EXPERIMENT CHEATSHEET

Gate	Applying to states $\|0\rangle$ and $\|1\rangle$	Applying to states $\|+\rangle$ and $\|-\rangle$	Applying to states $\|i\rangle$ and $\|-i\rangle$
Pauli-X gate	$X\|0\rangle = \|1\rangle$ $X\|1\rangle = \|0\rangle$	$X\|+\rangle = \|+\rangle$ $X\|-\rangle = \|-\rangle$	$X\|i\rangle = i\|-i\rangle$ $X\|-i\rangle = -i\|i\rangle$
Pauli-Y gate	$Y\|0\rangle = i\|1\rangle$ $Y\|1\rangle = -i\|0\rangle$	$Y\|+\rangle = -i\|-\rangle$ $Y\|-\rangle = i\|+\rangle$	$Y\|i\rangle = \|i\rangle$ $Y\|-i\rangle = -\|-i\rangle$
Pauli-Z gate	$Z\|0\rangle = \|0\rangle$ $Z\|1\rangle = -\|1\rangle$	$Z\|+\rangle = \|-\rangle$ $Z\|-\rangle = \|+\rangle$	$Z\|i\rangle = \|-i\rangle$ $Z\|-i\rangle = \|i\rangle$
Hadamard gate	$H\|0\rangle = \|+\rangle$ $H\|1\rangle = \|-\rangle$	$H\|+\rangle = \|0\rangle$ $H\|-\rangle = \|1\rangle$	$H\|i\rangle = e^{i\pi/4}\|-i\rangle$ $H\|-i\rangle = e^{-i\pi/4}\|i$
S gate	$S\|0\rangle = \|0\rangle$ $S\|1\rangle = i\|1\rangle$	$S\|+\rangle = \|i$ $S\|-\rangle = \|-i\rangle$	$S\|i\rangle = \|-\rangle$ $S\|-i\rangle = \|+\rangle$
T gate	$T\|0\rangle = \|0\rangle$ $T\|1\rangle = e^{i\pi/4}\|1\rangle$	$T\|+\rangle = \frac{1}{\sqrt{2}}(\|0\rangle + e^{i\pi/4}\|1\rangle)$ $T\|-\rangle = \frac{1}{\sqrt{2}}(\|0\rangle - e^{i\pi/4}\|1\rangle)$	
RX(θ) gate	$RX(\theta)\|0\rangle = \cos(\frac{\theta}{2})\|0\rangle - i\sin(\frac{\theta}{2})\|1\rangle$ $RX(\theta)\|1\rangle = \cos(\frac{\theta}{2})\|1\rangle - i\sin(\frac{\theta}{2})\|0\rangle$		
RY(θ) gate	$RY(\theta)\|0\rangle = \cos(\frac{\theta}{2})\|0\rangle + \sin(\frac{\theta}{2})\|1\rangle$ $RX(\theta)\|1\rangle = \cos(\frac{\theta}{2})\|1\rangle - \sin(\frac{\theta}{2})\|0\rangle$		
RZ(θ) gate	$RZ(\theta)\|0\rangle = e^{-i\theta/2}\|0\rangle$ $RX\|1\rangle =$ $RZ(\theta)\|1\rangle = e^{i\theta/2}\|1\rangle$		
R1(θ) gate	$R1(\theta)\|0\rangle = \|0\rangle$ $R1(\theta)\|1\rangle = e^{i\theta}\|1\rangle$		