Step-1

Given that x_1, x_2, x_3 are the columns of a matrix X where $Ax_1 = \begin{bmatrix}1\\0\\0\end{bmatrix}, Ax_2 = \begin{bmatrix}0\\1\\0\end{bmatrix}, Ax_3 = \begin{bmatrix}0\\0\\1\end{bmatrix}$.

We have to find AX.

Step-2

Let $X = \begin{bmatrix} x_1 & x_2 & x_3 \end{bmatrix}$.

Now $AX = A\begin{bmatrix} x_1 & x_2 & x_3 \end{bmatrix}$

$= \begin{bmatrix} Ax_1 & Ax_2 & Ax_3 \end{bmatrix}$

$= \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$

$= I$

Step-3

Hence A times $X = \begin{bmatrix} x_1 & x_2 & x_3 \end{bmatrix}$ will be the Identity matrix where $\boxed{I = \begin{bmatrix} Ax_1 & Ax_2 & Ax_3 \end{bmatrix}}$.