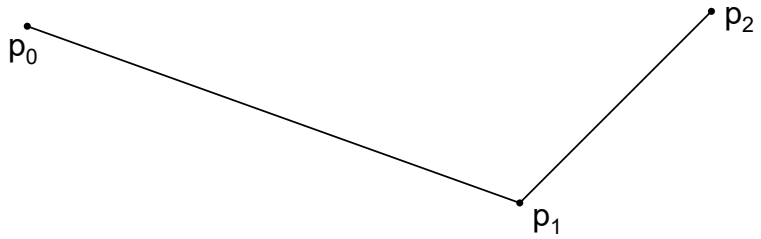
1. **2nd order (quadratic) Bézier curve:** Draw the Bézier curve with control points $\vec{p}_0, \vec{p}_1, \vec{p}_2$ using guiding points with t = 0.25, 0.5, 0.75.



2. Here is the parametric equation of a quadratic Bézier curve

$$Q(t) = (1-t)^2\vec{p}_0 + 2(1-t)t\vec{p}_1 + t^2\vec{p}_2$$

Rearrange this function to make it look more like a quadratic in t (i.e., $Q(t) = at^2 + bt + c$).

(a) Take the derivative of this rearranged function with respect to t.

(b) What is the derivative at $t = 0$? $t = 1$? What can we say about the tangents at p_0 and p_2?

3. **3rd order (cubic) Bézier curve:** Draw the Bézier curve with control points $\vec{p}_0, \vec{p}_1, \vec{p}_2, \vec{p}_3$ using guiding points with t = 0.25, 0.5, 0.75.