CS121: Exercise 4/7/03 Name:____________________________

1. Suppose we have a Hermitian curve ($X_0(t)$, $Y_0(t)$). We want to define a second curve, ($X_1(t)$,$Y_1(t)$), that satisfies some continuity constraints at its boundary with the first. Assume $X_0(t)$ is specified by $X_0(0)$, $X_0(1)$, $X_0'(0)$, $X_0'(1)$. What conditions must $X_1(0)$, $X_1(1)$, $X_1'(0)$, $X_1'(1)$ satisfy if we want

a. C^0 continuity

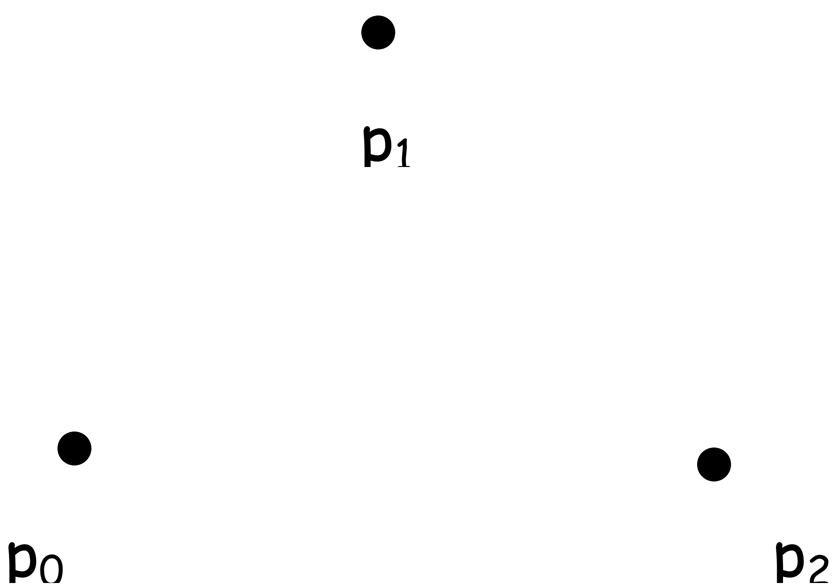
b. G^0 continuity

c. C^1 continuity

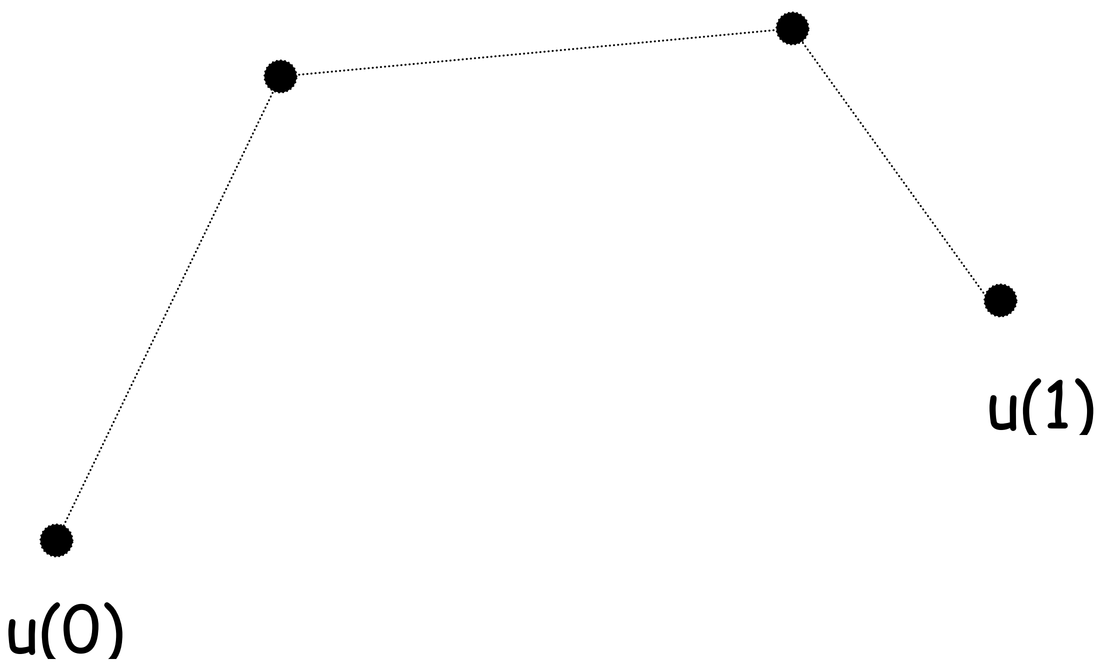
d. G^1 continuity

e. C^2 continuity

2. Based on the properties of the Bezier curve, sketch the quadratic Bezier for the following control points.



2. Use deCasteljau's algorithm to compute u(1/2).



4. Construct the polar form for $X(t) = at^3 + bt^2 + ct + d$.