Building and understanding gates

<https://en.wikipedia.org/wiki/Quantum_logic_gate>

Write down the matrix representation

1. X gate
2. Y gate
3. Z gate

Bloch sphere (in computational basis), write down the matrix representation

1. |0>
2. |1>

Performing operations. Write the matrix representation

1. X^2
2. Y^2
3. Z^2

Entangling 2 qubits – write matrix representation

1. CNOT
2. |00>
3. |01>
4. |10>
5. |11>