Proof of Th 5.2.

Need a Corollary to Lemma 5.1.

to say that if the distn of $P_{Y|X}(y|x)$ does not depend on x.

then ...

and if $Y|X \perp\!\!\!\perp Z_k$.

then $Y|f(x) \perp\!\!\!\perp K$.

whenever $Y \perp\!\!\!\perp K$!! $P_{X,Y}(x,y) = P_{Y|X}(y|x) P_X(x)$

ie as $I = f(x)$ is a function $= h(y) P_X(x)$

and $Y|I = Y$. so $X \perp\!\!\!\perp Y$