

is called a Cremona transformation. One basic example of a Cremona transformation may be given as follows: let a, b, c be noncollinear points of \mathbb{P}^2 and $\tilde{\mathbb{P}}^2$ the blow-up of \mathbb{P}^2 at these three points. The proper transforms \tilde{L}_{ab} , \tilde{L}_{bc} , and \tilde{L}_{ac} of the lines \overline{ab} , \overline{bc} , and \overline{ac} are then disjoint rational curves of self-intersection -1 in $\tilde{\mathbb{P}}^2$, and may all be blown down. (See Figure 2.)

$$\begin{aligned} \tilde{\mathbb{P}}^2 \quad \tilde{L}_{ab} &= \pi^* \overline{ab} - E_a - E_b & \pi: \tilde{\mathbb{P}}^2 &\rightarrow \mathbb{P}^2 \\ \Rightarrow \tilde{L}_{ab} \cdot \tilde{L}_{ab} &= \pi^* \overline{ab} \cdot \pi^* \overline{ab} & E_c &= \pi^{-1}(c), E_a = \pi^{-1}(a), E_b = \pi^{-1}(b) \\ -2 &= 1 - 2 = -1. \end{aligned}$$

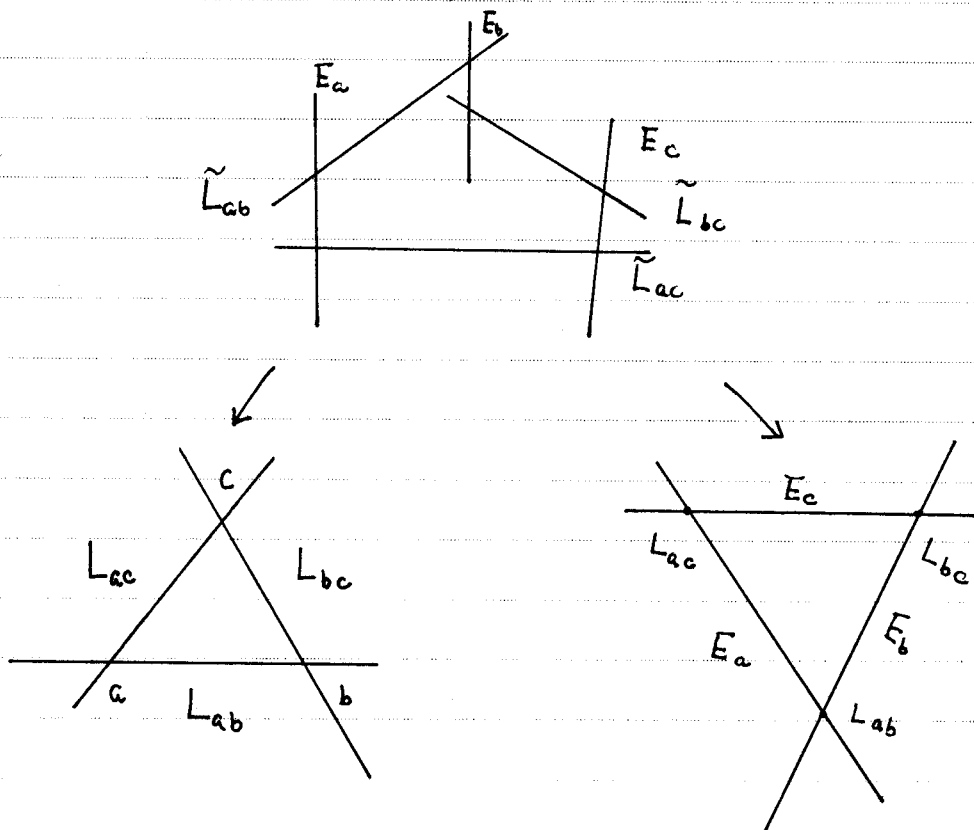


Figure 2