MAT3420 2024, Exercises week 8 (for Friday 23 February)

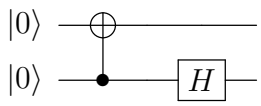
Exercise 1. Exercise 4.2.6 in [1].

Exercise 2. Exercise 4.2.7 in [1].

Exercise 3. Exercise 4.3.1 in [1].

Exercise 4. Exercise 5.2.1 in [1].

Exercise 5. Compute the effect of the circuit



Then repeat this with input states $|01\rangle, |10\rangle, |11\rangle$. Note that here, the control qubit is on the bottom (second) wire and the target is on the top wire.

References

[1] P. Kaye, R. Laflamme and M. Mosca, An Introduction to Quantum Computing, Oxford University Press, 2007.