## Question 2

If we turn the potentiometer counter-clockwise, the $t_{\text{fall}}$ will actually increase, which means that the $t_{\text{fall}} = 2.2R_1C$, $R_1$ increased.

## Question 3

Max: 100%

Min: 0%

## Question 4

Max: Almost 100%

Min: Almost 0%

It matches with the expectation. In two extreme cases. When $R_1 = 0\Omega$, and $R_2 = 100k\Omega$, the $t_{\text{fall}} \approx 0s$, and duty cycle is 100%, and when $R_2 = 0\Omega$, $R_1 = 100k\Omega$, the $t_{\text{rise}} \approx 0s$, and the duty cycle is 0%.

## Question 5

When duty cycle is around 50%, the LED is quickly blinking. When it's close to $0\Omega$, the LED's light is very dim. When it's close to 100%, the LED looks identical as if it's just powered normally by a battery.