One way

This function is hard to invert...

2-Regular

2 preimages for all elements in $Im(f_k)$

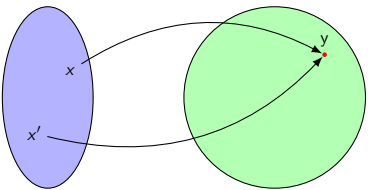
Post Quantum

Resistant against quantum computer.

Function $\{f_k\}$

Trapdoor

...except if you have the trapdoor t_k associated to the function index k.



Collision resistant

Without trapdoor t_k, hard to find $x \neq x'$ such that $f_k(x) = f_k(x')$

One way

This function is hard to invert...

2-Regular

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Post Quantum

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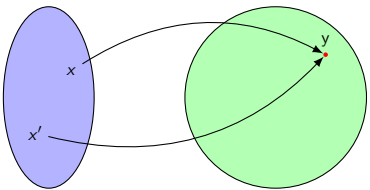
Function $\{f_k\}$ $\Rightarrow$ Candidate based on [MP11]

Trapdoor

...except if you have the trapdoor t_k associated to the function index k.



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