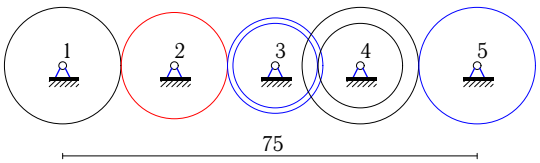
# Передача вращений

Оси колес фрикционной передачи расположены на одной прямой. Даны радиусы колес 2-4, расстояние между крайними осями (см) и угловый скорости ведущего колеса 1 и ведомого 5 ($с^{-1}$). Найти радиусы колес 1 и 5.

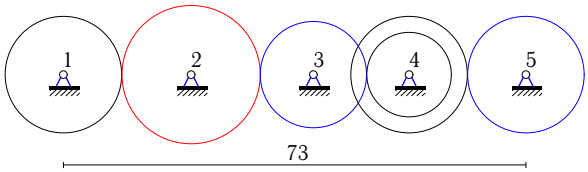
*Кирсанов М.Н.* **Решебник. Теоретическая механика**/Под ред. А. И. Кириллова.– М.: ФИЗМАТЛИТ, 2008. — 384 с. (с.149.)

### Задача К-6.1.



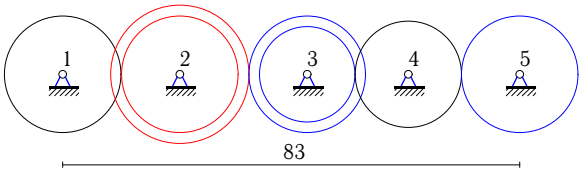

$r_2 = 10$, $r_3 = 8$, $R_3 = 9$, $r_4 = 8$, $R_4 = 11$,
$\omega_1 = 72$, $\omega_5 = 121$.

### Задача К-6.2.



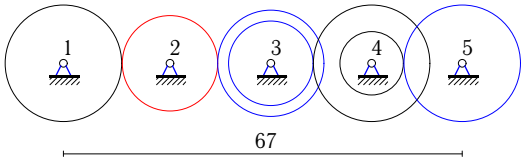

$R_2 = 13$, $R_3 = 10$, $r_4 = 8$, $R_4 = 11$,
$\omega_1 = 104$, $\omega_5 = 143$.

### Задача К-6.3.



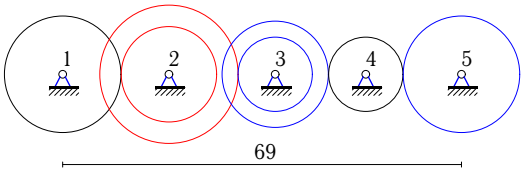

$r_2 = 11$, $R_2 = 13$, $r_3 = 9$, $R_3 = 11$, $R_4 = 10$,
$\omega_1 = 1210$, $\omega_5 = 1053$.

### Задача К-6.4.



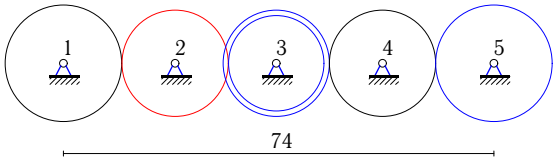

$r_2 = 9$, $r_3 = 8$, $R_3 = 10$, $r_4 = 6$, $R_4 = 11$,
$\omega_1 = 275$, $\omega_5 = 48$.

### Задача К-6.5.



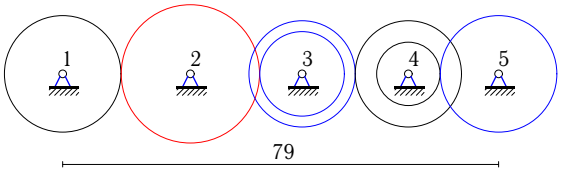

$r_2 = 9$, $R_2 = 13$, $r_3 = 7$, $R_3 = 10$, $r_4 = 7$,
$\omega_1 = 81$, $\omega_5 = 130$.

### Задача К-6.6.



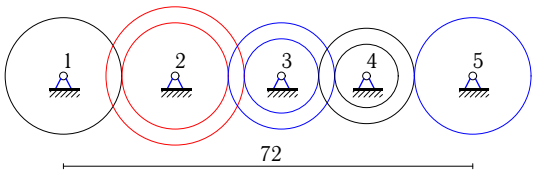

$r_2 = 10$, $r_3 = 9$, $R_3 = 10$, $R_4 = 10$,
$\omega_1 = 36$, $\omega_5 = 35$.

### Задача К-6.7.



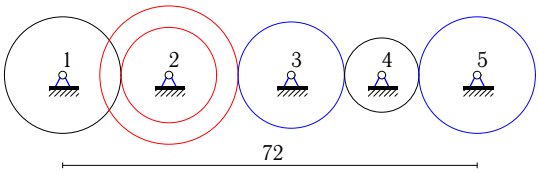

$R_2 = 13$, $r_3 = 8$, $R_3 = 10$, $r_4 = 6$, $R_4 = 10$,
$\omega_1 = 78$, $\omega_5 = 65$.

### Задача К-6.8.



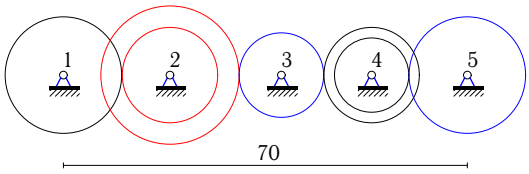

$r_2 = 10$, $R_2 = 13$, $r_3 = 7$, $R_3 = 10$, $r_4 = 6$,
$R_4 = 9$,
$\omega_1 = 28$, $\omega_5 = 143$.

## Задача К-6.9.



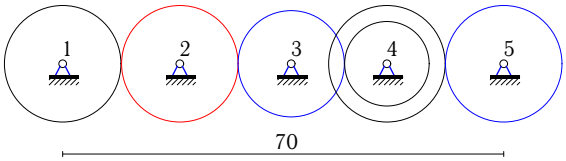

$r_2 = 9,\ R_2 = 13,\ R_3 = 10,\ r_4 = 7,$
$\omega_1 = 45,\ \omega_5 = 143.$

## Задача К-6.10.



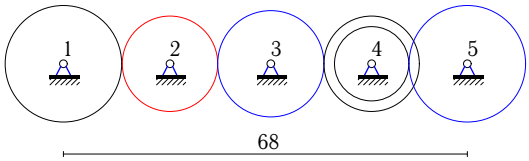

$r_2 = 9,\ R_2 = 13,\ r_3 = 8,\ r_4 = 7,\ R_4 = 9,$
$\omega_1 = 81,\ \omega_5 = 91.$

## Задача К-6.11.



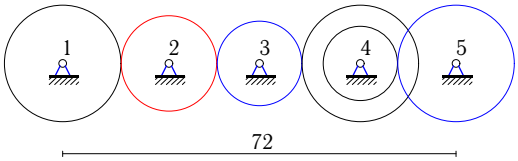

$r_2 = 11,\ R_3 = 10,\ r_4 = 8,\ R_4 = 11,$
$\omega_1 = 4,\ \omega_5 = 11.$

## Задача К-6.12.



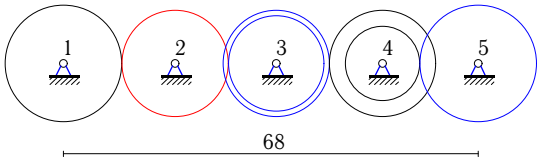

$r_2 = 9,\ R_3 = 10,\ r_4 = 7,\ R_4 = 9,$
$\omega_1 = 45,\ \omega_5 = 14.$

## Задача К-6.13.



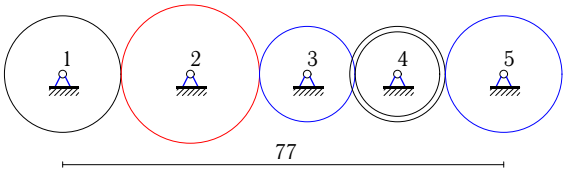

$r_2 = 9,\ r_3 = 8,\ r_4 = 7,\ R_4 = 11,$
$\omega_1 = 9,\ \omega_5 = 7.$

## Задача К-6.14.



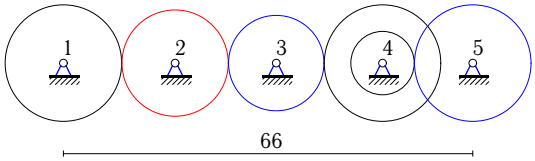

$r_2 = 10,\ r_3 = 9,\ R_3 = 10,\ r_4 = 7,\ R_4 = 10,$
$\omega_1 = 9,\ \omega_5 = 5.$

## Задача К-6.15.



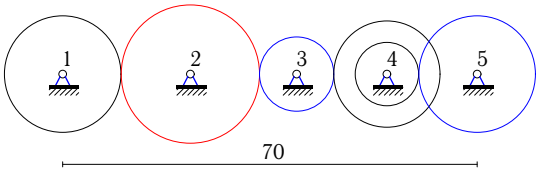

$R_2 = 13,\ r_3 = 9,\ r_4 = 8,\ R_4 = 9,$
$\omega_1 = 520,\ \omega_5 = 1287.$

## Задача К-6.16.



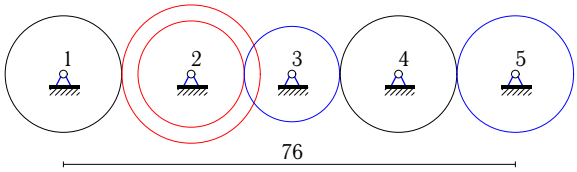

$r_2 = 10,\ R_3 = 9,\ r_4 = 6,\ R_4 = 11,$
$\omega_1 = 11,\ \omega_5 = 16.$

## Задача К-6.17.




$R_2 = 13,\ r_3 = 7,\ r_4 = 6,\ R_4 = 10,$
$\omega_1 = 39,\ \omega_5 = 13.$

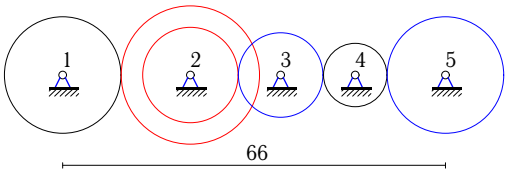
## Задача К-6.18.




$r_2 = 10,\ R_2 = 13,\ R_3 = 9,\ R_4 = 11,$
$\omega_1 = 39,\ \omega_5 = 35.$

## Задача К-6.19.

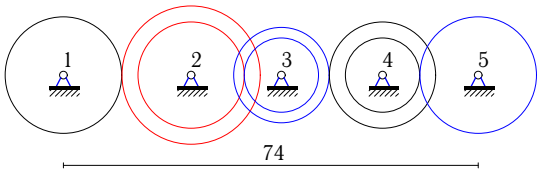
4




$r_2 = 9$, $R_2 = 13$, $r_3 = 8$, $r_4 = 6$,
$\omega_1 = 91$, $\omega_5 = 81$.

## Задача К-6.20.

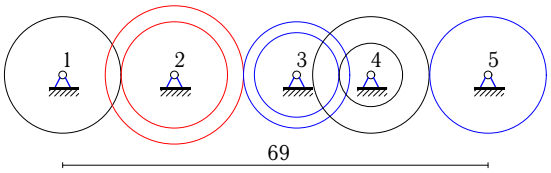
4




$r_2 = 10$, $R_2 = 13$, $r_3 = 7$, $R_3 = 9$, $r_4 = 7$, $R_4 = 10$,
$\omega_1 = 13$, $\omega_5 = 18$.

## Задача К-6.21.

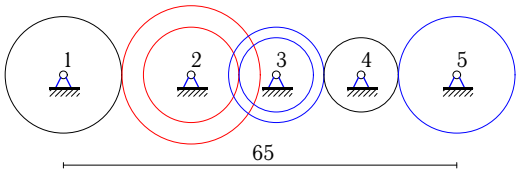
4




$r_2 = 10$, $R_2 = 13$, $r_3 = 8$, $R_3 = 10$, $r_4 = 6$, $R_4 = 11$,
$\omega_1 = 225$, $\omega_5 = 1144$.

## Задача К-6.22.

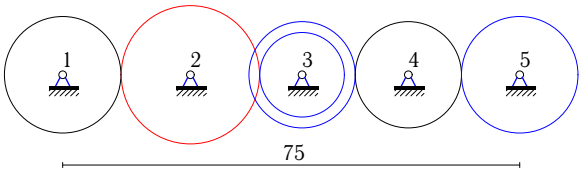
4




$r_2 = 9$, $R_2 = 13$, $r_3 = 7$, $R_3 = 9$, $r_4 = 7$,
$\omega_1 = 364$, $\omega_5 = 729$.

## Задача К-6.23.

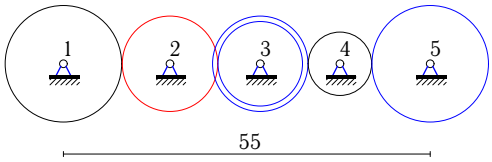
4




$R_2 = 13$, $r_3 = 8$, $R_3 = 10$, $R_4 = 10$,
$\omega_1 = 208$, $\omega_5 = 455$.

## Задача К-6.24.

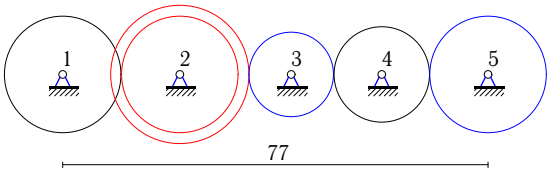
4




$r_2 = 9$, $r_3 = 8$, $R_3 = 9$, $r_4 = 6$,
$\omega_1 = 8$, $\omega_5 = 15$.

## Задача К-6.25.

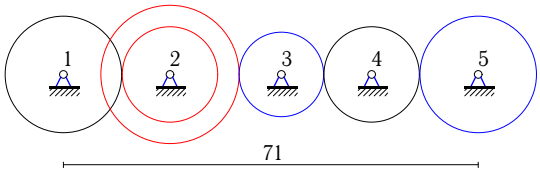
4




$r_2 = 11$, $R_2 = 13$, $r_3 = 8$, $R_4 = 9$,
$\omega_1 = 8$, $\omega_5 = 13$.

## Задача К-6.26.

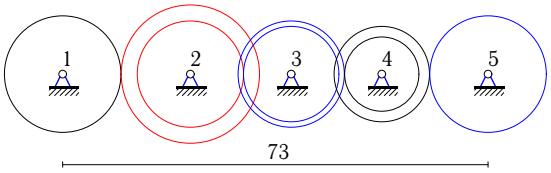
4




$r_2 = 9$, $R_2 = 13$, $r_3 = 8$, $R_4 = 9$,
$\omega_1 = 36$, $\omega_5 = 143$.

## Задача К-6.27.

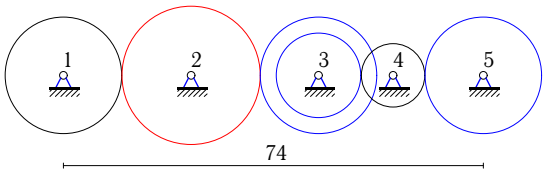
4




$r_2 = 10$, $R_2 = 13$, $r_3 = 9$, $R_3 = 10$, $r_4 = 7$, $R_4 = 9$,
$\omega_1 = 637$, $\omega_5 = 800$.

## Задача К-6.28.

4




$R_2 = 13$, $r_3 = 8$, $R_3 = 11$, $r_4 = 6$,
$\omega_1 = 1001$, $\omega_5 = 1040$.

**К-6** **Ответы.**
**Передача вращений** 21.04.2013

| № | $\omega_2$ | $\omega_3$ | $\omega_4$ | $R_1$ | $R_5$ |
|---|---|---|---|---|---|
| 1 | 79.200 | 88.000 | 88.000 | 11 | 8 |
| 2 | 32.000 | 41.600 | 52.000 | 4 | 4 |
| 3 | 990.000 | 1170.000 | 1053.000 | 9 | 10 |
| 4 | 122.222 | 110.000 | 80.000 | 4 | 10 |
| 5 | 63.000 | 117.000 | 167.143 | 7 | 9 |
| 6 | 25.200 | 28.000 | 28.000 | 7 | 8 |
| 7 | 60.000 | 97.500 | 97.500 | 10 | 9 |
| 8 | 30.800 | 57.200 | 95.333 | 11 | 6 |
| 9 | 55.000 | 71.500 | 102.143 | 11 | 5 |
| 10 | 72.000 | 117.000 | 104.000 | 8 | 8 |
| 11 | 2.182 | 2.400 | 3.000 | 6 | 3 |
| 12 | 20.000 | 18.000 | 20.000 | 4 | 10 |
| 13 | 11.000 | 12.375 | 9.000 | 11 | 9 |
| 14 | 4.500 | 5.000 | 5.000 | 5 | 7 |
| 15 | 440.000 | 635.556 | 715.000 | 11 | 5 |
| 16 | 8.800 | 9.778 | 8.000 | 8 | 3 |
| 17 | 15.000 | 27.857 | 19.500 | 5 | 9 |
| 18 | 21.000 | 23.333 | 19.091 | 7 | 6 |
| 19 | 63.000 | 70.875 | 94.500 | 9 | 7 |
| 20 | 12.000 | 17.143 | 15.429 | 12 | 6 |
| 21 | 180.000 | 234.000 | 312.000 | 8 | 3 |
| 22 | 252.000 | 324.000 | 416.571 | 9 | 4 |
| 23 | 112.000 | 182.000 | 182.000 | 7 | 4 |
| 24 | 4.444 | 5.000 | 7.500 | 5 | 3 |
| 25 | 8.000 | 13.000 | 11.556 | 11 | 8 |
| 26 | 44.000 | 71.500 | 63.556 | 11 | 4 |
| 27 | 392.000 | 435.556 | 622.222 | 8 | 7 |
| 28 | 770.000 | 910.000 | 1213.333 | 10 | 7 |

*К-6* файл o6k4A