1) Let $L\{\tau\}$ be the twisted polynomial ring in which $\tau \ell = \ell^p \tau$ for each $\ell \in L$. 
   (a) Prove that $L\{\tau\}$ has a right division algorithm: given $f, g \in L\{\tau\}$ with $g \neq 0$, prove 
   that there exists a unique pair of elements $q, r \in L\{\tau\}$ such that $f = qg + r$ and such 
   that $\deg r < \deg g$.
   (b) Does $L\{\tau\}$ also have a left division algorithm?

2) Let $A = \mathbb{F}_p[T]$, and let $L$ be an $A$-field. A rank 2 Drinfeld $A$-module $\phi$ over $L$ is uniquely 
   determined by the $a, b \in L$ (with $b \neq 0$) such that $\phi_T = T + a\tau + b\tau^2$.
   (a) In terms of $(a, b)$, describe $\text{Aut} \phi$.
   (b) Define $j(\phi) = a^{p+1}/b$. Prove that for an algebraically closed $A$-field $L$, two rank 2 
   Drinfeld $A$-modules over $L$ are isomorphic if and only if they have the same $j$-invariant.

3) Let $X$ be any smooth projective geometrically integral curve, let $\infty$ be a closed point of 
   $X$, and let $A = \mathcal{O}(X - \{\infty\})$. Let $R$ be an $A$-discrete valuation ring, and let $L = \text{Frac} R$. 
   Let $\phi$ be a rank 1 Drinfeld $A$-module over $L$ such that there exists a nonconstant $a \in A$ 
   such that the leading coefficient of $\phi_a$ is in $R^\times$. Prove that $\phi$ has good reduction.