Pbm Nov 03 cap{4,6}930: Geometric Modeling

Name:

Draw a 3D interactive view (eg Matlab or OpenGL) of the following space curve and its Bézier polygons. The two curve pieces of degree 3 satisfy the following constraints.

(i) Both the start point and end point are $\begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix}$.

(ii) The start derivative is $\begin{bmatrix} 3 \\ 0 \\ 0 \end{bmatrix}$, the end derivative is $\begin{bmatrix} 0 \\ -3 \\ 0 \end{bmatrix}$.

(iii) The start second derivative is $\begin{bmatrix} 6 \\ 0 \\ -6 \end{bmatrix}$.

(iv) The curve pieces should join C^2.