

Сферическое движение

Твердое тело совершает сферическое движение, заданное углами Эйлера. Найти модуль угловой скорости тела при $t = 0$.

Кирсанов М.Н. **Решебник. Теоретическая механика**/Под ред. А. И. Кириллова.– М.: ФИЗМАТЛИТ, 2008. — 384 с. (с.222.)

Задача К15.1.

3

$$\begin{aligned}\psi &= 18t, \\ \varphi &= 6t - \pi/6, \\ \vartheta &= 4t + \pi/3.\end{aligned}$$

Задача К15.2.

3

$$\begin{aligned}\psi &= 15t - \pi/2, \\ \varphi &= 13t - \pi/6, \\ \vartheta &= 6t + \pi/3.\end{aligned}$$

Задача К15.3.

3

$$\begin{aligned}\psi &= 10t + \pi/6, \\ \varphi &= 10t - \pi/2, \\ \vartheta &= t + \alpha, \cos \alpha = 4/5.\end{aligned}$$

Задача К15.4.

3

$$\begin{aligned}\psi &= 15t, \\ \varphi &= 13t - \pi/6, \\ \vartheta &= 6t + \pi/3.\end{aligned}$$

Задача К15.5.

3

$$\begin{aligned}\psi &= 8t - \pi/2, \\ \varphi &= 5t - \pi/2, \\ \vartheta &= 4t + \alpha, \cos \alpha = 4/5.\end{aligned}$$

Задача К15.6.

3

$$\begin{aligned}\psi &= 5t - \pi/2, \\ \varphi &= 5t + \pi/4, \\ \vartheta &= t + \alpha, \cos \alpha = 3/5.\end{aligned}$$

Задача К15.7.

3

$$\begin{aligned}\psi &= 13t - \pi/6, \\ \varphi &= 10t + \pi/4, \\ \vartheta &= 4t + \alpha, \cos \alpha = 3/5.\end{aligned}$$

Задача К15.8.

3

$$\begin{aligned}\psi &= 15t, \\ \varphi &= 6t - \pi/2, \\ \vartheta &= 6t + \alpha, \cos \alpha = 4/5.\end{aligned}$$

Задача К15.9.

3

$$\begin{aligned}\psi &= 14t + \pi/6, \\ \varphi &= 9t - \pi/6, \\ \vartheta &= 9t + \pi/3.\end{aligned}$$

Задача К15.10.

3

$$\begin{aligned}\psi &= 10t - \pi/3, \\ \varphi &= 10t - \pi/2, \\ \vartheta &= 9t + \alpha, \cos \alpha = 4/5.\end{aligned}$$

Задача К15.11.

3

$$\begin{aligned}\psi &= 15t - \pi/6, \\ \varphi &= 13t - \pi/6, \\ \vartheta &= 6t + \pi/3.\end{aligned}$$

Задача К15.12.

3

$$\begin{aligned}\psi &= 15t - \pi/4, \\ \varphi &= 15t + \pi/4, \\ \vartheta &= 3t + \alpha, \cos \alpha = 3/5.\end{aligned}$$

Задача К15.13.

3

$$\begin{aligned}\psi &= 6t, \\ \varphi &= 3t - \pi/6, \\ \vartheta &= t + \pi/3.\end{aligned}$$

Задача К15.14.

3

$$\begin{aligned}\psi &= 15t + \pi/6, \\ \varphi &= 9t + \pi/4, \\ \vartheta &= 4t + \alpha, \cos \alpha = 3/5.\end{aligned}$$

Задача K15.15.

3

$$\begin{aligned}\psi &= 10t + \pi/4, \\ \varphi &= 10t - \pi/2, \\ \vartheta &= t + \alpha, \cos \alpha = 4/5.\end{aligned}$$

Задача K15.16.

3

$$\begin{aligned}\psi &= 15t + \pi/6, \\ \varphi &= 6t - \pi/2, \\ \vartheta &= 6t + \alpha, \cos \alpha = 4/5.\end{aligned}$$

Задача K15.17.

3

$$\begin{aligned}\psi &= 15t + \pi/2, \\ \varphi &= 15t + \pi/4, \\ \vartheta &= 3t + \alpha, \cos \alpha = 3/5.\end{aligned}$$

Задача K15.18.

3

$$\begin{aligned}\psi &= 8t - \pi/4, \\ \varphi &= 5t - \pi/2, \\ \vartheta &= 4t + \alpha, \cos \alpha = 4/5.\end{aligned}$$

Задача K15.19.

3

$$\begin{aligned}\psi &= 5t + \pi/4, \\ \varphi &= 2t - \pi/2, \\ \vartheta &= 2t + \alpha, \cos \alpha = 4/5.\end{aligned}$$

Задача K15.20.

3

$$\begin{aligned}\psi &= 10t - \pi/4, \\ \varphi &= 9t - \pi/2, \\ \vartheta &= 6t + \alpha, \cos \alpha = 4/5.\end{aligned}$$

Задача K15.21.

3

$$\begin{aligned}\psi &= 15t + \pi/2, \\ \varphi &= 15t - \pi/6, \\ \vartheta &= t + \pi/3.\end{aligned}$$

Задача K15.22.

3

$$\begin{aligned}\psi &= 13t + \pi/2, \\ \varphi &= 10t + \pi/4, \\ \vartheta &= 4t + \alpha, \cos \alpha = 3/5.\end{aligned}$$

Задача K15.23.

3

$$\begin{aligned}\psi &= 6t + \pi/2, \\ \varphi &= 5t - \pi/6, \\ \vartheta &= 3t + \pi/3.\end{aligned}$$

Задача K15.24.

3

$$\begin{aligned}\psi &= 9t, \\ \varphi &= 6t - \pi/6, \\ \vartheta &= 5t + \pi/3.\end{aligned}$$

Задача K15.25.

3

$$\begin{aligned}\psi &= 10t - \pi/4, \\ \varphi &= 4t - \pi/2, \\ \vartheta &= 4t + \alpha, \cos \alpha = 4/5.\end{aligned}$$

Задача K15.26.

3

$$\begin{aligned}\psi &= 15t - \pi/4, \\ \varphi &= 9t + \pi/4, \\ \vartheta &= 4t + \alpha, \cos \alpha = 3/5.\end{aligned}$$

Задача K15.27.

3

$$\begin{aligned}\psi &= 10t + \pi/2, \\ \varphi &= 9t - \pi/2, \\ \vartheta &= 6t + \alpha, \cos \alpha = 4/5.\end{aligned}$$

Задача K15.28.

3

$$\begin{aligned}\psi &= 16t + \pi/6, \\ \varphi &= 10t - \pi/2, \\ \vartheta &= 8t + \alpha, \cos \alpha = 4/5.\end{aligned}$$

Задача K15.29.

3

$$\begin{aligned}\psi &= 13t + \pi/4, \\ \varphi &= 10t + \pi/4, \\ \vartheta &= 4t + \alpha, \cos \alpha = 3/5.\end{aligned}$$

Задача K15.30.

3

$$\begin{aligned}\psi &= 10t - \pi/6, \\ \varphi &= 10t - \pi/2, \\ \vartheta &= t + \alpha, \cos \alpha = 4/5.\end{aligned}$$

K15 Ответы.
Сферическое движение

15.08.2012

	ω
1	22
2	25
3	19
4	25
5	13
6	9
7	21
8	21
9	22
10	21
11	25
12	27
13	8
14	22
15	19
16	21
17	27
18	13
19	7
20	19
21	26
22	21
23	10
24	14
25	14
26	22
27	19
28	26
29	21
30	19

K15 файл о15к3А