

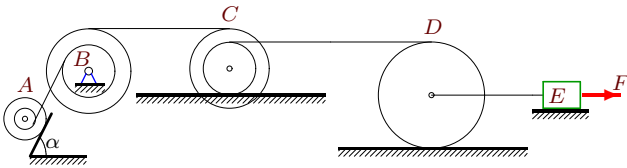
## Кинетическая энергия системы. Приведенные массы

Механическая система, состоящая из пяти тел  $A$ ,  $B$ ,  $C$ ,  $D$  и  $E$ , движется под действием внешних сил. Заданы радиусы цилиндров и блоков. Радиусы инерции даны для блоков, цилиндры считать однородными. Горизонтальный стержень, находящийся в зацеплении с блоками, считать невесомым. Массы даны в килограммах, радиусы — в сантиметрах. Вычислить приведенную массу системы  $\mu$  в формуле  $T = \mu v_A^2/2$ , где  $v_A$  — скорость груза  $A$  (или центра цилиндра  $A$ ).

Кирсанов М.Н. **Решебник. Теоретическая механика**/Под ред. А. И. Кириллова.— М.: ФИЗМАТЛИТ, 2008. — 384 с. (с.257.)

### Задача D33.1.

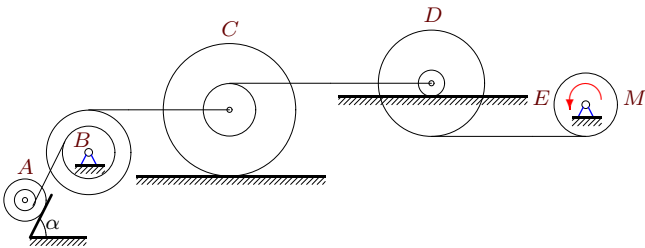
*Аксенов Михаил*



$$\begin{aligned} R_A &= 2, r_A = 1, i_A = 2, \\ R_B &= 4, r_B = 2, i_B = 3, \\ R_C &= 3, r_C = 2, i_C = 2, \\ R_D &= 4, \\ m_A &= 20, m_B = 32, \\ m_C &= 200, m_D = 175, \\ m_E &= 150. \end{aligned}$$

### Задача D33.2.

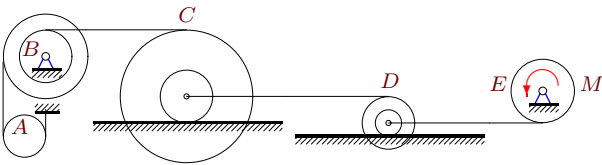
*Барашков Александр*



$$\begin{aligned} R_A &= 2, r_A = 1, i_A = 1, \\ R_B &= 4, r_B = 2, i_B = 2, \\ R_C &= 5, r_C = 2, i_C = 4, \\ R_D &= 4, r_D = 1, i_D = 3, \\ m_A &= 4, m_B = 64, \\ m_C &= 100, m_D = 15, \\ m_E &= 50. \end{aligned}$$

### Задача D33.3.

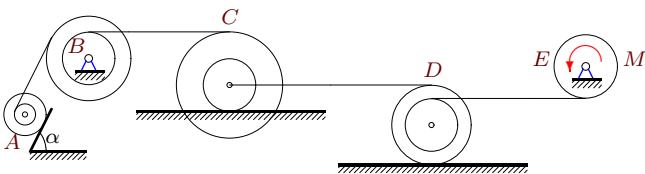
*Батракова Анна*



$$\begin{aligned} R_B &= 4, r_B = 2, i_B = 2, \\ R_C &= 5, r_C = 2, i_C = 4, \\ R_D &= 2, r_D = 1, i_D = 1, \\ m_A &= 6, m_B = 24, \\ m_C &= 294, m_D = 441, \\ m_E &= 882. \end{aligned}$$

### Задача D33.4.

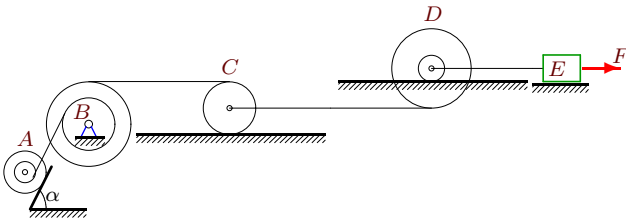
*Белозерова Ирина*



$$\begin{aligned} R_A &= 2, r_A = 1, i_A = 1, \\ R_B &= 3, r_B = 2, i_B = 3, \\ R_C &= 4, r_C = 2, i_C = 3, \\ R_D &= 3, r_D = 2, i_D = 2, \\ m_A &= 4, m_B = 4, \\ m_C &= 144, m_D = 324, \\ m_E &= 648. \end{aligned}$$

**Задача D33.5.**

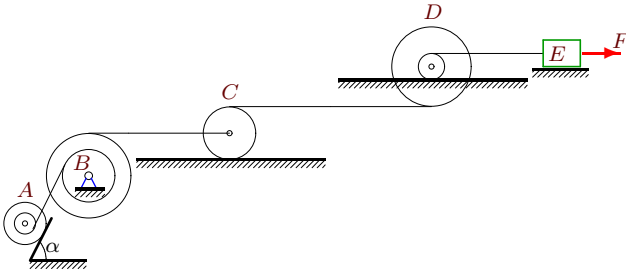
*Бельчук Настя*



$$\begin{aligned}
 R_A &= 2, r_A = 1, i_A = 2, \\
 R_B &= 4, r_B = 2, i_B = 2, \\
 R_C &= 2, \\
 R_D &= 3, r_D = 1, i_D = 2, \\
 m_A &= 12, m_B = 32, \\
 m_C &= 48, m_D = 80, \\
 m_E &= 64.
 \end{aligned}$$

**Задача D33.6.**

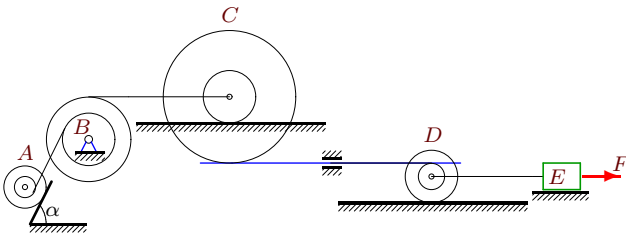
*Гайдукова Мария*



$$\begin{aligned}
 R_A &= 2, r_A = 1, i_A = 2, \\
 R_B &= 4, r_B = 2, i_B = 2, \\
 R_C &= 2, \\
 R_D &= 3, r_D = 1, i_D = 2, \\
 m_A &= 12, m_B = 80, \\
 m_C &= 12, m_D = 5, \\
 m_E &= 4.
 \end{aligned}$$

**Задача D33.7.**

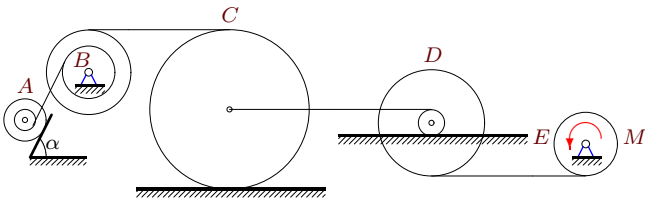
*Демиденко Кирилл*



$$\begin{aligned}
 R_A &= 2, r_A = 1, i_A = 1, \\
 R_B &= 4, r_B = 2, i_B = 3, \\
 R_C &= 5, r_C = 2, i_C = 4, \\
 R_D &= 2, r_D = 1, i_D = 1, \\
 m_A &= 20, m_B = 16, \\
 m_C &= 8, m_D = 28, \\
 m_E &= 6.
 \end{aligned}$$

**Задача D33.8.**

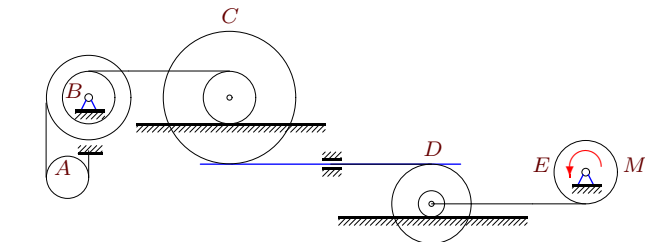
*Демидова Светлана*



$$\begin{aligned}
 R_A &= 2, r_A = 1, i_A = 1, \\
 R_B &= 4, r_B = 2, i_B = 2, \\
 R_C &= 6, \\
 R_D &= 4, r_D = 1, i_D = 3, \\
 m_A &= 4, m_B = 64, \\
 m_C &= 32, m_D = 24, \\
 m_E &= 64.
 \end{aligned}$$

**Задача D33.9.**

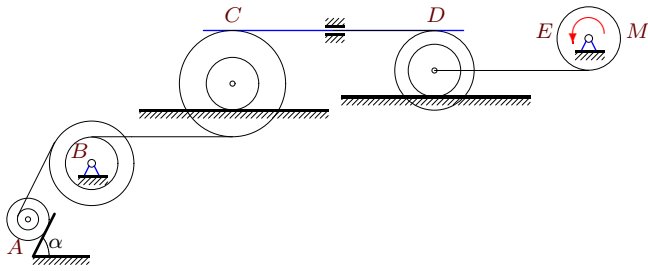
*Доржу Херел*



$$\begin{aligned}
 R_B &= 4, r_B = 2, i_B = 2, \\
 R_C &= 5, r_C = 2, i_C = 4, \\
 R_D &= 3, r_D = 1, i_D = 2, \\
 m_A &= 6, m_B = 20, \\
 m_C &= 24, m_D = 256, \\
 m_E &= 512.
 \end{aligned}$$

**Задача D33.10.**

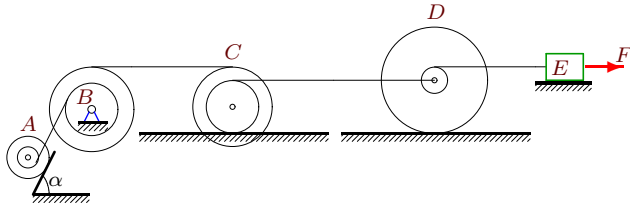
*Дрозд Анастасия*



$$\begin{aligned}
 R_A &= 2, r_A = 1, i_A = 1, \\
 R_B &= 3, r_B = 2, i_B = 2, \\
 R_C &= 4, r_C = 2, i_C = 3, \\
 R_D &= 3, r_D = 2, i_D = 2, \\
 m_A &= 16, m_B = 24, \\
 m_C &= 28, m_D = 150, \\
 m_E &= 250.
 \end{aligned}$$

**Задача D33.11.**

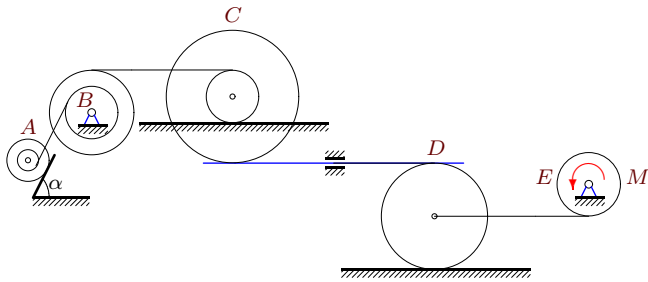
*Завьялов Борис*



$$\begin{aligned}
 R_A &= 2, r_A = 1, i_A = 2, \\
 R_B &= 4, r_B = 2, i_B = 3, \\
 R_C &= 3, r_C = 2, i_C = 2, \\
 R_D &= 4, r_D = 1, i_D = 3, \\
 m_A &= 20, m_B = 64, \\
 m_C &= 200, m_D = 7, \\
 m_E &= 6.
 \end{aligned}$$

**Задача D33.12.**

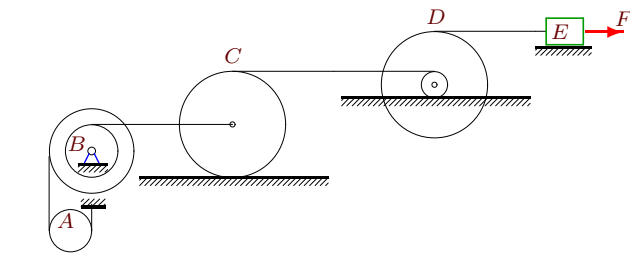
*Климова Елена*



$$\begin{aligned}
 R_A &= 2, r_A = 1, i_A = 1, \\
 R_B &= 4, r_B = 2, i_B = 3, \\
 R_C &= 5, r_C = 2, i_C = 4, \\
 R_D &= 4, \\
 m_A &= 16, m_B = 64, \\
 m_C &= 28, m_D = 128, \\
 m_E &= 128.
 \end{aligned}$$

**Задача D33.13.**

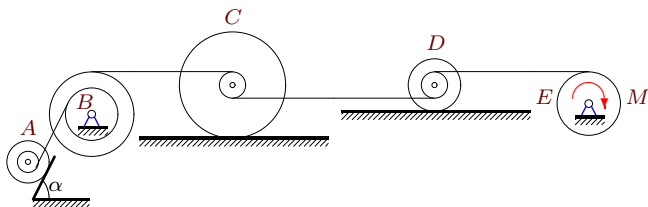
*Коротеев Кирилл*



$$\begin{aligned}
 R_B &= 4, r_B = 2, i_B = 2, \\
 R_C &= 4, \\
 R_D &= 4, r_D = 1, i_D = 3, \\
 m_A &= 6, m_B = 12, \\
 m_C &= 12, m_D = 5, \\
 m_E &= 4.
 \end{aligned}$$

**Задача D33.14.**

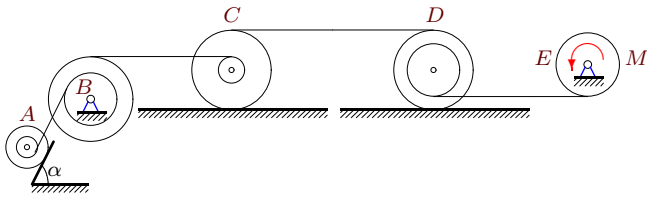
*Лантева Юлия*



$$\begin{aligned}
 R_A &= 2, r_A = 1, i_A = 1, \\
 R_B &= 4, r_B = 2, i_B = 3, \\
 R_C &= 4, r_C = 1, i_C = 3, \\
 R_D &= 2, r_D = 1, i_D = 1, \\
 m_A &= 4, m_B = 96, \\
 m_C &= 4, m_D = 15, \\
 m_E &= 100.
 \end{aligned}$$

**Задача D33.15.**

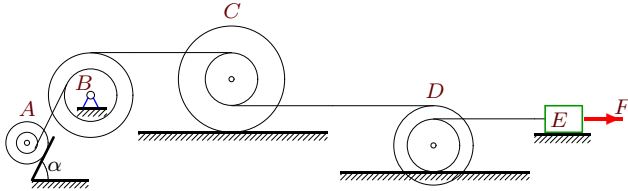
*Мильчакова Мария*



$$\begin{aligned}
 R_A &= 2, r_A = 1, i_A = 1, \\
 R_B &= 4, r_B = 2, i_B = 3, \\
 R_C &= 3, r_C = 1, i_C = 2, \\
 R_D &= 3, r_D = 2, i_D = 2, \\
 m_A &= 4, m_B = 16, \\
 m_C &= 64, m_D = 48, \\
 m_E &= 64.
 \end{aligned}$$

**Задача D33.16.**

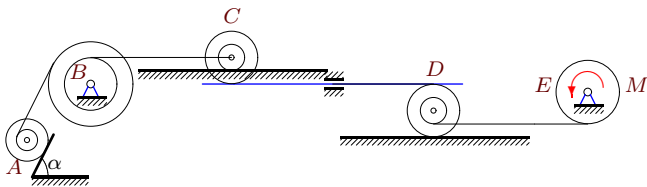
*Можегов Илья*



$$\begin{aligned}
 R_A &= 2, r_A = 1, i_A = 1, \\
 R_B &= 4, r_B = 2, i_B = 2, \\
 R_C &= 4, r_C = 2, i_C = 3, \\
 R_D &= 3, r_D = 2, i_D = 2, \\
 m_A &= 16, m_B = 96, \\
 m_C &= 252, m_D = 225, \\
 m_E &= 225.
 \end{aligned}$$

**Задача D33.17.**

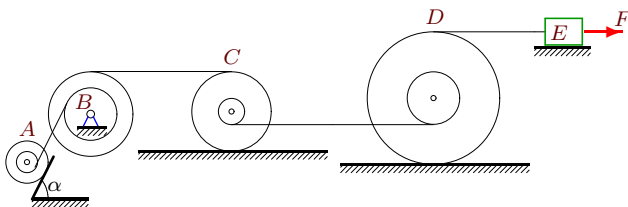
*Моисеенко Глеб*



$$\begin{aligned}
 R_A &= 2, r_A = 1, i_A = 2, \\
 R_B &= 3, r_B = 2, i_B = 3, \\
 R_C &= 2, r_C = 1, i_C = 1, \\
 R_D &= 2, r_D = 1, i_D = 1, \\
 m_A &= 12, m_B = 24, \\
 m_C &= 6, m_D = 80, \\
 m_E &= 128.
 \end{aligned}$$

**Задача D33.18.**

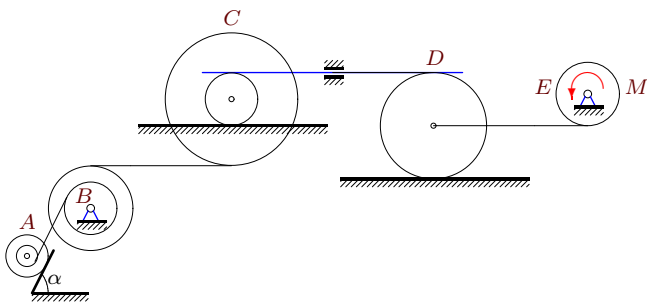
*Николаева Кристина*



$$\begin{aligned}
 R_A &= 2, r_A = 1, i_A = 1, \\
 R_B &= 4, r_B = 2, i_B = 3, \\
 R_C &= 3, r_C = 1, i_C = 2, \\
 R_D &= 5, r_D = 2, i_D = 4, \\
 m_A &= 4, m_B = 48, \\
 m_C &= 144, m_D = 243, \\
 m_E &= 162.
 \end{aligned}$$

**Задача D33.19.**

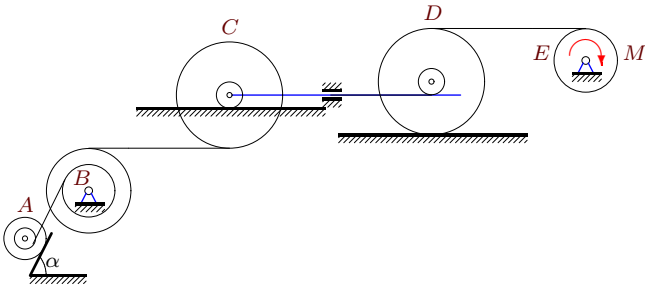
*Никулин Дмитрий*



$$\begin{aligned}
 R_A &= 2, r_A = 1, i_A = 1, \\
 R_B &= 4, r_B = 2, i_B = 3, \\
 R_C &= 5, r_C = 2, i_C = 4, \\
 R_D &= 4, \\
 m_A &= 20, m_B = 80, \\
 m_C &= 72, m_D = 21, \\
 m_E &= 108.
 \end{aligned}$$

**Задача D33.20.**

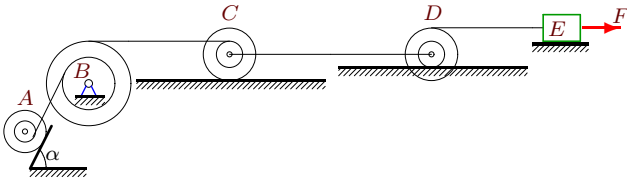
*Ондар Артыш*



$$\begin{aligned}
 R_A &= 2, r_A = 1, i_A = 1, \\
 R_B &= 4, r_B = 2, i_B = 3, \\
 R_C &= 4, r_C = 1, i_C = 3, \\
 R_D &= 4, r_D = 1, i_D = 3, \\
 m_A &= 16, m_B = 48, \\
 m_C &= 63, m_D = 486, \\
 m_E &= 162.
 \end{aligned}$$

**Задача D33.21.**

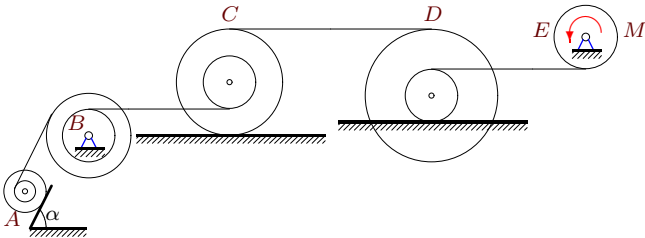
*Посохов Андрей*



$$\begin{aligned}
 R_A &= 2, r_A = 1, i_A = 2, \\
 R_B &= 4, r_B = 2, i_B = 2, \\
 R_C &= 2, r_C = 1, i_C = 1, \\
 R_D &= 2, r_D = 1, i_D = 1, \\
 m_A &= 16, m_B = 16, \\
 m_C &= 63, m_D = 54, \\
 m_E &= 5.
 \end{aligned}$$

**Задача D33.22.**

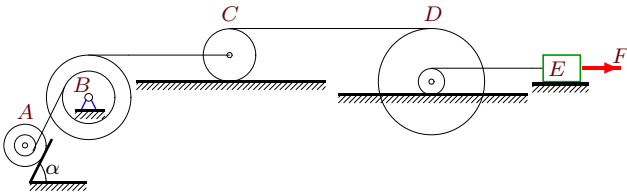
*Савин Алексей*



$$\begin{aligned}
 R_A &= 2, r_A = 1, i_A = 1, \\
 R_B &= 3, r_B = 2, i_B = 2, \\
 R_C &= 4, r_C = 2, i_C = 3, \\
 R_D &= 5, r_D = 2, i_D = 4, \\
 m_A &= 20, m_B = 16, \\
 m_C &= 32, m_D = 49, \\
 m_E &= 98.
 \end{aligned}$$

**Задача D33.23.**

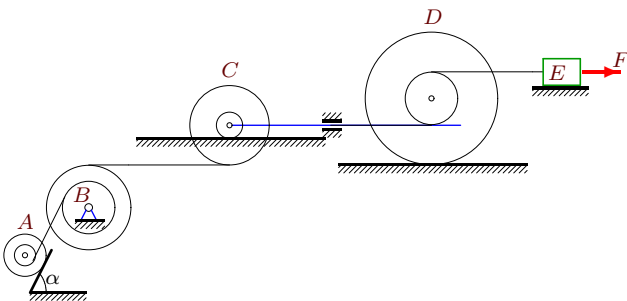
*Сидоренко Екатерина*



$$\begin{aligned}
 R_A &= 2, r_A = 1, i_A = 2, \\
 R_B &= 4, r_B = 2, i_B = 2, \\
 R_C &= 2, \\
 R_D &= 4, r_D = 1, i_D = 3, \\
 m_A &= 8, m_B = 64, \\
 m_C &= 10, m_D = 20, \\
 m_E &= 75.
 \end{aligned}$$

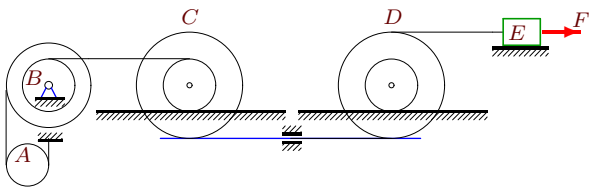
**Задача D33.24.**

*Трапезников Кирилл*



$$\begin{aligned}
 R_A &= 2, r_A = 1, i_A = 1, \\
 R_B &= 4, r_B = 2, i_B = 3, \\
 R_C &= 3, r_C = 1, i_C = 2, \\
 R_D &= 5, r_D = 2, i_D = 4, \\
 m_A &= 4, m_B = 48, \\
 m_C &= 16, m_D = 108, \\
 m_E &= 72.
 \end{aligned}$$

**Задача D33.25.**



*Чалый Дмитрий*

$$R_B = 4, r_B = 2, i_B = 2,$$

$$R_C = 4, r_C = 2, i_C = 3,$$

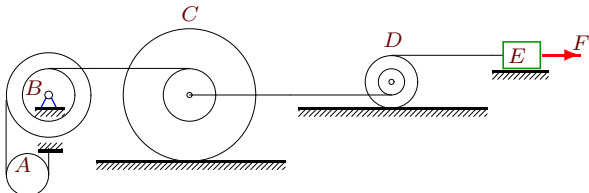
$$R_D = 4, r_D = 2, i_D = 3,$$

$$m_A = 4, m_B = 20,$$

$$m_C = 80, m_D = 64,$$

$$m_E = 12.$$

**Задача D33.26.**



*Шайхлисламов Ильдар*

$$R_B = 4, r_B = 2, i_B = 3,$$

$$R_C = 5, r_C = 2, i_C = 4,$$

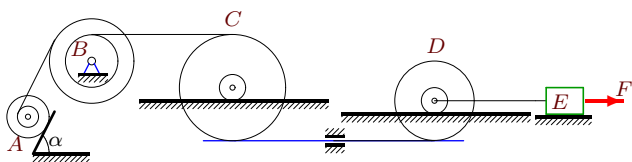
$$R_D = 2, r_D = 1, i_D = 1,$$

$$m_A = 6, m_B = 24,$$

$$m_C = 294, m_D = 49,$$

$$m_E = 49.$$

**Задача D33.27.**



*Мамошин Константин*

$$R_A = 2, r_A = 1, i_A = 1,$$

$$R_B = 3, r_B = 2, i_B = 2,$$

$$R_C = 4, r_C = 1, i_C = 3,$$

$$R_D = 3, r_D = 1, i_D = 2,$$

$$m_A = 4, m_B = 8,$$

$$m_C = 20, m_D = 60,$$

$$m_E = 100.$$

**D33 Ответы.****Кинетическая энергия системы. Приведенные массы** 05.11.2011

№	$\mu_A$	$\mu_B$	$\mu_C$	$\mu_D$	$\mu_E$	$\mu$	
1	40	18	64	42	24	188	Аксенов Михаил
2	5	16	164	294	441	920	Барашков Александр
3	9	24	120	8	4	165	Батракова Анна
4	5	9	52	13	25	104	Белозерова Ирина
5	24	8	18	25	4	79	Бельчук Настя
6	24	20	18	25	16	103	Гайдукова Мария
7	25	9	40	35	6	115	Демиденко Кирилл
8	5	16	12	15	18	66	Демидова Светлана
9	9	20	30	45	9	113	Доржу Херел
10	20	24	91	432	180	747	Дрозд Анастасия
11	40	36	64	7	6	153	Завьялов Борис
12	20	36	35	27	9	127	Климова Елена
13	9	12	18	50	100	189	Коротеев Кирилл
14	5	54	4	27	162	252	Лаптева Юлия
15	5	9	52	39	2	107	Мильчакова Мария
16	20	24	175	8	16	243	Можегов Илья
17	24	54	12	25	4	119	Моисеенко Глеб
18	5	27	52	123	200	407	Николаева Кристина
19	25	45	160	14	24	268	Никулин Дмитрий
20	20	27	70	150	64	331	Ондар Артыш
21	32	4	35	48	20	139	Посохов Андрей
22	25	16	200	320	256	817	Савин Алексей
23	16	16	15	32	48	127	Сидоренко Екатерина
24	5	27	20	123	98	273	Трапезников Кирилл
25	6	20	65	52	27	170	Чалый Дмитрий
26	9	54	246	125	400	834	Шайхлисламов Ильдар
27	5	8	8	27	9	57	Мамошин Константин

D33 файл o33ddsC