

Exercises

1. A vector ${}^A\mathbf{P}$ is rotated about the axis $\hat{\mathbf{Y}}_A$ by an angle of 45° , and then rotated about the axis $\hat{\mathbf{X}}_A$ by an angle of 60° . Give the rotation matrix that performs these rotations in the indicated order.
2. The reference frame $\{B\}$ is rotated with respect to $\{A\}$ about $\hat{\mathbf{X}}_A$ by 30° . The translation of $\{B\}$ from $\{A\}$ is given by $\begin{bmatrix} 5 \\ 10 \\ 0 \end{bmatrix}$. Formulate the homogeneous transformation matrix.
3. From the given image, obtain:
 - The value of ${}^A_B T$
 - The value of ${}^A_C T$

