

Multivariable Calculus

Quiz 2

Fulbright University Vietnam

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- ① What is the formula for a dot product of two vectors

$$\vec{v} = \begin{pmatrix} v_1 \\ v_2 \\ v_3 \end{pmatrix}, \vec{w} = \begin{pmatrix} w_1 \\ w_2 \\ w_3 \end{pmatrix} ?$$

- ② Let $\mathbf{r}(t)$ be a curve in \mathbb{R}^3 . Let $\mathbf{T}(t_0)$ be the unit tangent vector of the curve at the point $\mathbf{r}(t_0)$. What can you say about $\mathbf{T}(t_0) \cdot \mathbf{T}'(t_0)$? Why?