Phase Estimation

- **Description.** It turns out that the quantum phase estimation algorithm does not always work. In practice, we would want to run this sensor many times, and then use statistics to infer the correct answer from this data. Since we do not have access to an NV center, we will instead use the simulator to infer the most likely answer. Using the circuit you have already created in Quirk, use the probabilities provided to guess what the measurement outcomes should be. This will give you three numbers: a, b, and c. For example, if the measurement probabilities are 75%, 10%, and 100%, then we could guess that $a = 1$, $b = 0$, and $c = 1$. Using these numbers, we can then estimate the angle θ after one second of sensing. The answer is given by the following equation.

$$\theta = \frac{2\pi}{4a + 2b + c}$$

Using this equation, find your estimate for θ.

- **Submission.** A screenshot of the circuit simulator, a few sentences explaining how you estimated the three outputs, and your estimate for θ.