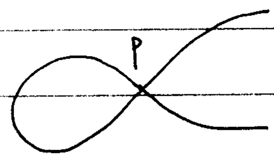
ducible ——— if V can not be written as the union of two analytic varieties $V_1, V_2 \subset U$ with $V_1, V_2 \neq V$; it is said to be irreducible at $p \in V$ if $V \cap U$ is irreducible for small nbd U' of p in U.

Consider two irreducible smooth analytic varieties V, V' s.t. $V \cap V' = \phi$. $\Rightarrow$ The union $V \cup V'$ is irreducible at every point $\in V \cup V'$, but it is reducible.
$\Rightarrow$ This tells us that local irreducibility has nothing to do with global irreducibility.
Consider the following variety



$\Rightarrow$ This variety is not reducible but at p, it is reducible.

Note first that if $f \in \mathcal{O}_n$ is irreducible in the ring $\mathcal{O}_n$, then the analytic hypersurface $V = \{f(z) = 0\}$ given by f in a nbd of 0 is irreducible at 0: if $V = V_1 \cup V_2$, with V_1, V_2 analytic varieties $\neq V$, then there exist $f_1, f_2 \in \mathcal{O}_n$ with f_1 (respectively f_2) vanishing identically on V_1 (respectively V_2) but not on V_2 (respectively V_1).

$V_1 = (f_1' = \cdots = f_k' = 0)$ $\Rightarrow$ $f = 0$ on V_1 $\Rightarrow$ By p11. Weak Nullstellen-satz, $f_i X_f$? notation $\Rightarrow$ Wrong direction!