1. Question 1
    1.1. $2^{bits} = 2^8 = 256$

    From the data the max value Is 244 and the min value is 14 this would require 244 discrete values. This value is grater that $2^{bits} = 2^7 = 128$ and less than $2^{bits} = 2^8 = 256$.

    There for we need 256 discrete values of resolution.

    1.2.

    Period of input

    $T = \frac{1}{f} = \frac{1}{500} = 0{,}002\ seconds$

    Slope of input ramp

    $m = \frac{\Delta y}{\Delta x} = \frac{2{,}5}{0{,}002} = 1250 \quad \frac{V}{s}$

    Calculating the step pe second

    $\frac{V_{finale\ on\ slop} - V_{initial\ on\ slope}}{n_{finale\ on\ slop} - n_{inital\ on\ slope}} = \frac{183-66}{(1000-66)\times 10^{-6}} = 125267{,}66$

    Solving for Q or V/step

    $Q = \frac{1250}{125267{,}66} \frac{\frac{v}{s}}{\frac{steps}{s}} = 0{,}01\ v$

2. Question 2
    2.1. This is the binary output at 0 times the quantizing resolution.

    $$averag\ value\ recred\ from\ graf \times Q = dc\ ofset$$

    $$15 \times 10mV = 150mV$$

    2.2. The highest peak value is 26dB
    The second highest peak value is 5 dB
    There for.
    It is in a dB scale there for there for SFDR =highest peak – second peak= 26 -5 = 21 dB SFDR.

3. Question 3
    3.1. Frequency is how often a full wave repeats/occurs. Duty cycle is how much of one period is the wave HIGH.
    3.2. Duty Cycle

3.3. We cannot interpret changes in light that fast so we just take the average value of the light over time as its brightness, which means PWMing the light can effectively change its brightness we perceive.

3.4.