COL863: Quantum Computation and Information
Homework: 02

1. Exercises from the book: 2.2, 2.3, 2.4, 2.7, 2.8, 2.9, 2.10, 2.11, 2.12, 2.13, 2.14, 2.15, 2.16, 2.17, 2.18, 2.19, 2.20, 2.22, 2.23, 2.24, 2.25, 2.26, 2.27, 2.28, 2.29, 2.30, 2.31, 2.32, 2.33, 2.34, 2.57.

2. Exercise 2.64: Suppose Bob is given a quantum state chosen from a set $|\psi_1\rangle, |\psi_2\rangle, ..., |\psi_m\rangle$ of linearly independent states. Construct a POVM $\{E_1, E_2, ..., E_{m+1}\}$ such that if outcome E_i occurs, $1 \leq i \leq m$, then Bob knows with certainty that he was given the state $|\psi_i\rangle$.