

Lecture 7

Thursday, May 9, 2024 9:16 PM

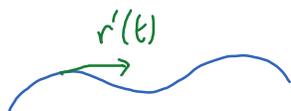
Domain of a vector function

Limit of a vector function

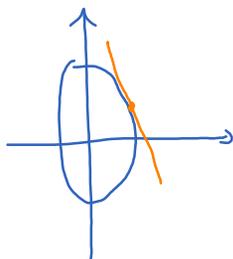
Derivative of a vector function

$$r'(t) = (x'(t), y'(t), z'(t))$$

$$= \lim_{h \rightarrow 0} \frac{r(t+h) - r(t)}{h}$$



Example of the ellipse: $\begin{cases} x = 2 \cos t \\ y = 3 \sin t \end{cases}$



find the tangent line at $t = \frac{\pi}{4}$

Integral of a vector function:

$$\int r(t) dt = \left(\int x(t) dt, \int y(t) dt, \int z(t) dt \right)$$