

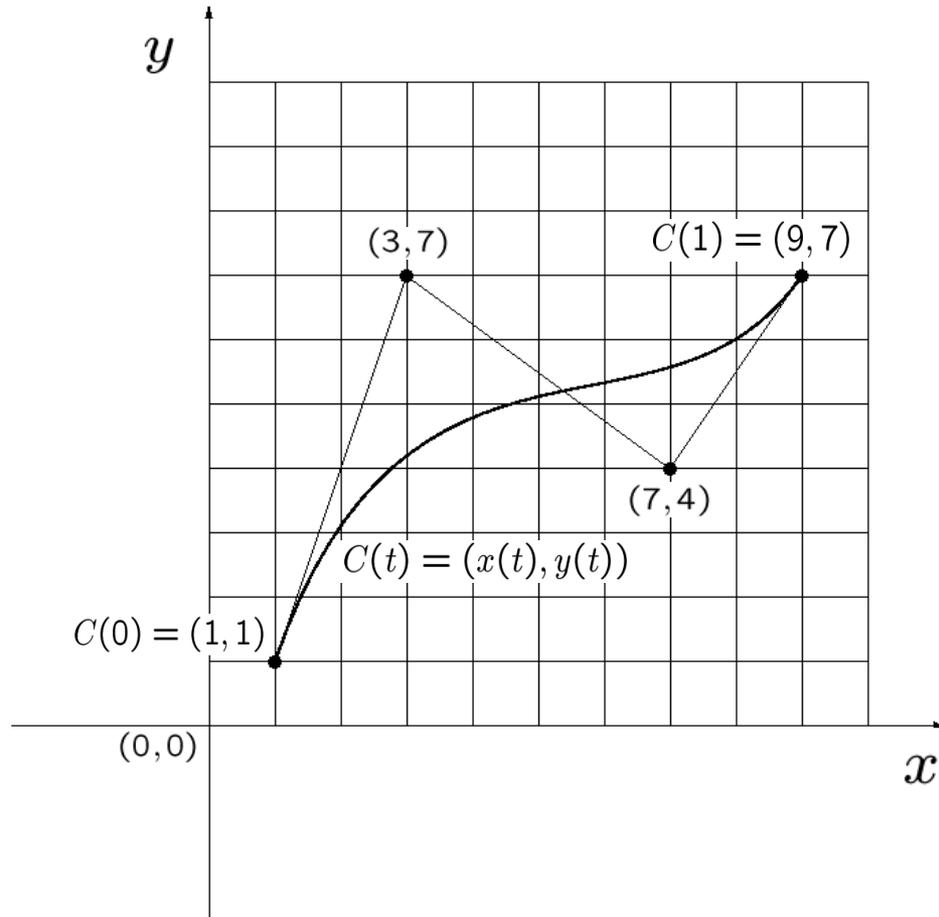
# Bezier 곡선

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김명수

<http://cse.snu.ac.kr/mskim>

<http://3map.snu.ac.kr>

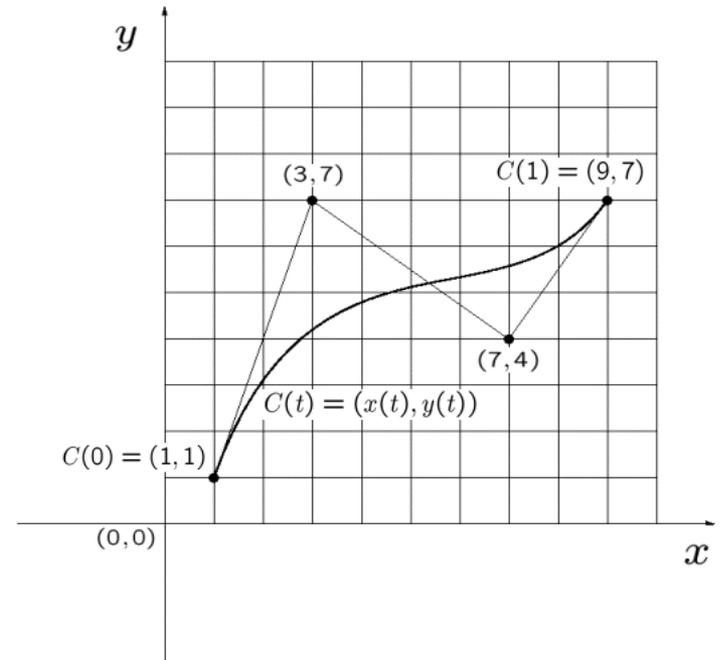
# 곡선의 표현



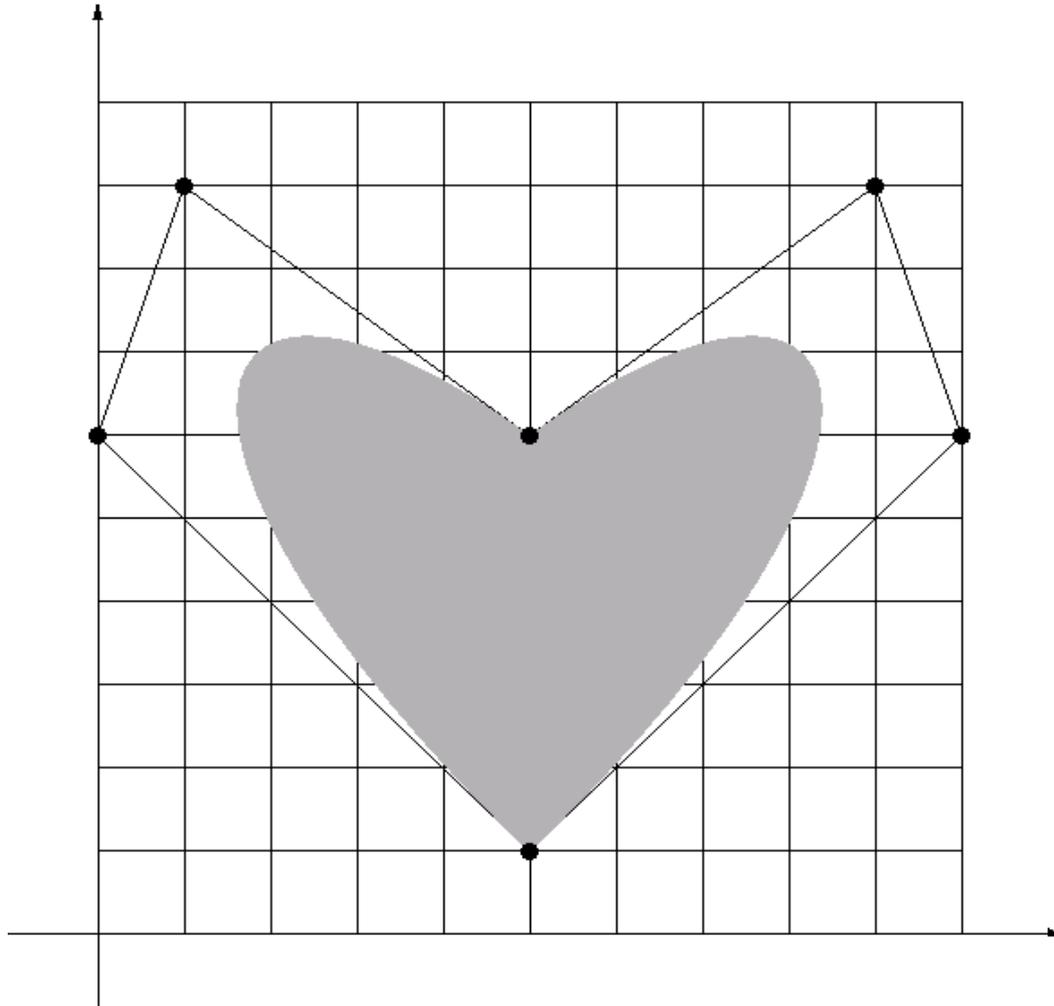
# PostScript 곡선

1 1 moveto

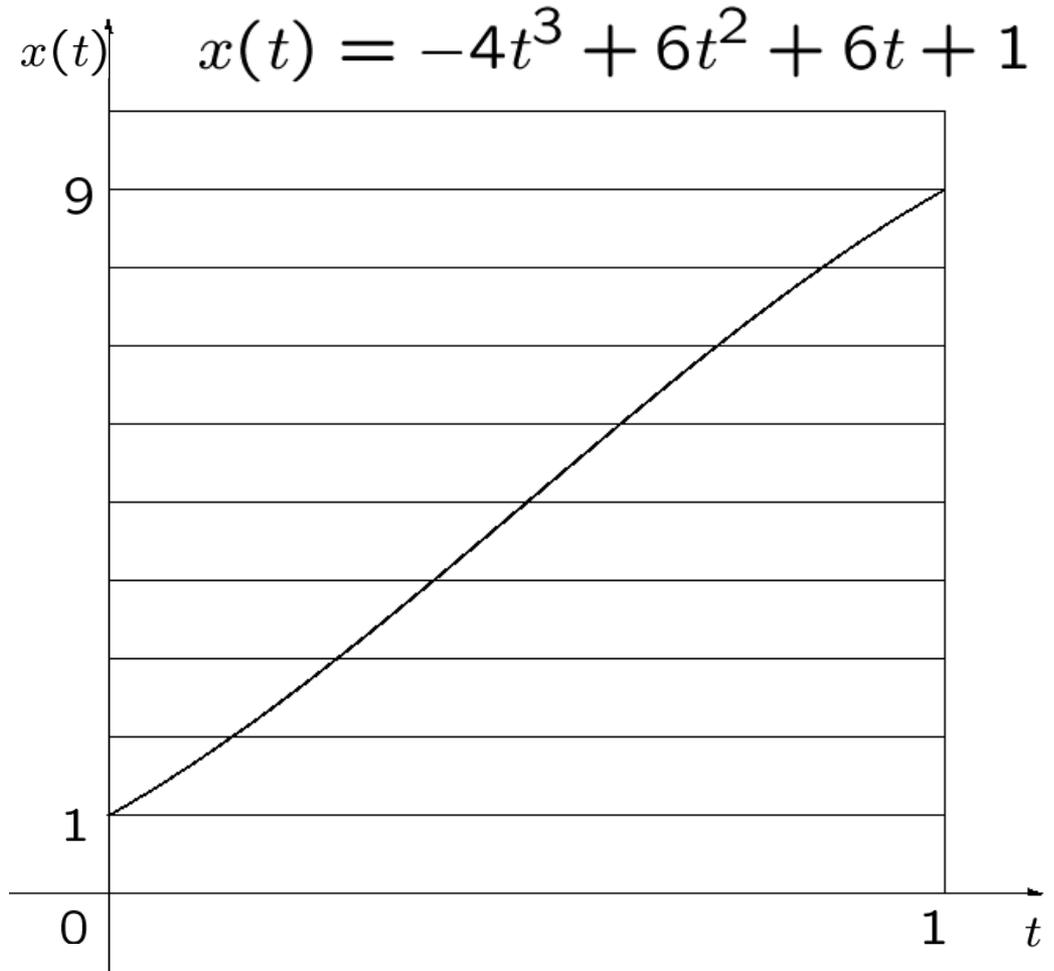
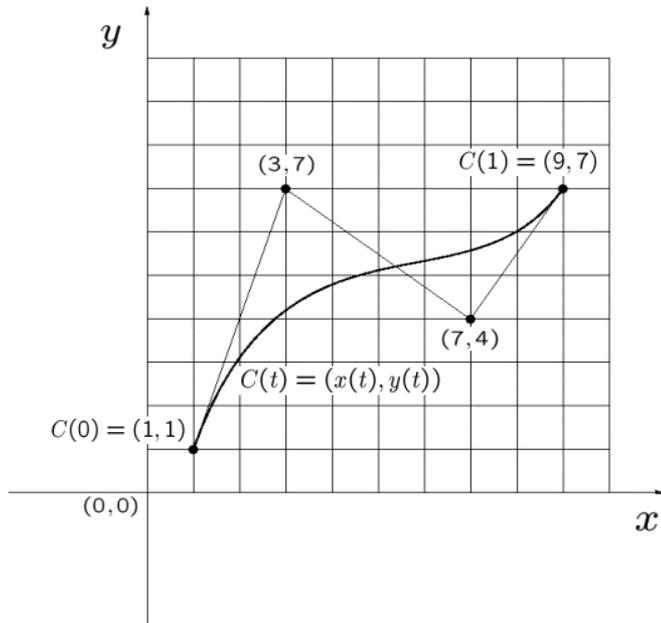
3 7 7 4 9 7 curveto



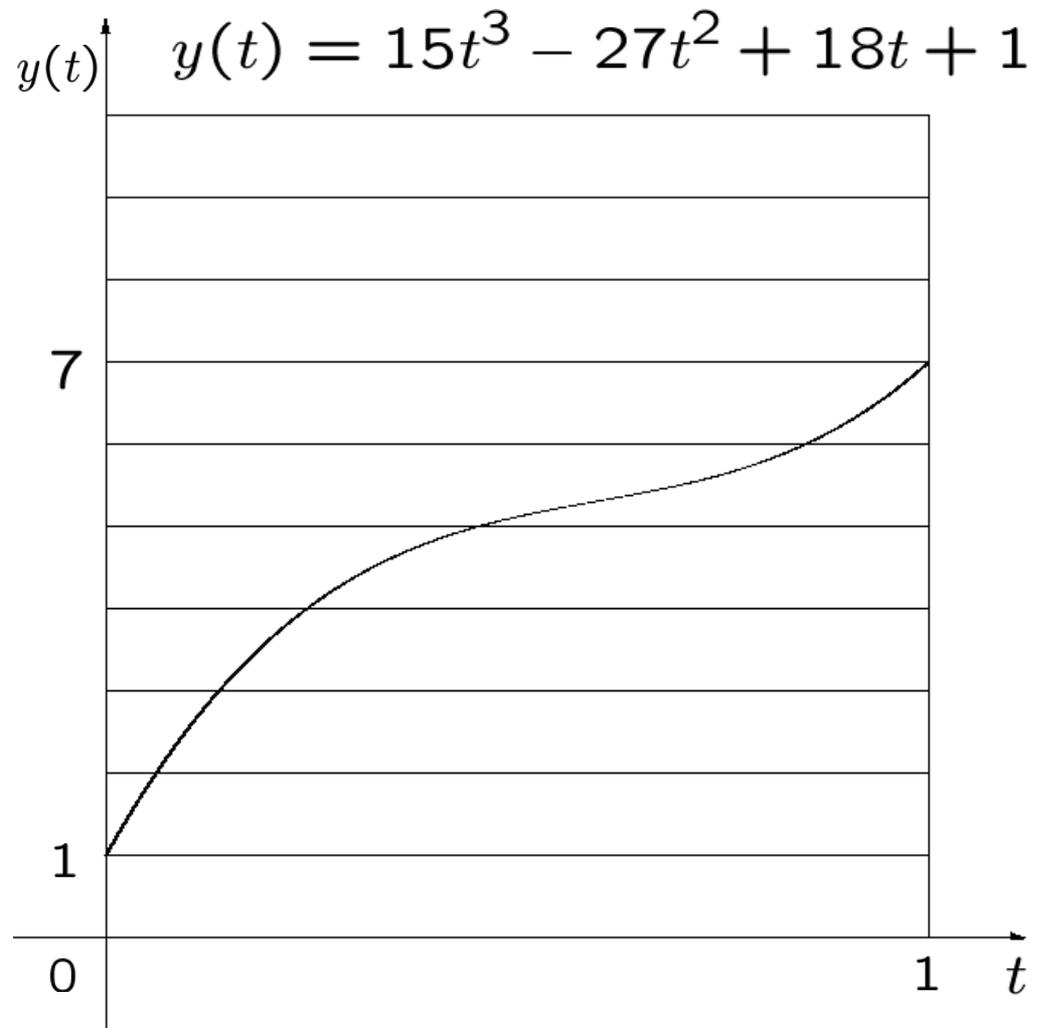
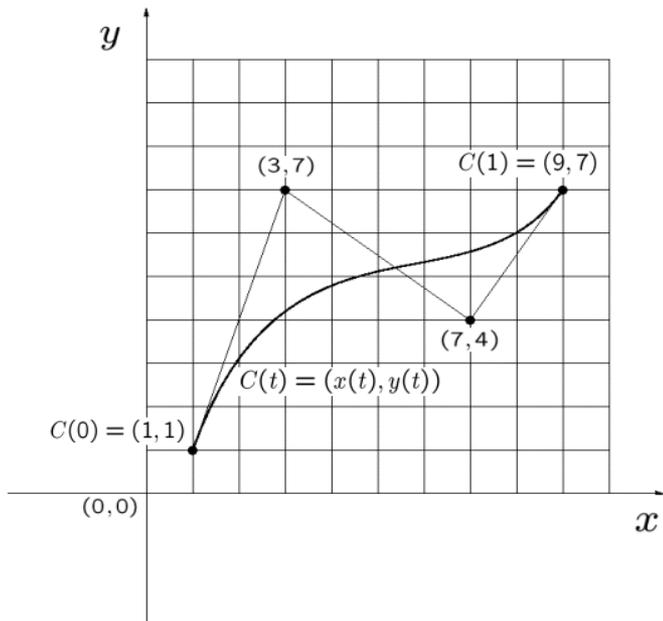
# 곡선을 이용한 도형디자인



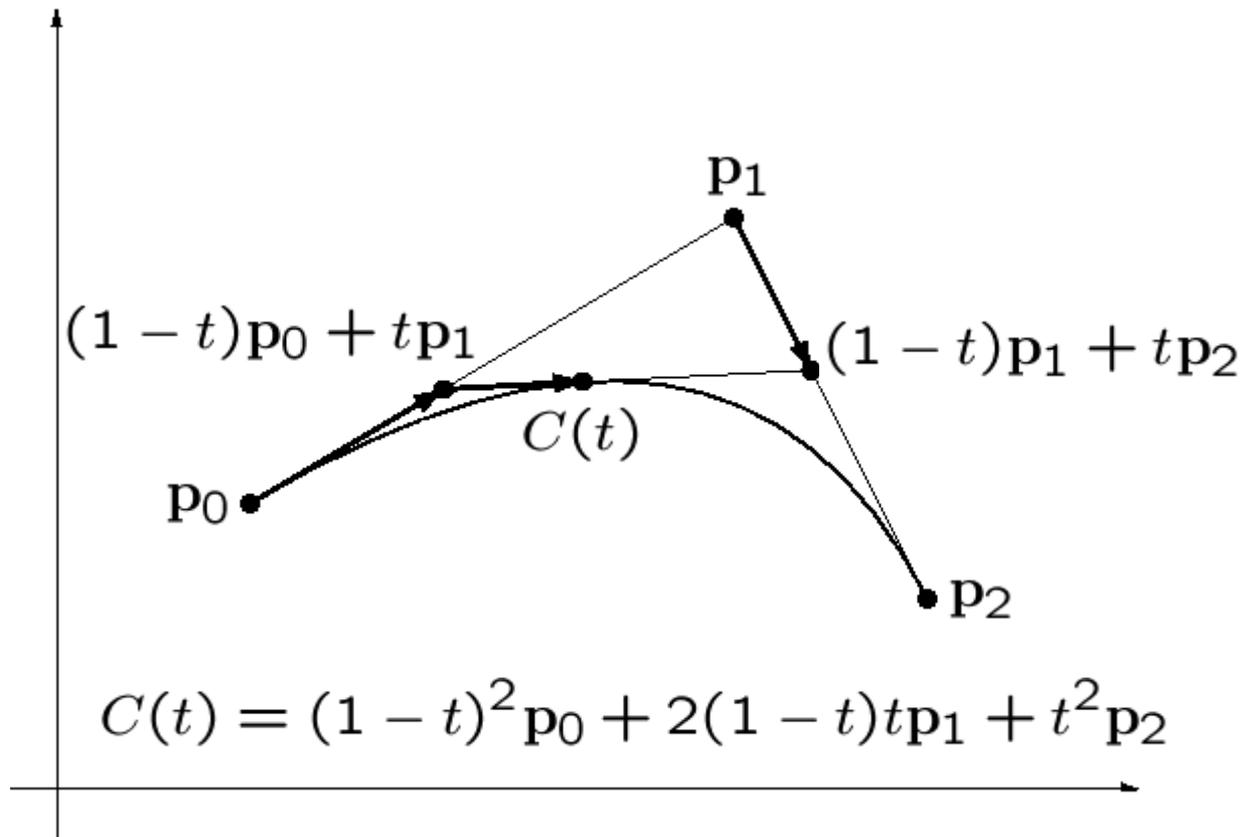
# 곡선의 X-좌표함수



# 곡선의 $y$ -좌표함수



# Bezier 2차 곡선의 정의



# Bezier 3차 곡선의 정의

$$C(t) = (1-t)^3 \mathbf{p}_0 + 3(1-t)^2 t \mathbf{p}_1 \\ + 3(1-t)t^2 \mathbf{p}_2 + t^3 \mathbf{p}_3$$

$$x(t) = (1-t)^3 + 9(1-t)^2 t \\ + 21(1-t)t^2 + 9t^3 \\ = -4t^3 + 6t^2 + 6t + 1$$

$$y(t) = (1-t)^3 + 21(1-t)^2 t \\ + 12(1-t)t^2 + 7t^3 \\ = 15t^3 - 27t^2 + 18t + 1$$

