

Based on the **Kronecker product** $\otimes$ from [Lecture $\rightarrow$ Def. 1.4.3.7] write down a matrix $\mathbf{C} \in \mathbb{R}^{n^2, n^2}$ depending on the given square matrices $\mathbf{S}, \mathbf{T} \in \mathbb{R}^{n, n}$ such that

$$\text{vec}(\mathbf{SXT}) = \mathbf{C} \text{vec}(\mathbf{X}) .$$