

## Speeding-up general pairings



### general notice

Computing pairings fast is quite technical.  
Better suited for papers than slides



### core idea

For  $P \in E(\mathbb{F}_p)$  and  $Q \in E'(\mathbb{F}_p)$ ,  
don't use curve arithmetic  
but pairing  $e(P, Q)$  to get  
overlap in orders!



### general approach

Instead I describe the general approach,  
and leave all details out

0

take some literature

1

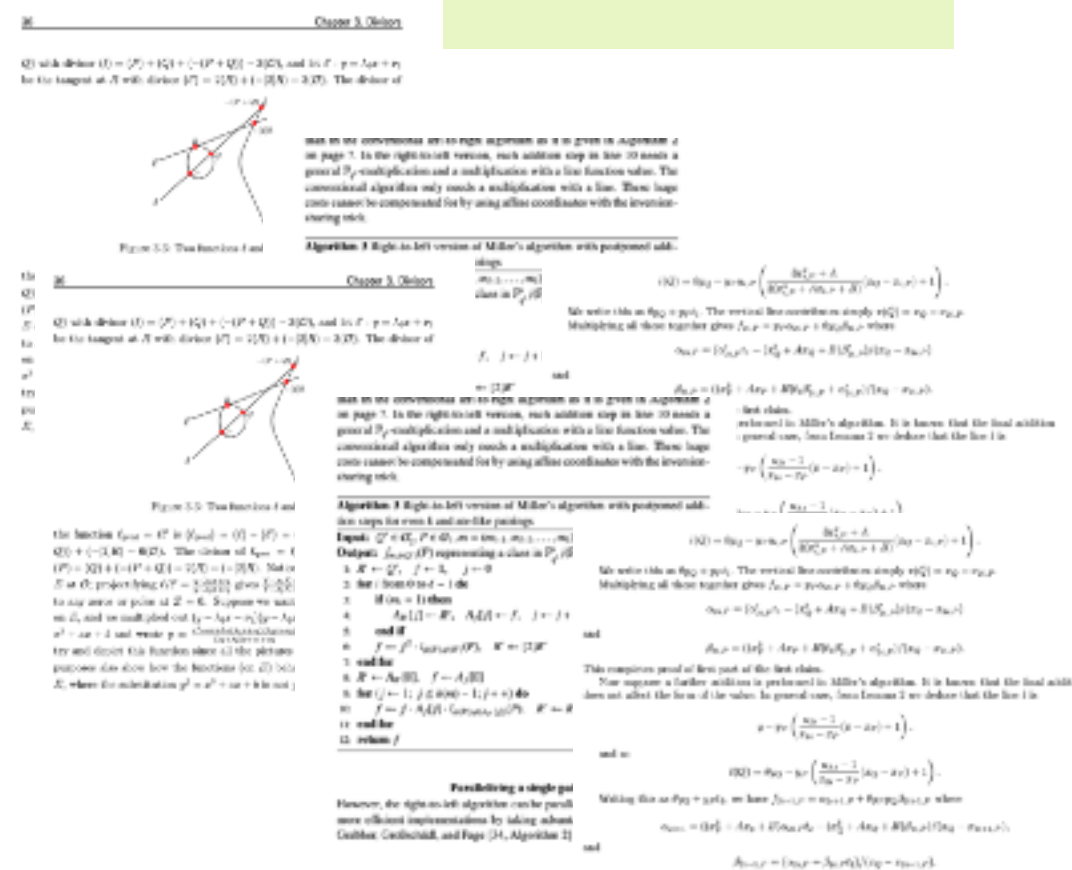
implement all tricks  
that apply

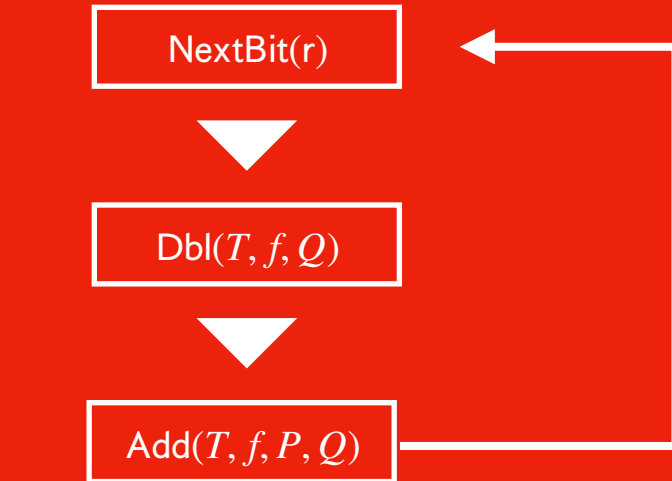
2

benchmark speed  
and finetune

3

fast pairings





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