subvalued primes.

Proof of Proposition 2. Let x be a non zero non unit in an HCF domain R and suppose that x is expressible as

$x = x_1 x_2 \ldots x_n$; x_i are packets and $(x_i, x_j) = 1, i \neq j$---(A).

Further suppose that x is also expressible as

$x = y_1 y_2 \ldots y_m$; y_j are packets and $(y_j, y_k) = 1$, $j \neq k$ ---(B).

Now $x_1 | y_1 y_2 \ldots y_m$, implies that $x_1 = x_{11} x_{12}$ such that $x_{11} | y_1$ and $x_{12} | y_2 y_3 \ldots y_m$. But since $(y_1, y_2 y_3 \ldots y_m) = 1$, either x_{11} is a unit or x_{12} is (cf Def.4). In other words $x_1 | y_1$ or $x_1 | y_2 y_3 \ldots y_m$, and proceeding in this manner we can show that there exists only one y_j such that $x_1 | y_j$. Reversing the process and considering $y_j | x_1 x_2 \ldots x_n$ and using the definition of a packet as above, we conclude that there exists an x_k such that $y_j | x_k$. Moreover $x_1 | y_j$ and $y_j | x_k$ implies that $x_1 | x_k$ i.e. $k = 1$ (since if $k \neq 1$ then $(x_k, x_1) = 1$ a contradiction) and obviously for each $x_i | x$ in (A) there exists a $y_j | x$ in expression (B) such that x_i is an associate of y_j. And consequently $n = m$ and the factorizations (A) and (B) are unique up to associates and a suitable permutation of the packets.

Definition 5. An HCF domain R will be called a <u>Unique Representation Domain</u> if every non zero non unit of R is expressible as the product of a finite number of mutually co-prime packets.

Now to show that a URD is not necessarily an HCF ring of Krull type we put forward the following

Example 1. Let R be a PID, K its field of fractions and let x be an indeterminate over R. The integral domain

$S = R + xK[x]$; called the <u>almost integral closure</u> of R (cf [24] page 9) is a Bezout domain.