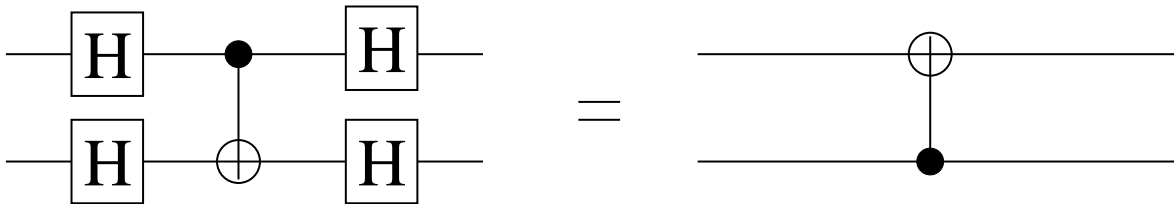


Nanophysics — Fall 2017

Exercise 3

(1) **Quantum circuits**

Show that:



(2) **Controlled operations**

Consider a controlled operation with a NOT gate being performed on the second qubit, conditional on the first qubit being set to zero. This is shown below, by the circuit on the left hand side. Show that

