# Кинетическая энергия системы. Приведенные массы

Механическая система, состоящая из пяти тел 1, 2, 3, 4 и 5, движется под действием внешних сил. Заданы радиусы цилиндров и блоков. Радиусы инерции $\rho$ 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 $T = \mu v_1^2/2$, где $v_1$ — скорость груза 1 (или центра цилиндра 1).

*Кирсанов М.Н.* Задачи по теоретической механике с решениями в **Maple** 11. – М.: ФИЗМАТЛИТ, 2010. — 264 с. (с.111)
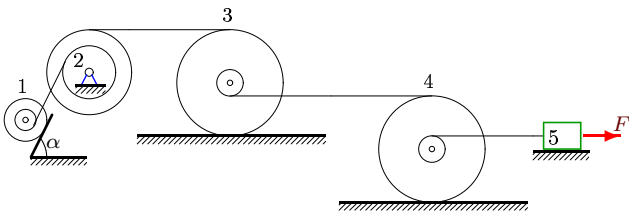
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### Задача D-33.1.

<div align="right">*Акалаев Эмран*</div>
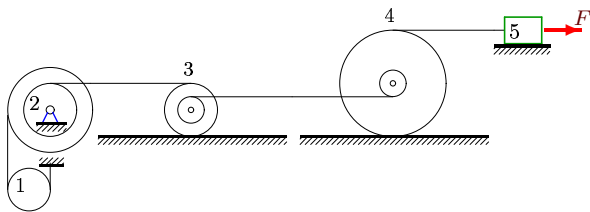


$R_2 = 4$, $r_2 = 2$, $\rho_2 = 3$,
$R_3 = 2$, $r_3 = 1$, $\rho_3 = 1$,
$R_4 = 4$, $r_4 = 1$, $\rho_4 = 3$,
$m_1 = 6$, $m_2 = 16$,
$m_3 = 96$, $m_4 = 80$,
$m_5 = 4$.

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### Задача D-33.2.

<div align="right">*Березин Никита*</div>



$R_1 = 2$, $r_1 = 1$, $\rho_1 = 1$,
$R_2 = 4$, $r_2 = 2$, $\rho_2 = 3$,
$R_3 = 4$, $r_3 = 1$, $\rho_3 = 3$,
$R_4 = 4$, $r_4 = 1$, $\rho_4 = 3$,
$m_1 = 12$, $m_2 = 64$,
$m_3 = 384$, $m_4 = 4096$,
$m_5 = 4096$.

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### Задача D-33.3.

<div align="right">*Бровко Татьяна*</div>
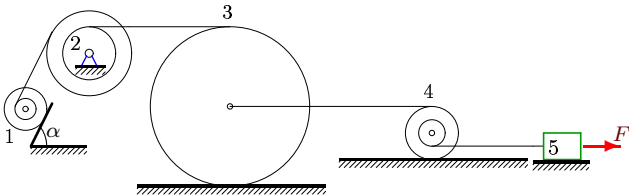


$R_1 = 2$, $r_1 = 1$, $\rho_1 = 1$,
$R_2 = 3$, $r_2 = 2$, $\rho_2 = 3$,
$R_3 = 6$,
$R_4 = 2$, $r_4 = 1$, $\rho_4 = 1$,
$m_1 = 4$, $m_2 = 24$,
$m_3 = 32$, $m_4 = 192$,
$m_5 = 128$.

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### Задача D-33.4.

<div align="right">*Бутняков Марк*</div>
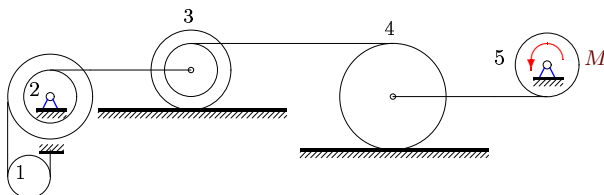


$R_2 = 4$, $r_2 = 2$, $\rho_2 = 3$,
$R_3 = 3$, $r_3 = 2$, $\rho_3 = 2$,
$R_4 = 4$,
$m_1 = 2$, $m_2 = 20$,
$m_3 = 36$, $m_4 = 72$,
$m_5 = 144$.

## Задача D-33.5.

Васильева Наталья
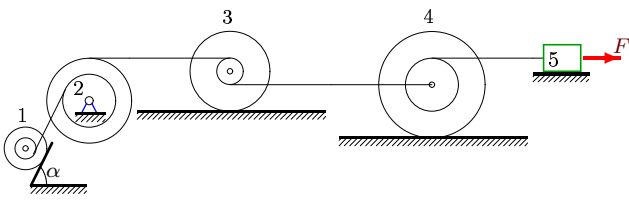


$R_1 = 2$, $r_1 = 1$, $\rho_1 = 1$,
$R_2 = 4$, $r_2 = 2$, $\rho_2 = 3$,
$R_3 = 3$, $r_3 = 1$, $\rho_3 = 2$,
$R_4 = 4$, $r_4 = 2$, $\rho_4 = 3$,
$m_1 = 12$, $m_2 = 32$,
$m_3 = 96$, $m_4 = 320$,
$m_5 = 64$.

## Задача D-33.6.

Величко Валерия
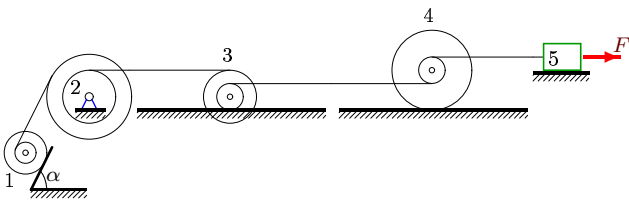


$R_1 = 2$, $r_1 = 1$, $\rho_1 = 2$,
$R_2 = 3$, $r_2 = 2$, $\rho_2 = 3$,
$R_3 = 2$, $r_3 = 1$, $\rho_3 = 1$,
$R_4 = 3$, $r_4 = 1$, $\rho_4 = 2$,
$m_1 = 4$, $m_2 = 20$,
$m_3 = 36$, $m_4 = 27$,
$m_5 = 18$.

## Задача D-33.7.

Глухов Олег
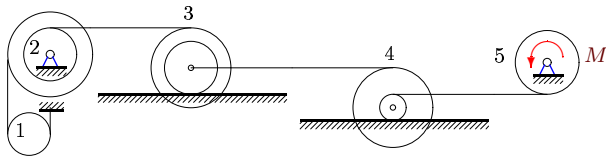


$R_2 = 4$, $r_2 = 2$, $\rho_2 = 2$,
$R_3 = 3$, $r_3 = 2$, $\rho_3 = 2$,
$R_4 = 3$, $r_4 = 1$, $\rho_4 = 2$,
$m_1 = 2$, $m_2 = 8$,
$m_3 = 100$, $m_4 = 60$,
$m_5 = 100$.

## Задача D-33.8.

Гущин Алексей
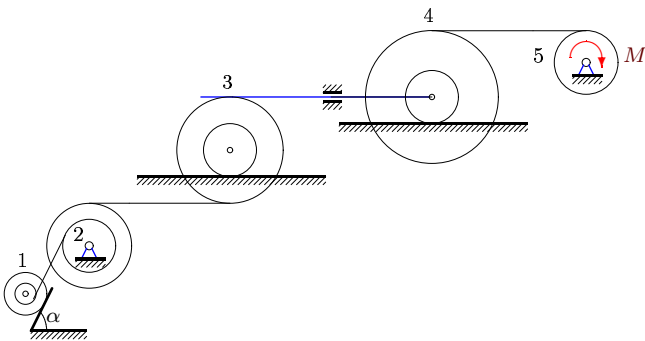


$R_1 = 2$, $r_1 = 1$, $\rho_1 = 1$,
$R_2 = 4$, $r_2 = 2$, $\rho_2 = 2$,
$R_3 = 4$, $r_3 = 2$, $\rho_3 = 3$,
$R_4 = 5$, $r_4 = 2$, $\rho_4 = 4$,
$m_1 = 8$, $m_2 = 64$,
$m_3 = 20$, $m_4 = 4$,
$m_5 = 8$.

## Задача D-33.9.

Зеленецкий Кирилл
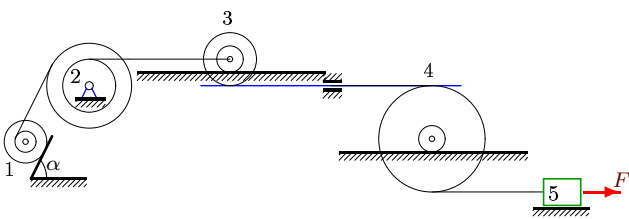


$R_1 = 2$, $r_1 = 1$, $\rho_1 = 2$,
$R_2 = 3$, $r_2 = 2$, $\rho_2 = 2$,
$R_3 = 2$, $r_3 = 1$, $\rho_3 = 1$,
$R_4 = 4$, $r_4 = 1$, $\rho_4 = 3$,
$m_1 = 4$, $m_2 = 12$,
$m_3 = 4$, $m_4 = 15$,
$m_5 = 50$.

## Задача D-33.10.
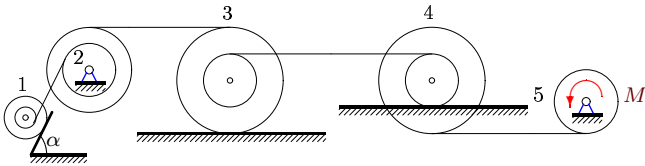
Зинин Иван
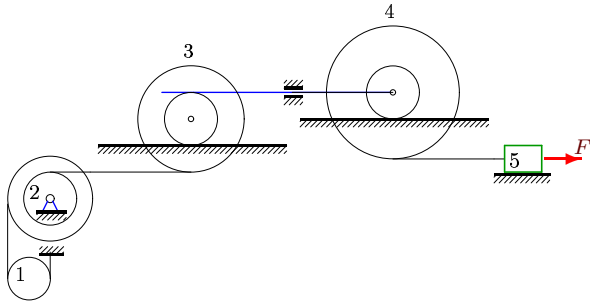
$R_2 = 4, r_2 = 2, \rho_2 = 2,$
$R_3 = 4, r_3 = 2, \rho_3 = 3,$
$R_4 = 5, r_4 = 2, \rho_4 = 4,$
$m_1 = 2, m_2 = 12,$
$m_3 = 16, m_4 = 3,$
$m_5 = 2.$

## Задача D-33.11.
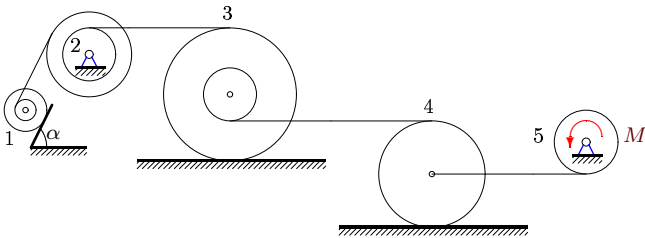
Иванова Аина

$R_1 = 2, r_1 = 1, \rho_1 = 1,$
$R_2 = 4, r_2 = 2, \rho_2 = 2,$
$R_3 = 4, r_3 = 2, \rho_3 = 3,$
$R_4 = 4, r_4 = 2, \rho_4 = 3,$
$m_1 = 8, m_2 = 32,$
$m_3 = 320, m_4 = 256,$
$m_5 = 128.$

## Задача D-33.12.
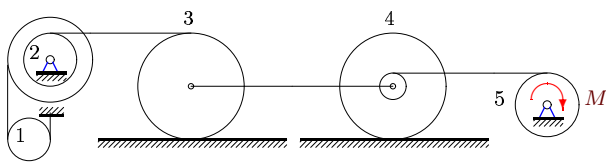
Кухарук Екатерина

$R_1 = 2, r_1 = 1, \rho_1 = 1,$
$R_2 = 3, r_2 = 2, \rho_2 = 3,$
$R_3 = 5, r_3 = 2, \rho_3 = 4,$
$R_4 = 4,$
$m_1 = 4, m_2 = 12,$
$m_3 = 100, m_4 = 800,$
$m_5 = 800.$

## Задача D-33.13.

Лобус Александр

$R_2 = 4, r_2 = 2, \rho_2 = 3,$
$R_3 = 4,$
$R_4 = 4, r_4 = 1, \rho_4 = 3,$
$m_1 = 2, m_2 = 12,$
$m_3 = 32, m_4 = 192,$
$m_5 = 128.$

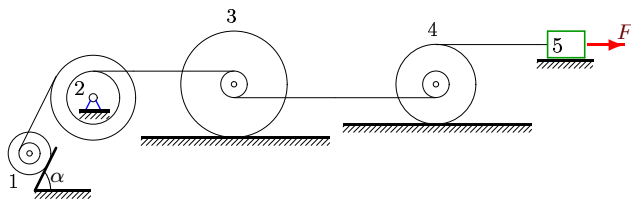## Задача D-33.14.

Лутченкова Екатерина
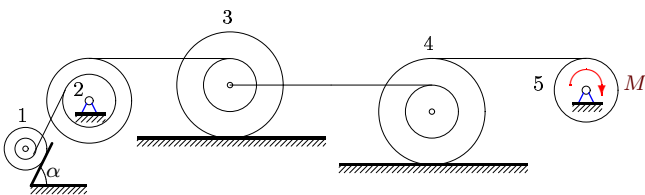
$R_1 = 2, r_1 = 1, \rho_1 = 1,$
$R_2 = 4, r_2 = 2, \rho_2 = 3,$
$R_3 = 4, r_3 = 2, \rho_3 = 3,$
$R_4 = 4, r_4 = 2, \rho_4 = 3,$
$m_1 = 4, m_2 = 80,$
$m_3 = 144, m_4 = 243,$
$m_5 = 162.$

## Задача D-33.15.

Лысенко Наталия



$R_1 = 2$, $r_1 = 1$, $\rho_1 = 1$,
$R_2 = 3$, $r_2 = 2$, $\rho_2 = 3$,
$R_3 = 4$, $r_3 = 1$, $\rho_3 = 3$,
$R_4 = 3$, $r_4 = 1$, $\rho_4 = 2$,
$m_1 = 20$, $m_2 = 8$,
$m_3 = 8$, $m_4 = 100$,
$m_5 = 150$.
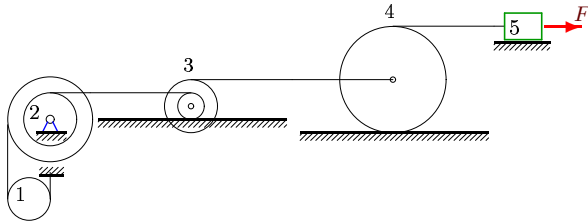
## Задача D-33.16.

Маругина Ксения



$R_2 = 4$, $r_2 = 2$, $\rho_2 = 3$,
$R_3 = 2$, $r_3 = 1$, $\rho_3 = 1$,
$R_4 = 4$,
$m_1 = 2$, $m_2 = 8$,
$m_3 = 8$, $m_4 = 24$,
$m_5 = 2$.
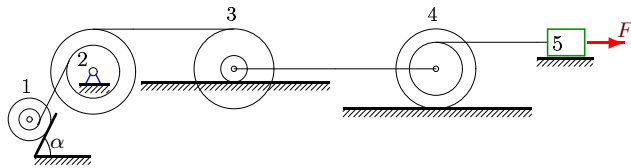
## Задача D-33.17.

Мишонкова Ксения



$R_1 = 2$, $r_1 = 1$, $\rho_1 = 1$,
$R_2 = 4$, $r_2 = 2$, $\rho_2 = 3$,
$R_3 = 3$, $r_3 = 1$, $\rho_3 = 2$,
$R_4 = 3$, $r_4 = 2$, $\rho_4 = 2$,
$m_1 = 4$, $m_2 = 16$,
$m_3 = 64$, $m_4 = 144$,
$m_5 = 144$.
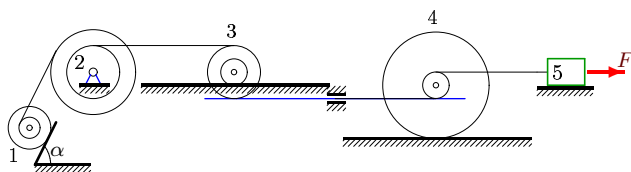
## Задача D-33.18.

Новиков Семён



$R_1 = 2$, $r_1 = 1$, $\rho_1 = 2$,
$R_2 = 3$, $r_2 = 2$, $\rho_2 = 3$,
$R_3 = 2$, $r_3 = 1$, $\rho_3 = 1$,
$R_4 = 4$, $r_4 = 1$, $\rho_4 = 3$,
$m_1 = 4$, $m_2 = 12$,
$m_3 = 36$, $m_4 = 243$,
$m_5 = 162$.

## Задача D-33.19.

Озик Дарья
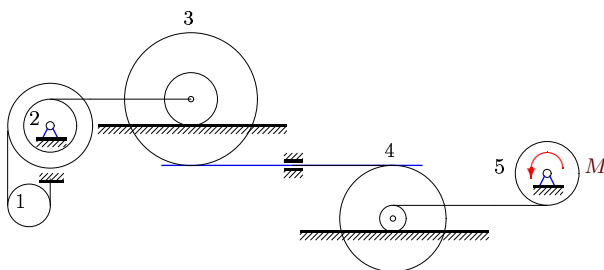


$R_2 = 4$, $r_2 = 2$, $\rho_2 = 2$,
$R_3 = 5$, $r_3 = 2$, $\rho_3 = 4$,
$R_4 = 4$, $r_4 = 1$, $\rho_4 = 3$,
$m_1 = 2$, $m_2 = 12$,
$m_3 = 4$, $m_4 = 30$,
$m_5 = 100$.

**Задача D-33.20.** *Особов Алексей*
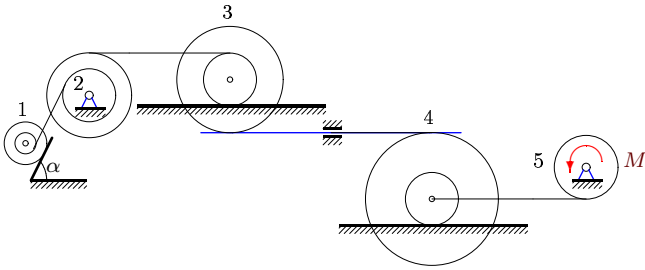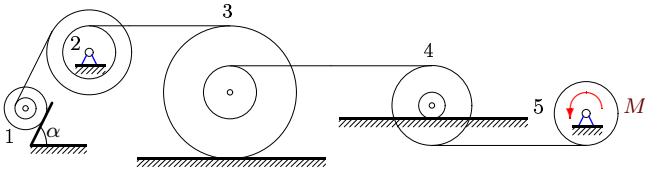
$R_1 = 2, r_1 = 1, \rho_1 = 1,$
$R_2 = 4, r_2 = 2, \rho_2 = 2,$
$R_3 = 4, r_3 = 2, \rho_3 = 3,$
$R_4 = 5, r_4 = 2, \rho_4 = 4,$
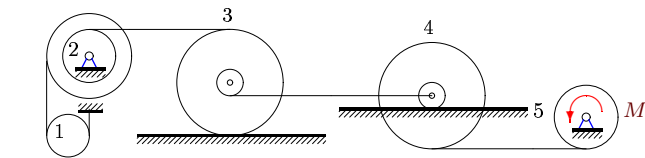$m_1 = 4, m_2 = 48,$
$m_3 = 64, m_4 = 147,$
$m_5 = 196.$

**Задача D-33.21.** *Панченков Роман*

$R_1 = 2, r_1 = 1, \rho_1 = 1,$
$R_2 = 3, r_2 = 2, \rho_2 = 2,$
$R_3 = 5, r_3 = 2, \rho_3 = 4,$
$R_4 = 3, r_4 = 1, \rho_4 = 2,$
$m_1 = 4, m_2 = 20,$
$m_3 = 100, m_4 = 320,$
$m_5 = 800.$

**Задача D-33.22.** *Писоцкая Наталья*
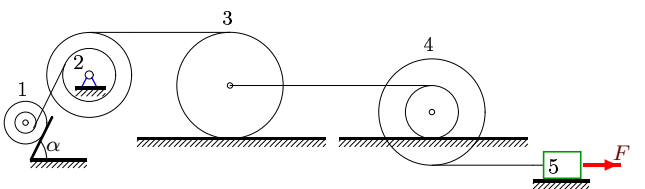
$R_2 = 4, r_2 = 2, \rho_2 = 2,$
$R_3 = 4, r_3 = 1, \rho_3 = 3,$
$R_4 = 4, r_4 = 1, \rho_4 = 3,$
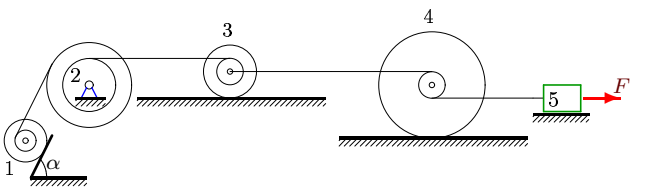$m_1 = 2, m_2 = 16,$
$m_3 = 256, m_4 = 96,$
$m_5 = 128.$

**Задача D-33.23.** *Самсонов Евгений*

$R_1 = 2, r_1 = 1, \rho_1 = 1,$
$R_2 = 4, r_2 = 2, \rho_2 = 2,$
$R_3 = 4,$
$R_4 = 4, r_4 = 2, \rho_4 = 3,$
$m_1 = 4, m_2 = 80,$
$m_3 = 32, m_4 = 192,$
$m_5 = 32.$

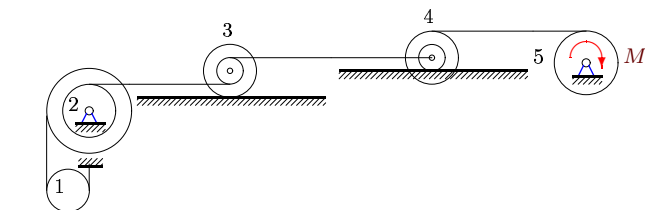**Задача D-33.24.** *Скворцова Светлана*

$R_1 = 2, r_1 = 1, \rho_1 = 2,$
$R_2 = 3, r_2 = 2, \rho_2 = 3,$
$R_3 = 2, r_3 = 1, \rho_3 = 1,$
$R_4 = 4, r_4 = 1, \rho_4 = 3,$
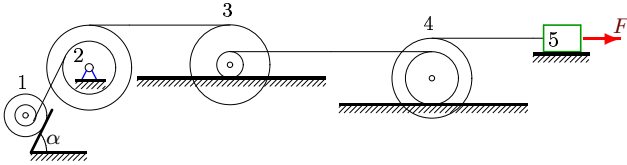$m_1 = 4, m_2 = 16,$
$m_3 = 36, m_4 = 27,$
$m_5 = 50.$

**Задача D-33.25.** *Стамболян Станислав*

$R_2 = 4, r_2 = 2, \rho_2 = 2,$
$R_3 = 2, r_3 = 1, \rho_3 = 1,$
$R_4 = 2, r_4 = 1, \rho_4 = 1,$
$m_1 = 2, m_2 = 24,$
$m_3 = 4, m_4 = 3,$
$m_5 = 4.$

## Задача D-33.26.

*Ткачук Георгий*



$R_1 = 2$, $r_1 = 1$, $\rho_1 = 1$,
$R_2 = 4$, $r_2 = 2$, $\rho_2 = 2$,
$R_3 = 3$, $r_3 = 1$, $\rho_3 = 2$,
$R_4 = 3$, $r_4 = 2$, $\rho_4 = 2$,
$m_1 = 4$, $m_2 = 16$,
$m_3 = 64$, $m_4 = 24$,
$m_5 = 128$.

## Задача D-33.27.

*Трифонов Илья*
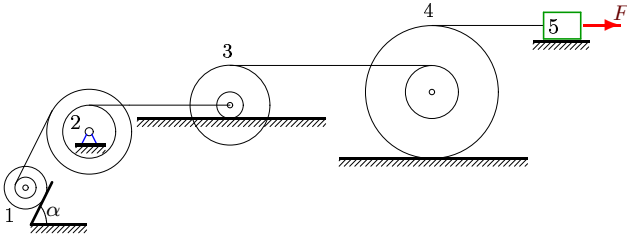


$R_1 = 2$, $r_1 = 1$, $\rho_1 = 1$,
$R_2 = 3$, $r_2 = 2$, $\rho_2 = 3$,
$R_3 = 3$, $r_3 = 1$, $\rho_3 = 2$,
$R_4 = 5$, $r_4 = 2$, $\rho_4 = 4$,
$m_1 = 4$, $m_2 = 12$,
$m_3 = 4$, $m_4 = 49$,
$m_5 = 49$.

## Задача D-33.28.

*Щербакова Анастасия*
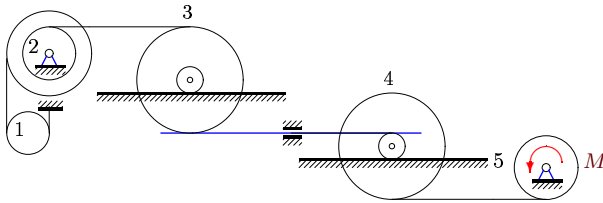


$R_2 = 4$, $r_2 = 2$, $\rho_2 = 2$,
$R_3 = 4$, $r_3 = 1$, $\rho_3 = 3$,
$R_4 = 4$, $r_4 = 1$, $\rho_4 = 3$,
$m_1 = 2$, $m_2 = 16$,
$m_3 = 20$, $m_4 = 30$,
$m_5 = 200$.
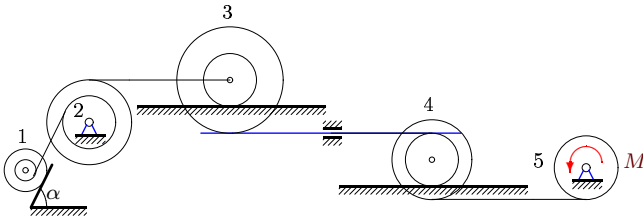
## Задача D-33.29.



$R_1 = 2$, $r_1 = 1$, $\rho_1 = 1$,
$R_2 = 4$, $r_2 = 2$, $\rho_2 = 2$,
$R_3 = 4$, $r_3 = 2$, $\rho_3 = 3$,
$R_4 = 3$, $r_4 = 2$, $\rho_4 = 2$,
$m_1 = 4$, $m_2 = 96$,
$m_3 = 16$, $m_4 = 6$,
$m_5 = 64$.

## Задача D-33.30.
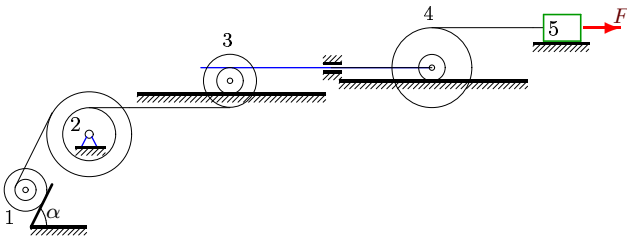


$R_1 = 2$, $r_1 = 1$, $\rho_1 = 2$,
$R_2 = 3$, $r_2 = 2$, $\rho_2 = 2$,
$R_3 = 2$, $r_3 = 1$, $\rho_3 = 1$,
$R_4 = 3$, $r_4 = 1$, $\rho_4 = 2$,
$m_1 = 4$, $m_2 = 8$,
$m_3 = 4$, $m_4 = 3$,
$m_5 = 2$.