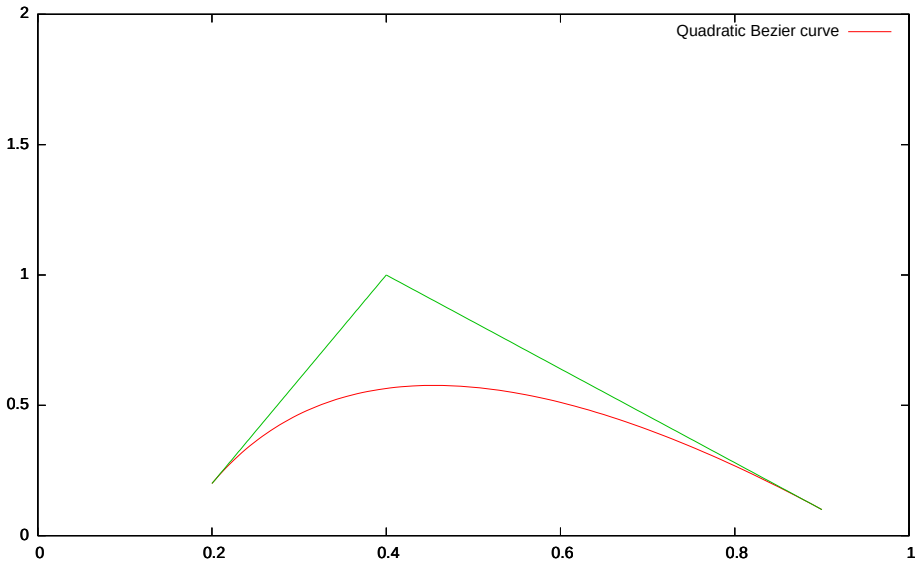
Exercises for chapter: Splines

1. One could also define quadratic Bezier curves. These have only a single control point, and the curve is such that in both the endpoints it is aimed at the control point.



Derive the basis functions and geometry matrix for this case. Make a `gnuplot` figure of a single quadratic Bezier curve, and of two curves joined smoothly.
Hint: you can follow the construction of the cubic splines in the lecture notes. The only problem is defining the control point. First draw up the Hermite geometry matrix based on end points q_0 and q_1, and the derivative q'_0 in the first end point. Derive from them the derivative q'_1 in the other end point. The control point then lies on the intersection of two lines. Solving this looks like a single equation in two unknowns, but it can be solved: write it as a matrix-vector equation that is satisfied no matter the choice of the geometry matrix.