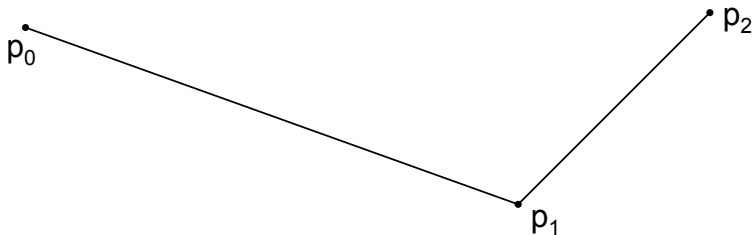


1. **2nd order (quadratic) Bézier curve:** Draw the Bézier curve with control points $\vec{p}_0, \vec{p}_1, \vec{p}_2$, using guiding points with $t = 0.25, 0.5, 0.75$.



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

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

- (a) Rearrange this function to make it look more like a quadratic in t (i.e. $Q(t) = at^2 + bt + c$).
- (b) Take the derivative of this rearranged function with respect to t .
- (c) What is the derivative at $t = 0$? $t = 1$? What can we say about the tangents at \vec{p}_0 and \vec{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 $t = 0.25, 0.5, 0.75$.

