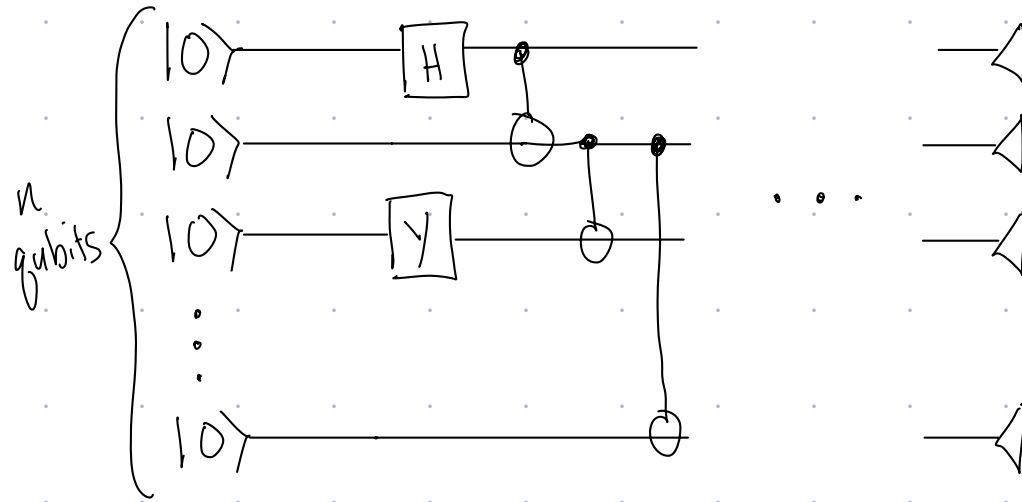


Many-Qubit Circuits

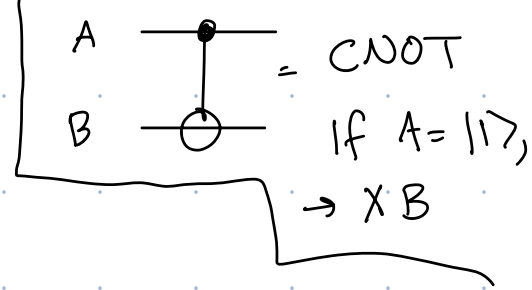
Learning Goals

- Describe multiqubit algorithms using circuits + kets

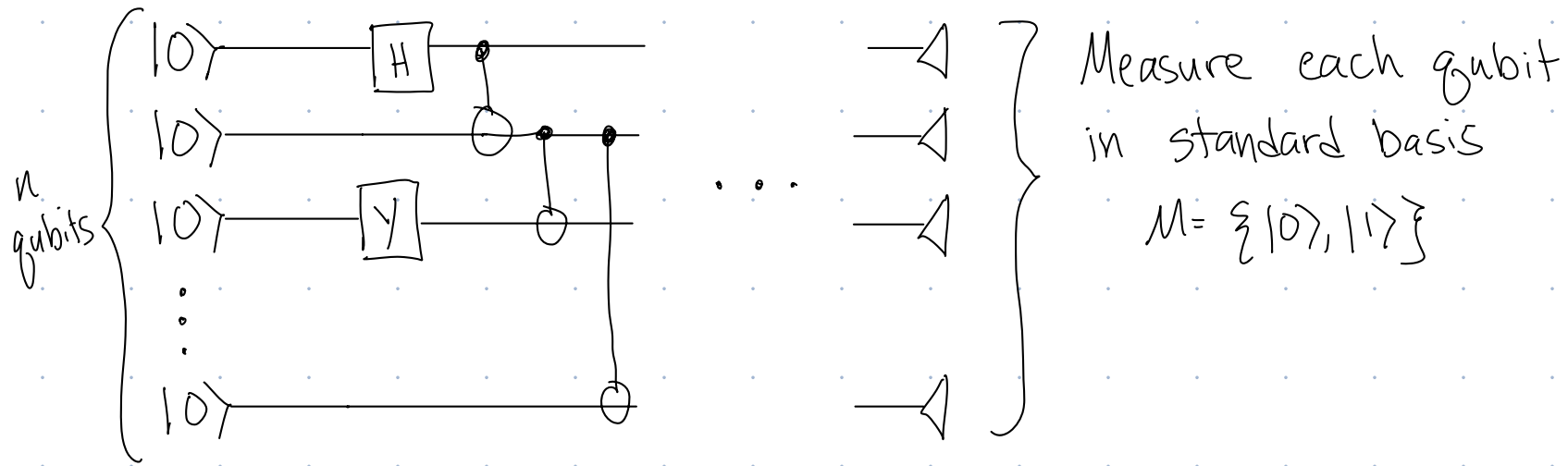
Multigubit Circuit



Physically:



Multigubit Circuit



$$|\psi_1\rangle =$$

At the end of the algorithm, state can be written as

$$|\psi_1\rangle =$$

For n qubits, 2^n standard basis states. Can't write all

Representing + Measuring n -qubit States

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•

Universal Gate Set

- Classically,

- Quantumly

def :

T

$$|0\rangle \rightarrow |0\rangle$$

$$|1\rangle \rightarrow e^{i\pi/4}|1\rangle$$

e.g.