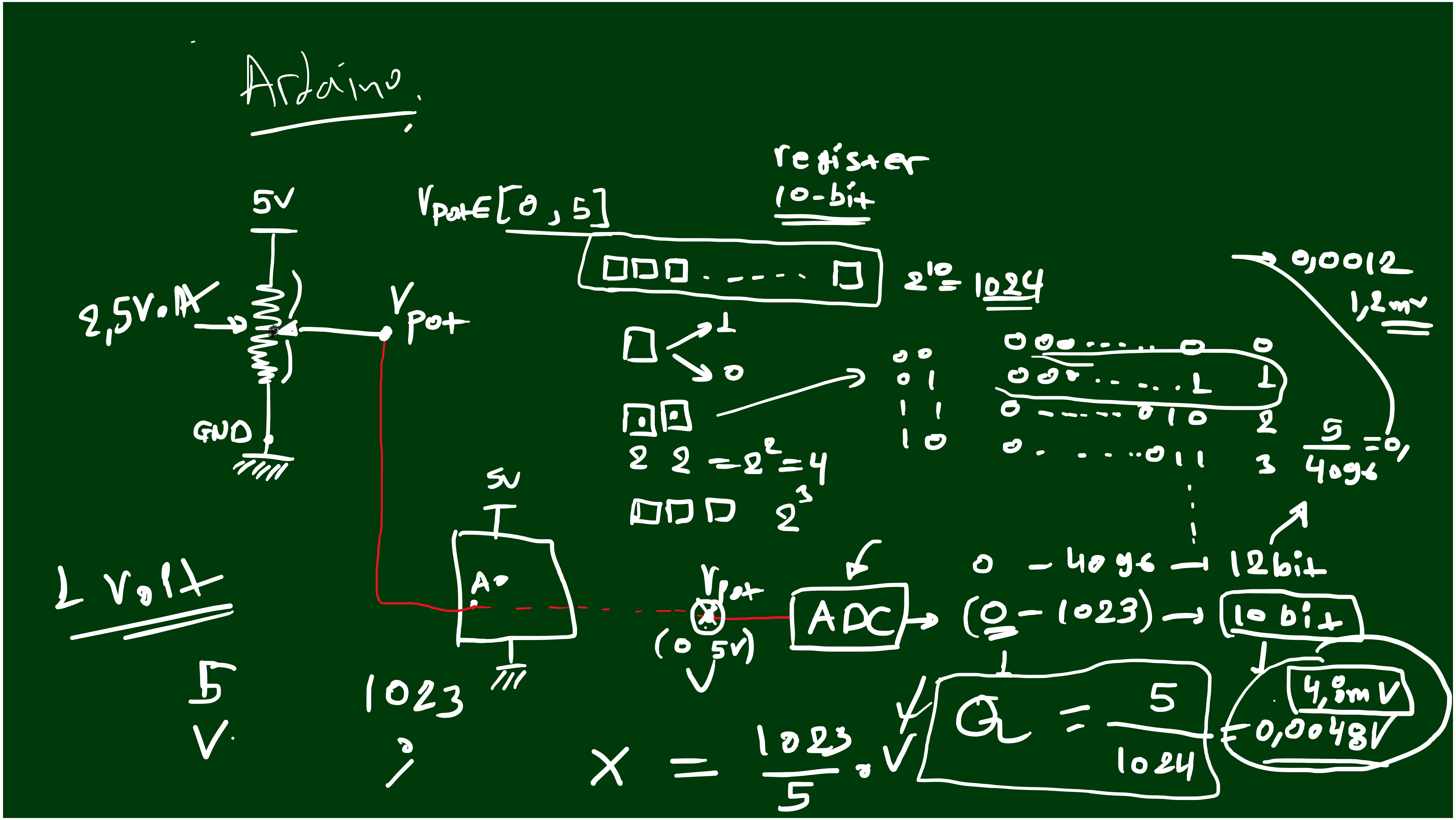
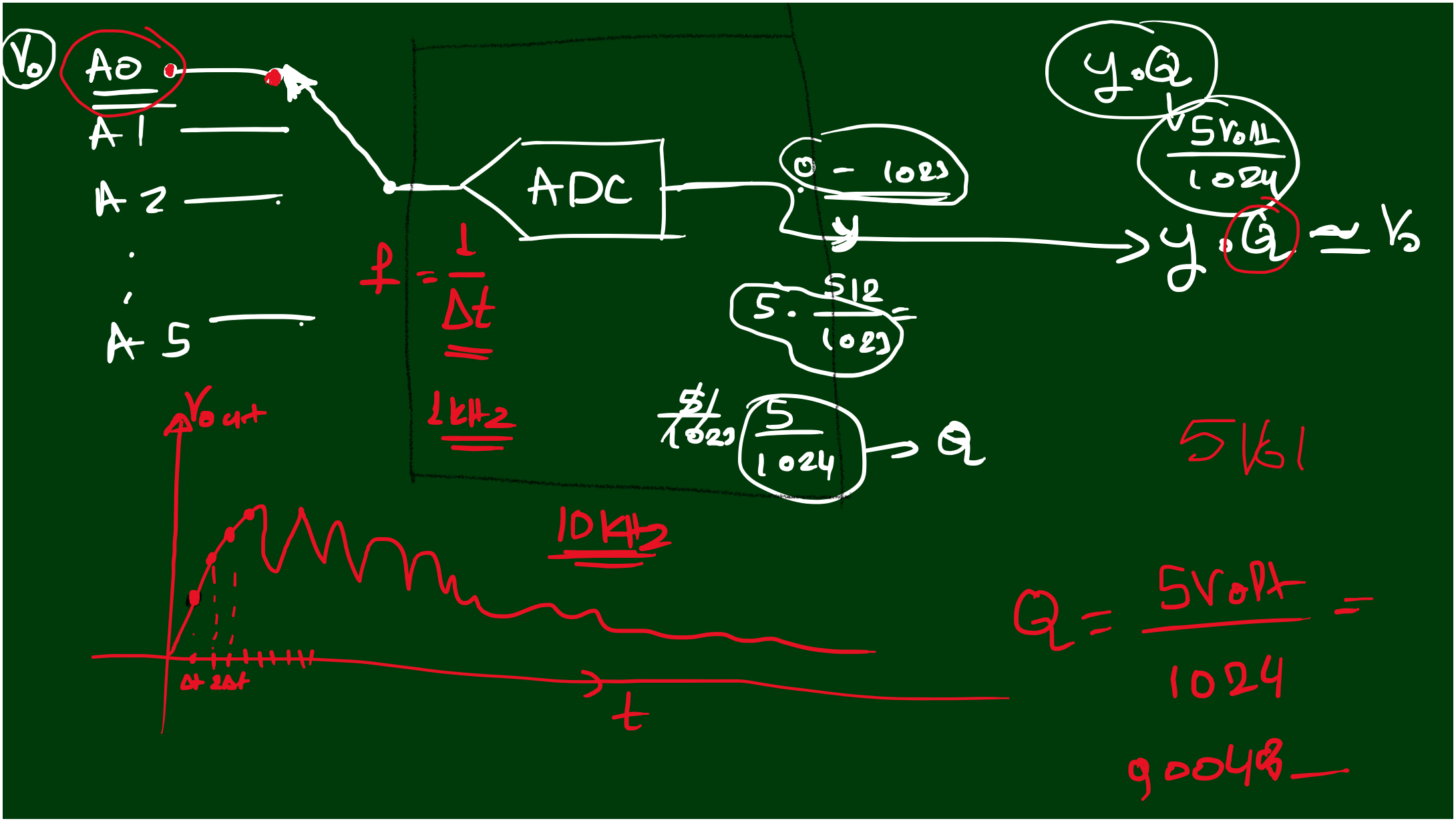
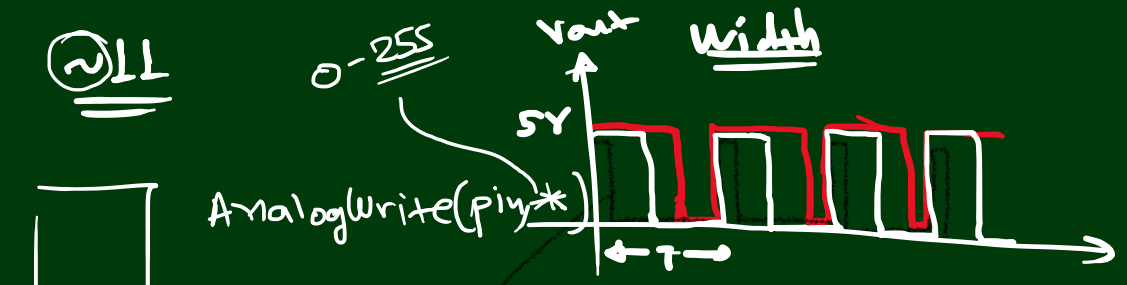


Arduino
5V
2,5V
GND
Vpot
Vpot ∈ [0 , 5]
register
10-bit
2^10 = 1024
2 2 = 2^2 = 4
2^3
0,0012
1,2mv
5/4096 = 0,
5V
A0
Vpot
(0 5V)
ADC
0 - 4096 → 12bit
(0 - 1023) → 10 bit
Q = 5/1024
4,8mV
0,0048V
1 Volt
5
V
1023
X = 1023/5 · V


V_0
A0
A1
A2
A5
ADC
$f = \frac{1}{\Delta t}$
1kHz
0 - 1023
y.Q
$\frac{5 V_{olt}}{1024}$
$y.Q \simeq V_0$
$5 : \frac{5}{1023} =$
$\frac{5}{1023}$ $\frac{5}{1024}$ → Q
V_{Out}
10KHz
Δt $2\Delta t$
t
5Volt
$Q = \frac{5 V_{olt}}{1024} =$
0.0048

PWM



$$Dutycycle = \frac{t_{on}}{T}$$

$$T = t_{on} + t_{off}$$

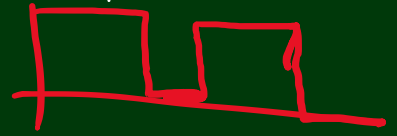
$$Duty\ cycle = \frac{t_{on}}{T} \cdot 100\%$$

8bit → 256 (0-255)

$t_{on} = t_{off}$

PWM = 50%

$\hat{T} = \hat{t}_{on} + \hat{t}_{off}$



$Duty\ cicle = \frac{t_{on}}{T} = 25\%$

2,5V.H

25%

0,25.5 = 1,25Volt