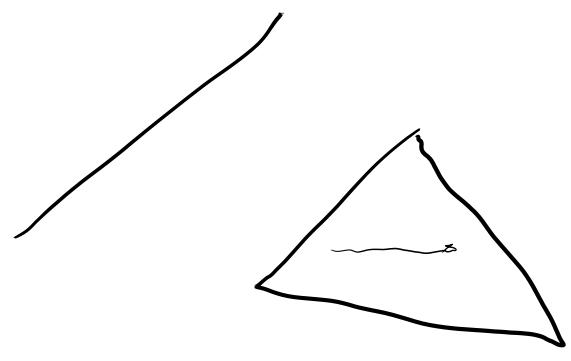


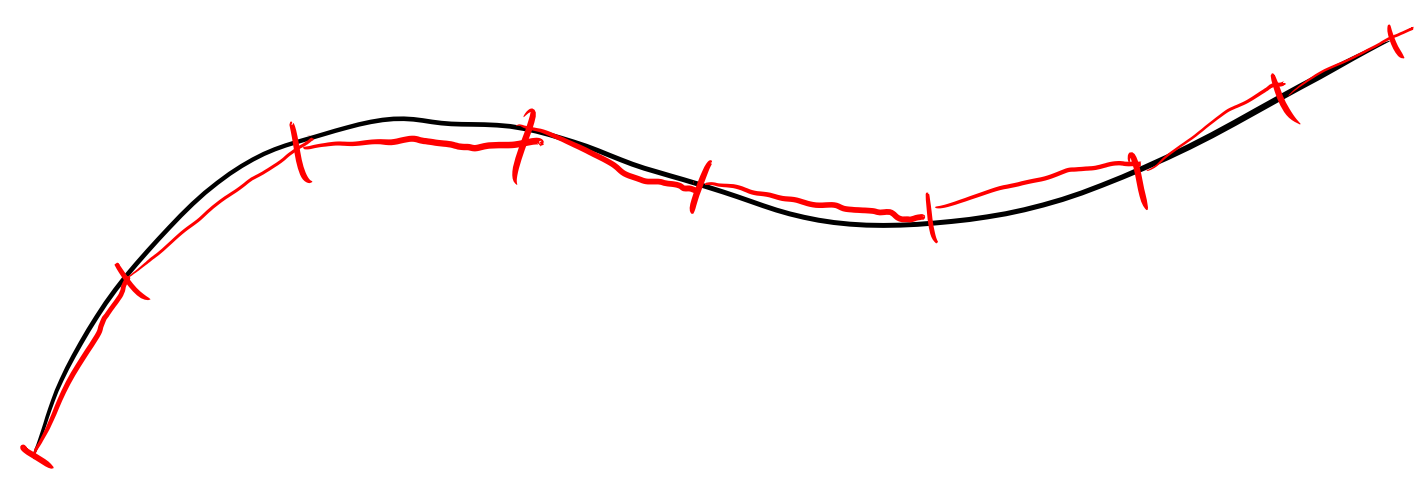
linearity



constant

linear

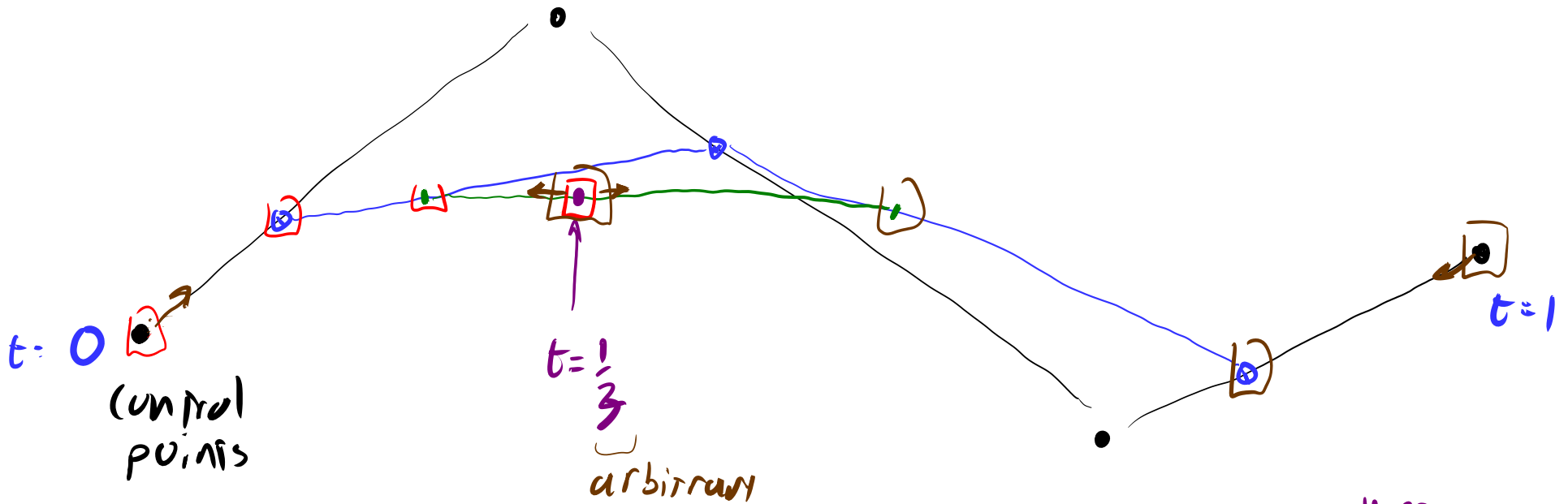
subdivision



Bézier

de Casteljau

$\frac{1}{3}$



$t=0$ (control points)

$t=\frac{1}{3}$
arbitrary

$t=1$

$x(t)$
 $y(t)$

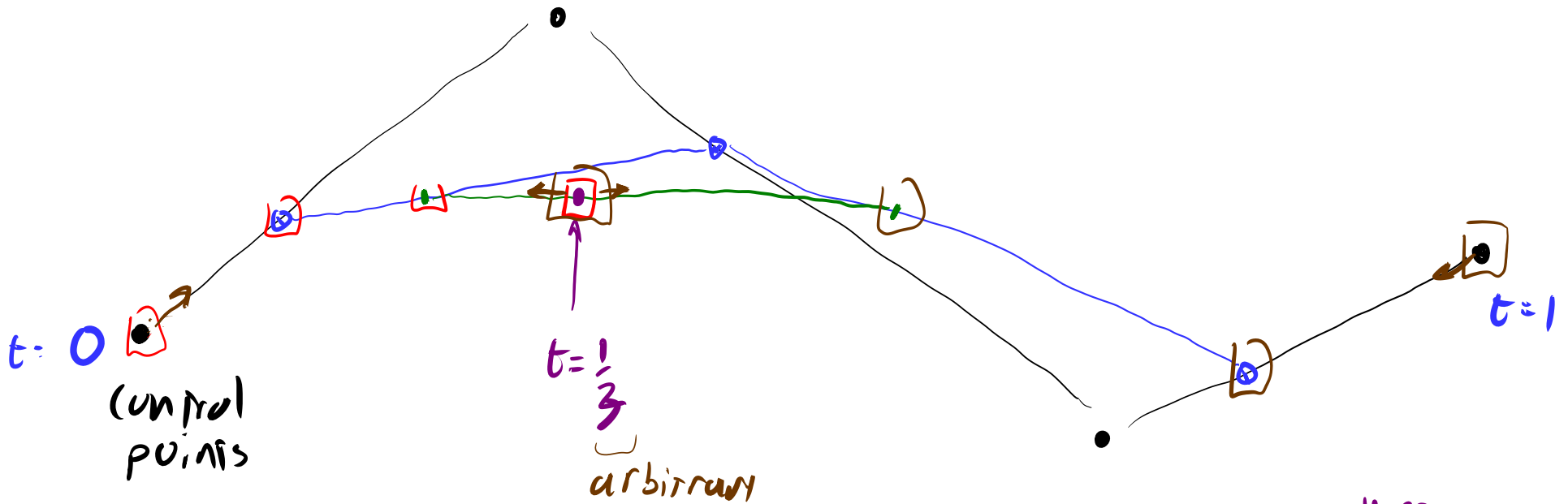
³
Cubic poly
Cubic poly

$\#CP-1$
 $a + 3r + bt^2 + ct + d$

Bézier

de Casteljau

$\frac{1}{3}$



$$x(t)$$
$$y(t)$$

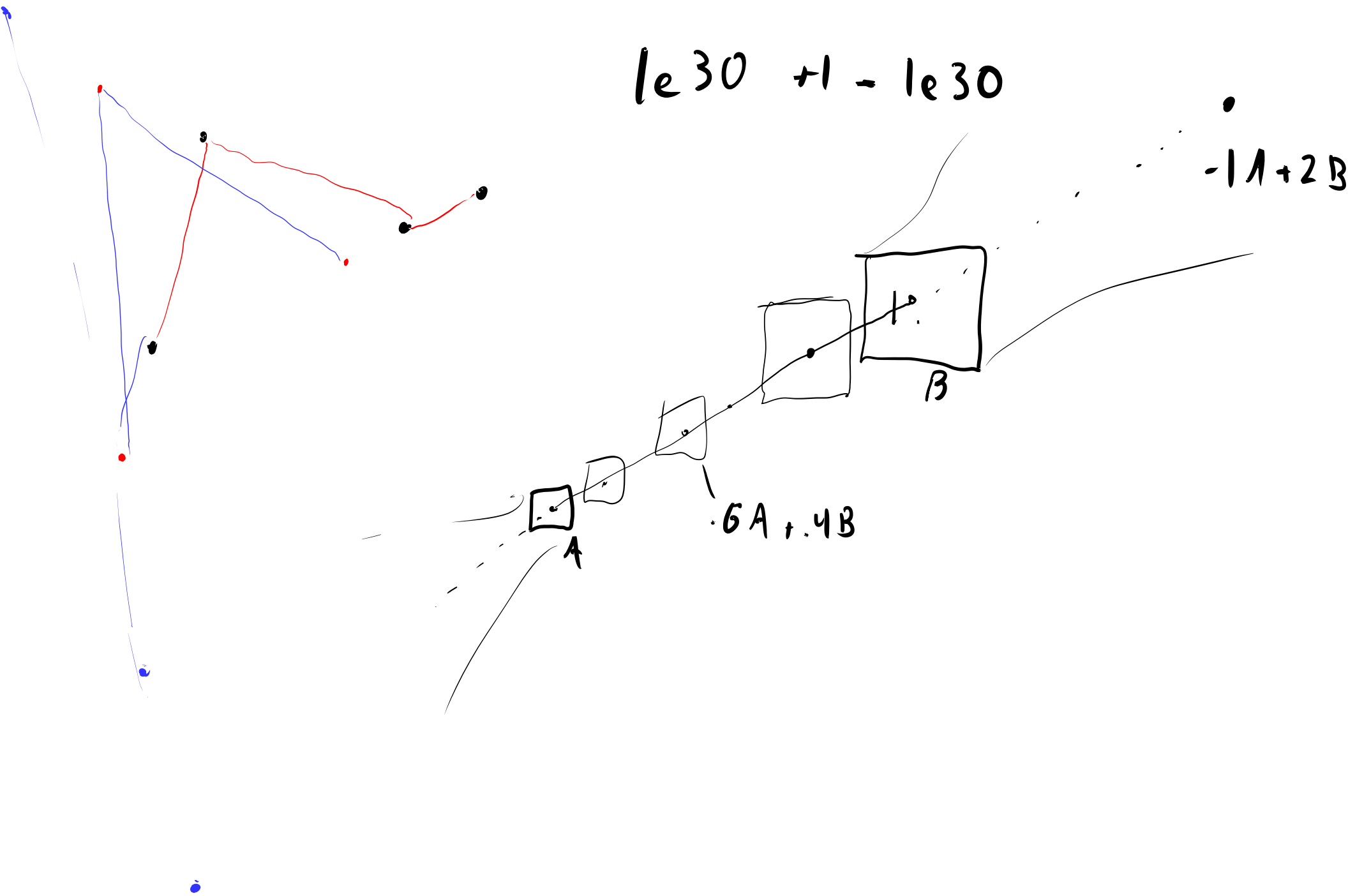
³
Cubic poly
Cubic poly

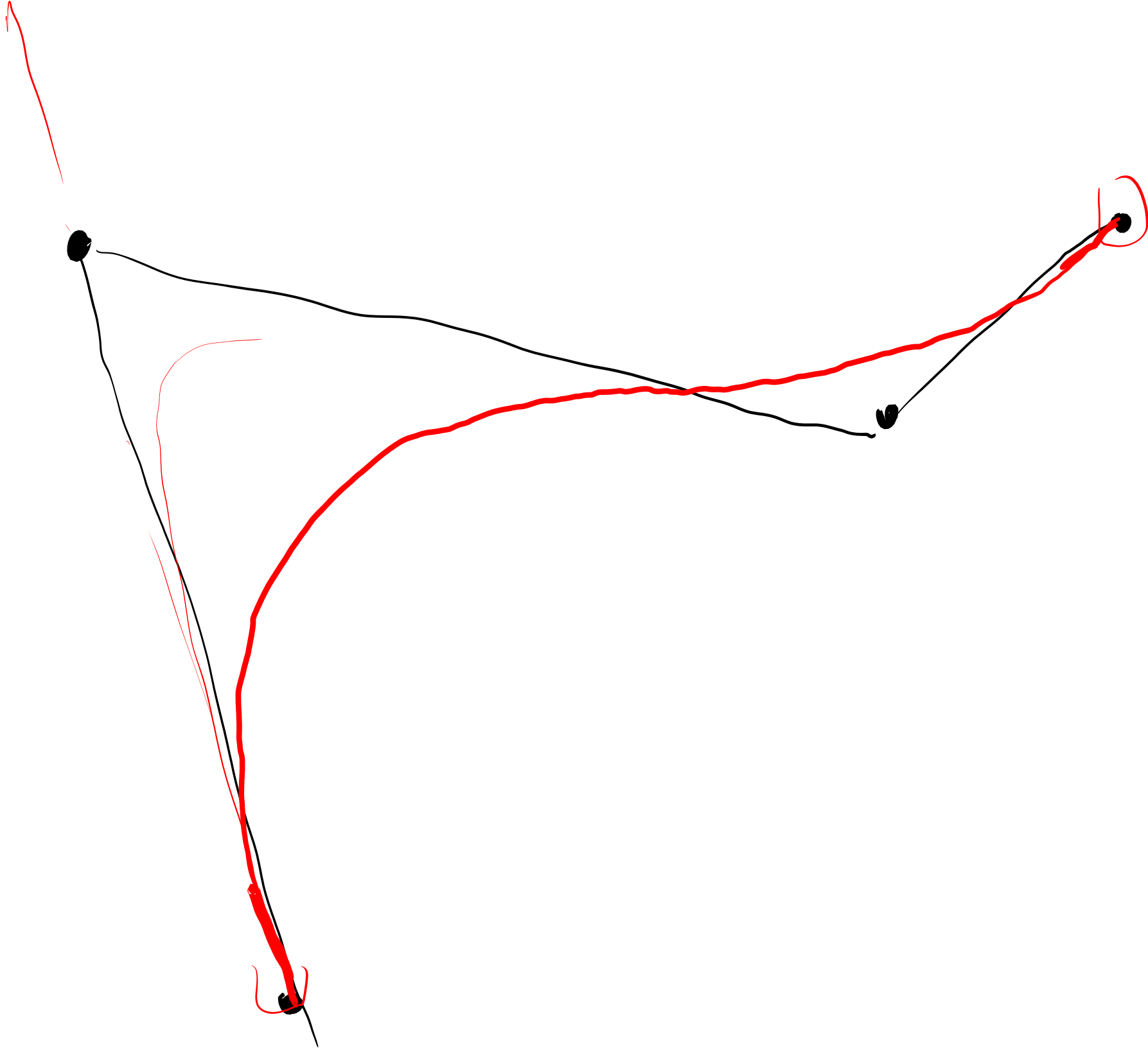
#CP-1
 $a + 3r + bt^2 + ct + d$

Numerical Stability

$$1e30 + 1 - 1e30$$

$$-1A + 2B$$





B-spline

Spline - piecewise polynomial curve

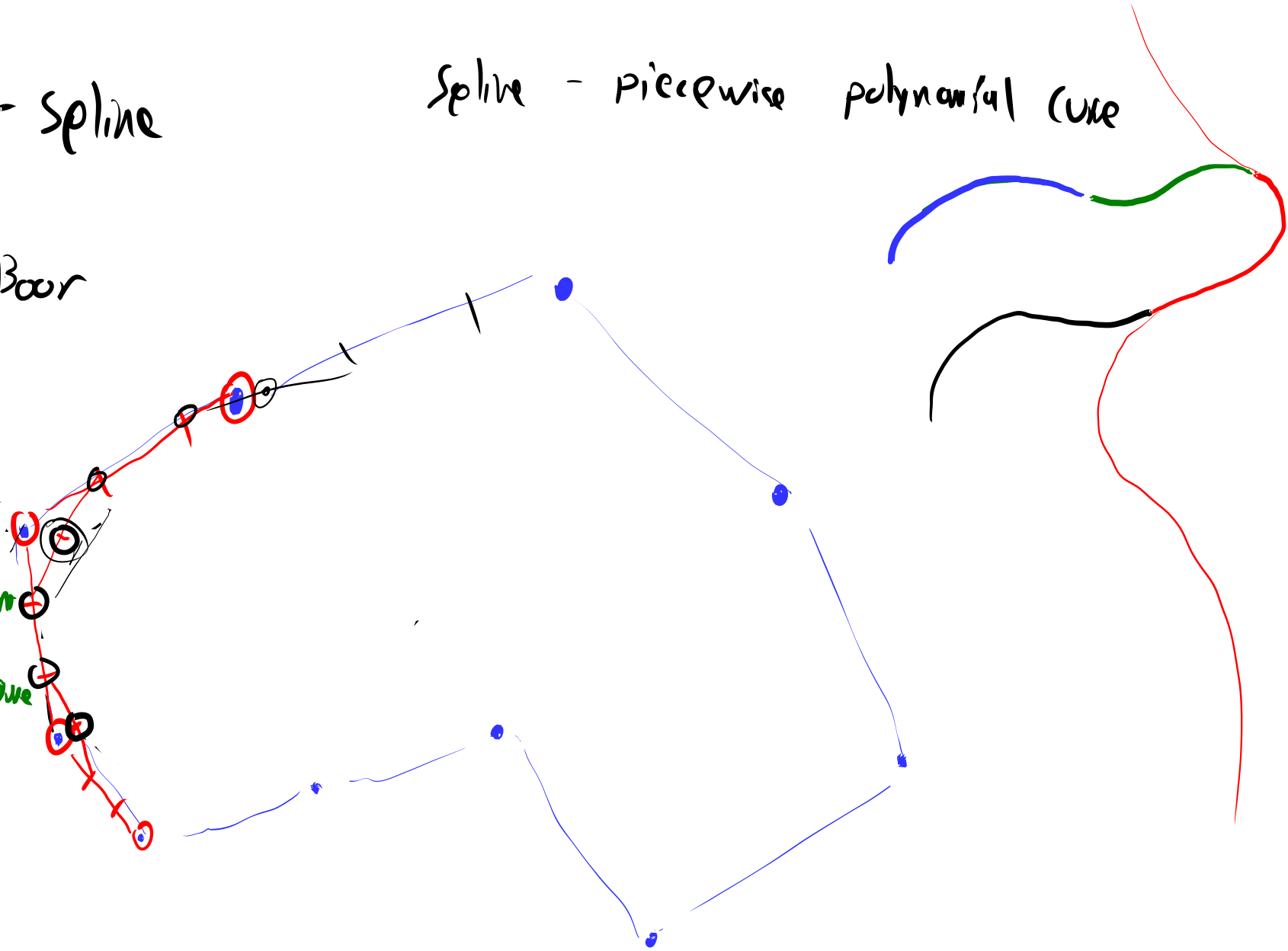
de Boor

Continuity

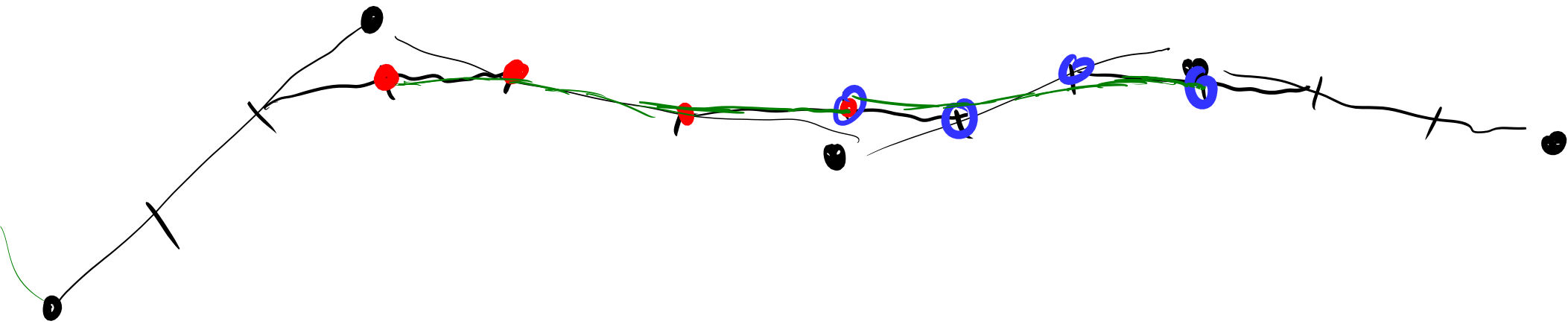
$C^0 \rightarrow$ touch

$C^1 \rightarrow$ same tangent

$C^2 \rightarrow$ same curvature

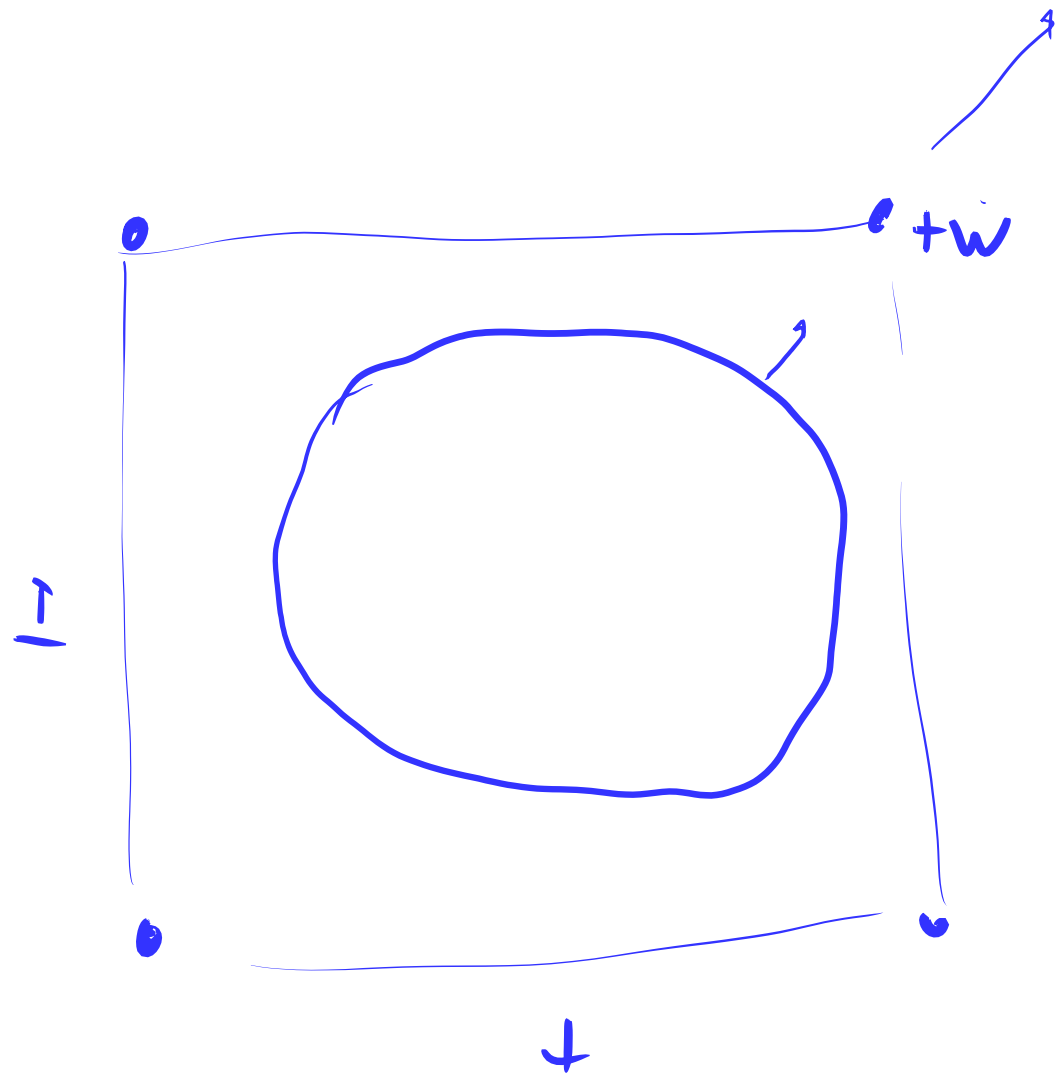


B-spline

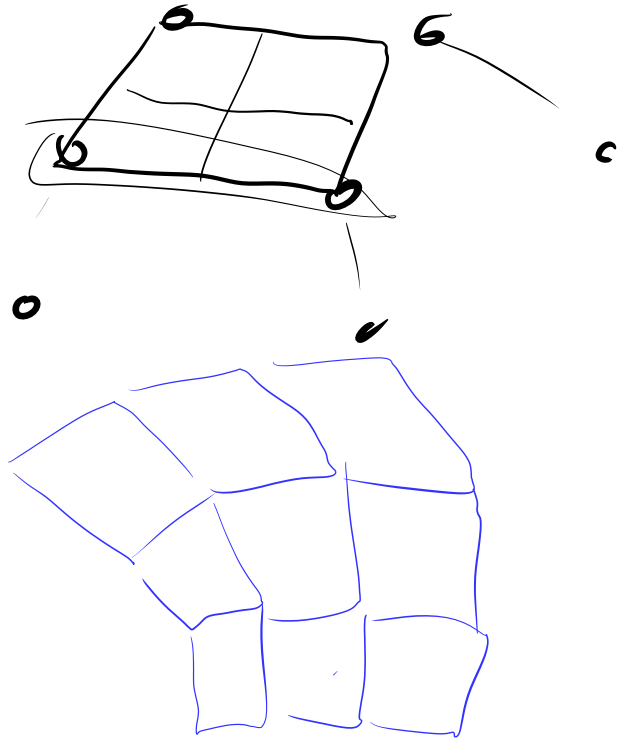
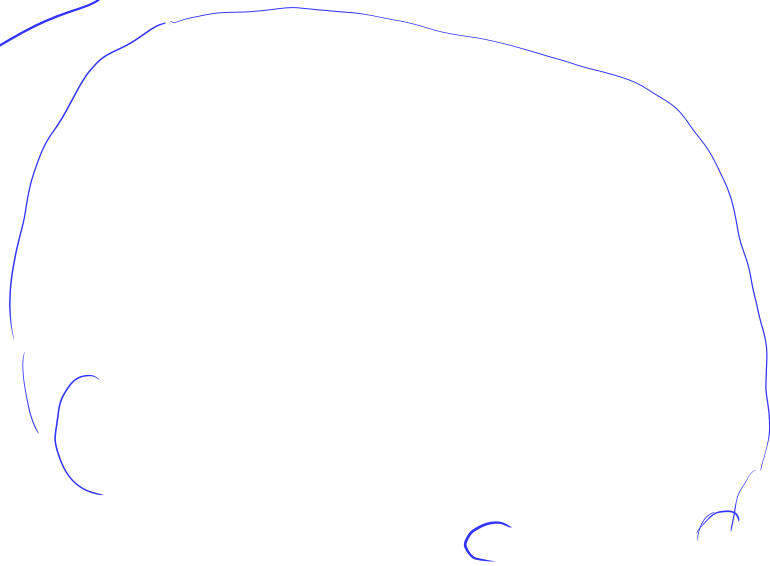
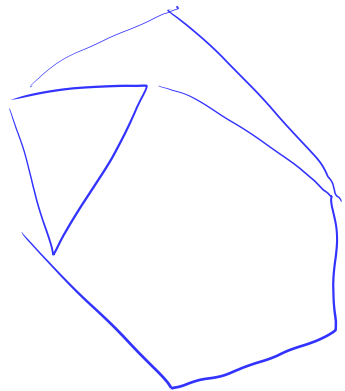
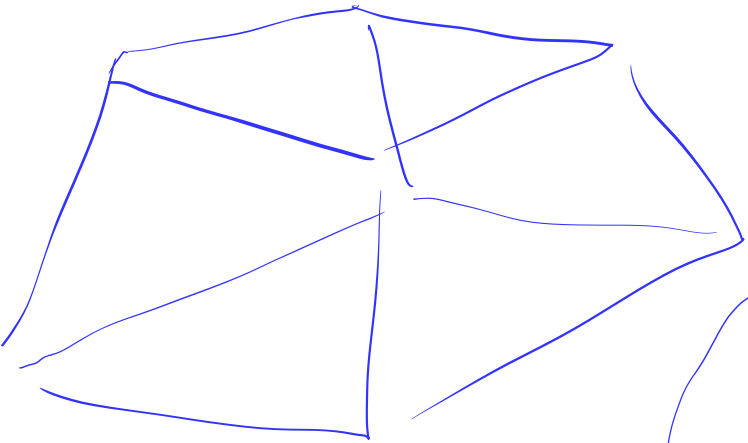


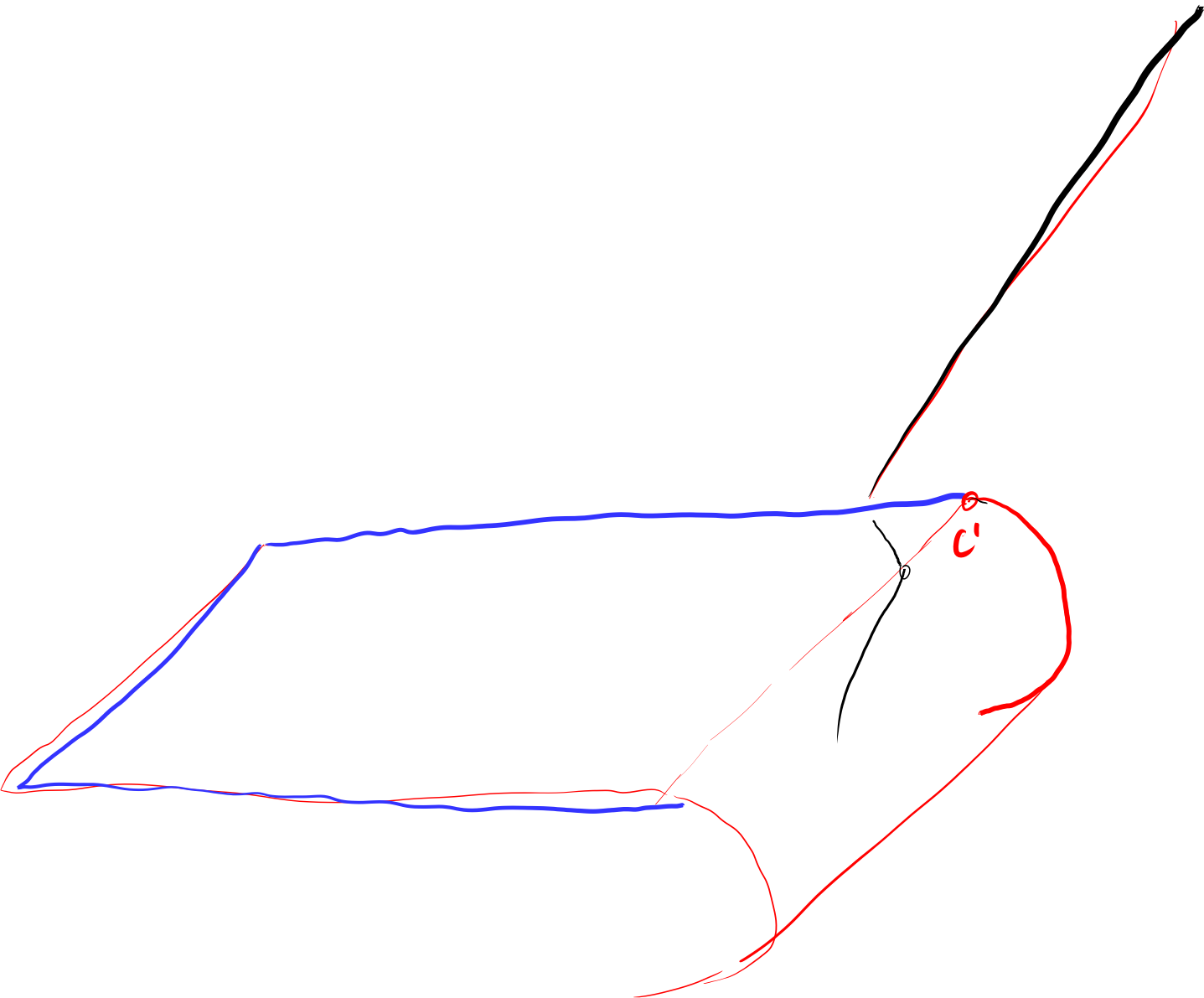
(x, y, w)

draw $\frac{x}{w}, \frac{y}{w}$



Subdivision surfaces





relectra redha curriam
by 1 level