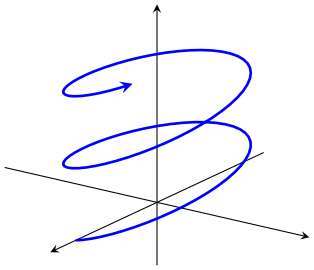
1 14.1: Vector-Valued Functions

Vector-valued functions are functions of the form $\mathbf{r}(t) = \langle x(t), y(t), z(t) \rangle$, where $x(t)$, $y(t)$, and $z(t)$ are parametric equations dependent on t.



Definition. (Limit of a Vector-Valued Function)
A vector-valued function $\mathbf{r}$ approaches the limit $\mathbf{L}$ as t approaches a, written $\lim_{x \to a} \mathbf{r}(t) = \mathbf{L}$, provided $\lim_{x \to a} |\mathbf{r}(t) - \mathbf{L}| = 0$.