hence that f and g are Weierstrass polynomials in z_n.

$\sqcap$ $\{z'=0\} = \{z_1 = \cdots = z_{n-1} = 0\}$.

Since $W \not\supset \{z'=0\}$, at least one of f & g does not contain $\{z'=0\}$, say f. Assume that $(g=0)$ contains $\{z'=0\}$. Consider $af + g = g'$, $a \neq 0$.

$\Rightarrow (g'=0) \not\supset \{z'=0\}$ And $\{af+g=0\} \cap \{g=0\}$
$= \{f=0\} \cap \{g=0\}$. $\Rightarrow$ By P8, f, g Weierstrass polys. ⌋

Let $\quad \gamma = \alpha f + \beta g \neq 0 \in \mathcal{O}_{n-1}$ be the result of f and g.

$\sqcap$ $f, g \in \mathcal{O}_{n-1}[z_n]$ since f, g are Weierstrass polynomials. By the fact we did not prove (P9),
$\exists$ relatively prime elements $\alpha, \beta \in \mathcal{O}_{n-1}[z_n]$, $\gamma \in \mathcal{O}_{n-1}$ s.t.

$$\alpha f + \beta g = \gamma \in \mathcal{O}_{n-1}.$$ ⌋

We claim that the image of W under the projection map $\pi : \mathbb{C}^n \longrightarrow \mathbb{C}^{n-1}$ is just the locus of γ. To see this, write

$$\alpha = hg + r$$

with the degree of r strictly less than the degree of g. Then $\gamma = rf + (\beta + hf)g$.

Now, if, for some z in $\mathbb{C}^{n-1}$, γ vanishes at z but f and g have no common zeros along the line $\pi^{-1}(z)$,