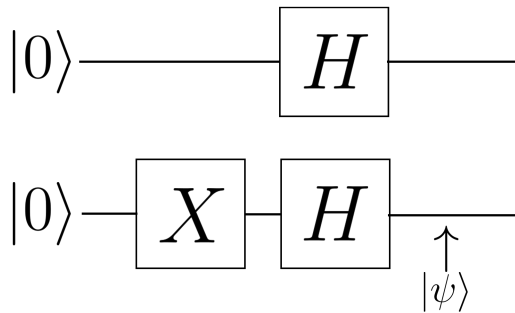


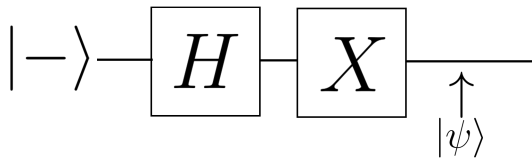
2.2 Introduction to Quantum Circuits

1. In the quantum circuits below, find the state $|\psi\rangle$

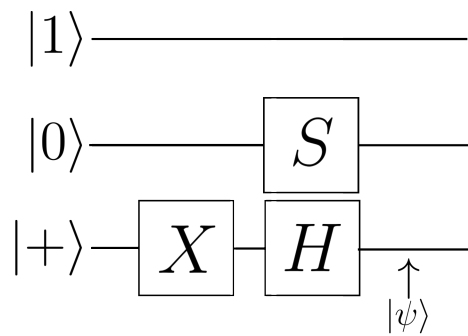
(a)



(b)



(c)



Answers

1.

(a) $|\psi\rangle = |+\rangle \otimes |-\rangle$ or expanding, $|\psi\rangle = \frac{1}{2} \left(|00\rangle - |01\rangle + |10\rangle - |11\rangle \right)$

(b) $|\psi\rangle = |0\rangle$

(c) $|\psi\rangle = |100\rangle$