$$H^0(M, \mathcal{O}_M(L)) \longrightarrow H^0(V, \mathcal{O}_V(L))$$

was surjective, i.e., that $H^1(M, \mathcal{O}_M(L-V)) = 0$.

「

$$\begin{tikzcd}
 & H^0(M, \mathcal{O}_M(L)) \arrow[r] \arrow[d, "\text{onto}"'] & H^0(M, L_x \oplus L_y) \\
H^0(V, \mathcal{O}_V(L)) = & H^0(M, \mathcal{O}_V(L)) \arrow[ur, "\text{``onto'' should be proved}"'] \arrow[d] & \\
 & H^1(M, \mathcal{O}_M(L-V)) = 0 \ \text{(should be proved)} &
\end{tikzcd}$$

」

But this is very nearly presupposing the result to be proved: a priori, M need not have any divisors on it at all.

「 I think that they are talking about choosing a <u>smooth</u> hypersurface $V \ni x, y$, and $H^1(M, \mathcal{O}_M(L-V)) = 0$ i.e. M must have divisors satisfying some conditions.」

It is clear by now that our difficulty lies in the simple fact that, unless M is a Riemann surface, a point on M is not a divisor. We can overcome this problem by means of a beautiful classical construction called blowing up, which transforms points on a complex manifold into divisors.

Blowing Up.

We will first describe the blow-up of the origin in a disc Δ in $\mathbb{C}^n$. Let $z = (z_1, \cdots z_n)$ be Euclidean