

Задана 21

$$\varphi = 60^\circ, \text{ ось } i$$

$$\varphi = 150^\circ, \text{ ось } j$$

$$B = \{i, j, k\}$$

$$B' = \{i', j', k'\}$$

$$B'' = \{i'', j'', k''\}$$

$$T_{B \rightarrow B''} = ?$$

$$T_{B \rightarrow B''} = T_{B \rightarrow B'} \cdot T_{B' \rightarrow B''}$$



$$i'' = i$$

$$j'' = i \cdot 0 + \cos \varphi \cdot j + \sin \varphi \cdot k$$

$$k'' = i \cdot 0 + (-\sin \varphi \cdot j) + \cos \varphi \cdot k$$

$$T_{B \rightarrow B'} = \begin{pmatrix} 1 & 0 & 0 \\ 0 & \cos \varphi & -\sin \varphi \\ 0 & \sin \varphi & \cos \varphi \end{pmatrix} = \begin{pmatrix} 1 & 0 & 0 \\ 0 & \frac{1}{2} & -\frac{\sqrt{3}}{2} \\ 0 & \frac{\sqrt{3}}{2} & \frac{1}{2} \end{pmatrix}$$