a) trace out system B and obtain ρ_A

hint: label the matrix ρ_{AB} as

	$\|00\rangle$	$\|01\rangle$	$\|10\rangle$	$\|11\rangle$
$\langle 00\|$	.	.	.	.
$\langle 01\|$	.	.	.	.
$\langle 10\|$	.	.	.	.
$\langle 11\|$	.	.	.	.

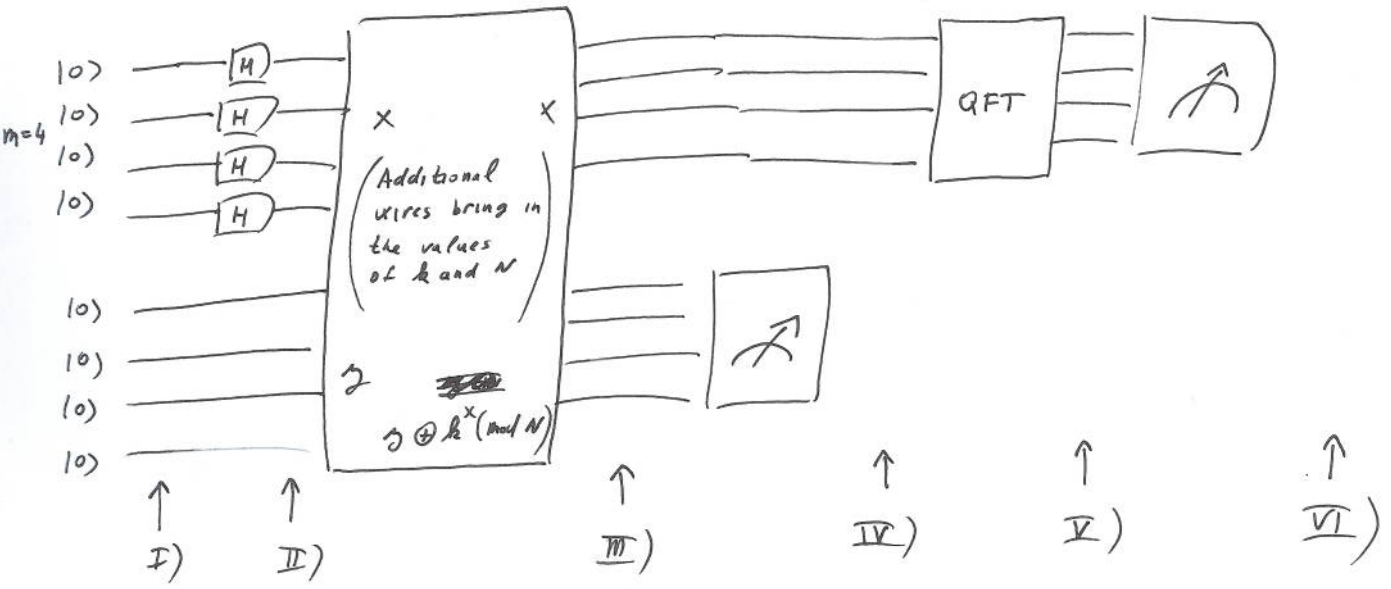
b) Let $|\psi\rangle = \frac{1}{\sqrt{2}}(|00\rangle + |11\rangle)$, $\rho_A = ?$

(A B A B)

c) Let $|\psi\rangle' = (H \otimes I)|\psi\rangle$. $|\psi\rangle'$, $\rho_A = ?$

3) Factoring

$N = 15$, $k = 7$, $m = 4$ k, N coprimes



I) $|0,0\rangle$ in decimal notation

II) $\sum_{x=0}^{2^m-1=15} |x,0\rangle$ $\quad 0 \leq x \leq N$ full coverage for the search of the order of k

III) $\sum_{x=0}^{15} |x, k^x \pmod N\rangle$