Def: A space curve is . . .

A special type of space curve that we have already seen is . . .

Note:

Def: A vector-valued function is a function of the form . . .

Ex 1: Sketch the curve traced out by the vector-valued function \( r(t) = (1, t, t^2) \). Include the orientation of the curve.
Ex 2: Sketch the curve traced out by \( \mathbf{r}(t) = \langle 2 \cos t, t, 2 \sin t \rangle \). Include the orientation of the curve.

Ex 3: Sketch the curve traced out by \( \mathbf{r}(t) = \langle 1, \sin t, 1 \rangle \). Include the orientation of the curve.

Ex 4: Find a vector-valued function to represent the curve of intersection between surfaces given by \( x^2 + y^2 + z^2 = 16 \) and \( xy = 4 \). (Assume \( x, y, \) and \( z \) are all positive.)
Ex 5: Use a vector-valued function to represent the curve of intersection between the surfaces given by $z = x^2 + y^2$ and $x + y = 0$. 