

FIGURES

[from left to right]

1-qubit gates

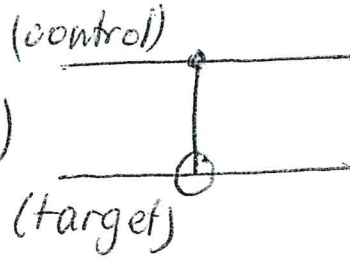
• Hadamard gate $\text{---} \boxed{H} \text{---}$

• X-gate (NOT-gate) $\text{---} \boxed{X} \text{---}$; Z-gate $\text{---} \boxed{Z} \text{---}$

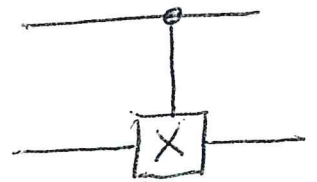
$\therefore Y = ZX : \text{---} \boxed{X} \text{---} \boxed{Z} \text{---} \Rightarrow \begin{bmatrix} Y_{107} = -117 \\ Y_{117} = 10 \end{bmatrix}$

2-qubit gates

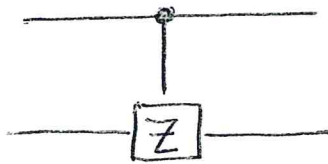
CNOT-gate (or CX-gate)



or

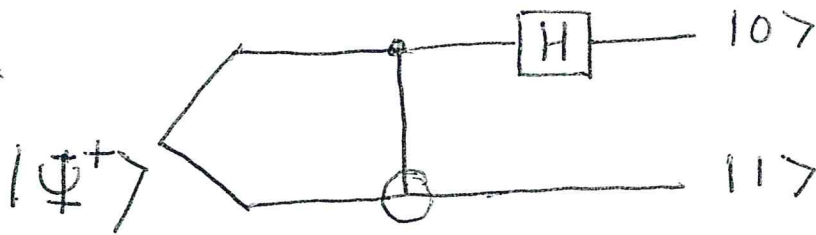


CZ-gate



Rotation of bases : Bell basis $\longleftrightarrow$ computational basis

e.g.



Quantum teleportation

