 \text{ кг},$
 $r_D = 11 \text{ см}, m_D = 4 \text{ кг}.$

Задача D8.26.

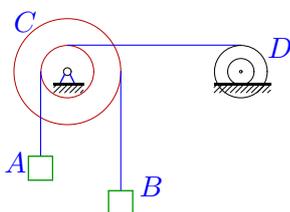
1



$r_c = 22 \text{ см}, m_A = 7 \text{ кг},$
 $R_c = 39 \text{ см}, m_B = 4 \text{ кг},$
 $r_D = 18 \text{ см}, m_D = 6 \text{ кг},$
 $R_D = 27 \text{ см},$
 $i_D = 23 \text{ см}.$

Задача D8.27.

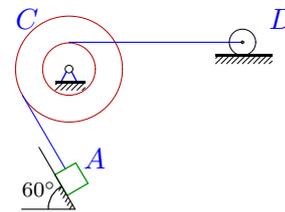
1



$r_c = 12 \text{ см}, m_A = 28 \text{ кг},$
 $R_c = 29 \text{ см}, m_B = 6 \text{ кг},$
 $r_D = 19 \text{ см}, m_D = 6 \text{ кг},$
 $R_D = 28 \text{ см},$
 $i_D = 25 \text{ см}.$

Задача D8.28.

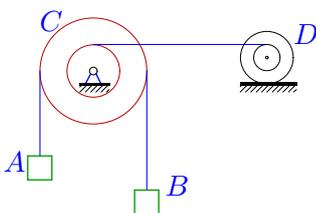
1



$r_c = 16 \text{ см}, f = 0.6, m_A = 6 \text{ кг},$
 $R_c = 35 \text{ см}, m_D = 8 \text{ кг},$
 $r_D = 17 \text{ см},$

Задача D8.29.

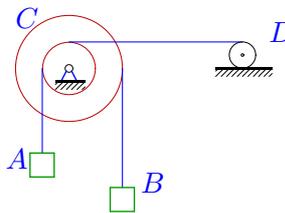
1



$r_c = 20 \text{ см}, m_A = 14 \text{ кг},$
 $R_c = 39 \text{ см}, m_B = 4 \text{ кг},$
 $r_D = 13 \text{ см}, m_D = 8 \text{ кг},$
 $R_D = 23 \text{ см},$
 $i_D = 19 \text{ см}.$

Задача D8.30.

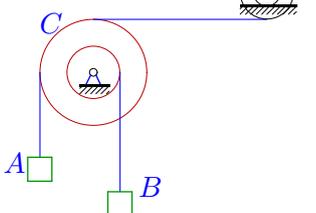
1



$r_c = 16 \text{ см}, m_A = 9 \text{ кг},$
 $R_c = 32 \text{ см}, m_B = 2 \text{ кг},$
 $r_D = 11 \text{ см}, m_D = 5 \text{ кг}.$

Задача D8.31.

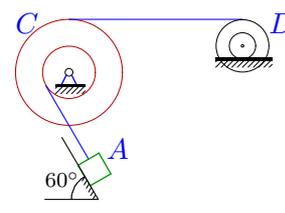
1



$r_c = 20 \text{ см}, m_A = 9 \text{ кг},$
 $R_c = 34 \text{ см}, m_B = 4 \text{ кг},$
 $r_D = 17 \text{ см}, m_D = 3 \text{ кг},$
 $R_D = 24 \text{ см},$
 $i_D = 22 \text{ см}.$

Задача D8.32.

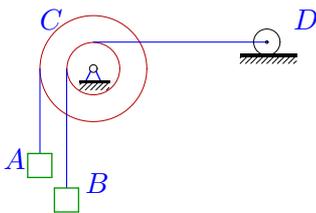
1



$r_c = 20 \text{ см}, f = 0.3, m_A = 6 \text{ кг},$
 $R_c = 36 \text{ см}, m_D = 5 \text{ кг},$
 $r_D = 11 \text{ см},$
 $R_D = 19 \text{ см},$
 $i_D = 17 \text{ см}.$

Задача D8.33.

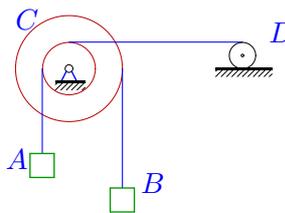
1



$r_c = 16 \text{ см}, m_A = 3 \text{ кг},$
 $R_c = 36 \text{ см}, m_B = 2 \text{ кг},$
 $r_D = 14 \text{ см}, m_D = 9 \text{ кг}.$

Задача D8.34.

1



$r_c = 14 \text{ см}, m_A = 16 \text{ кг},$
 $R_c = 30 \text{ см}, m_B = 4 \text{ кг},$
 $r_D = 18 \text{ см}, m_D = 5 \text{ кг}.$

D8 Ответы.
Теорема об изменении кинетической энергии (3)

04.03.2012

№	μ_B	μ_D	A_A	A_B	v
1	0.947	3.000	117.720	19.090	4.142
2	0.500	13.500	39.240	-9.810	1.808
3	16.971	1.961	235.440	-98.992	2.521
4	13.444	1.500	176.580	-71.940	2.520
5	0.383	0.835	29.430	8.584	4.246
6	0.898	80.100	98.100	-18.587	1.322
7	1.020	2.797	117.720	-22.152	3.476
8	0.000	1.540	16.658	0.000	2.709
9	4.000	54.857	78.480	-39.240	1.083
10	0.000	3.251	64.042	0.000	3.374
11	4.516	10.500	39.240	-20.846	1.391
12	17.901	3.404	245.250	-101.667	2.490
13	5.657	1.500	68.670	-32.997	2.245
14	21.868	4.005	255.060	-112.369	2.346
15	18.063	2.845	137.340	-83.385	1.758
16	0.554	73.716	29.430	-10.326	0.703
17	1.183	122.000	88.290	23.862	1.303
18	1.250	3.313	98.100	-24.525	3.179
19	8.000	3.375	98.100	-39.240	2.347
20	0.000	0.727	6.534	0.000	2.750
21	0.000	271.662	58.803	0.000	0.647
22	0.000	159.245	64.042	0.000	0.875
23	28.444	13.500	196.200	-104.640	1.719
24	0.640	14.740	58.860	15.696	2.641
25	0.699	6.000	88.290	-14.208	3.072
26	1.273	3.727	68.670	-22.135	2.785
27	35.042	2.678	274.680	-142.245	2.008
28	0.000	2.508	33.316	0.000	2.799
29	4.000	1.445	137.340	-39.240	3.176
30	8.000	1.875	88.290	-39.240	2.280
31	1.384	47.327	88.290	-23.082	1.503
32	0.000	7.380	42.145	0.000	2.510
33	0.395	2.667	29.430	8.720	3.548
34	18.367	1.875	156.960	-84.086	2.005

D8 файл o8d1A