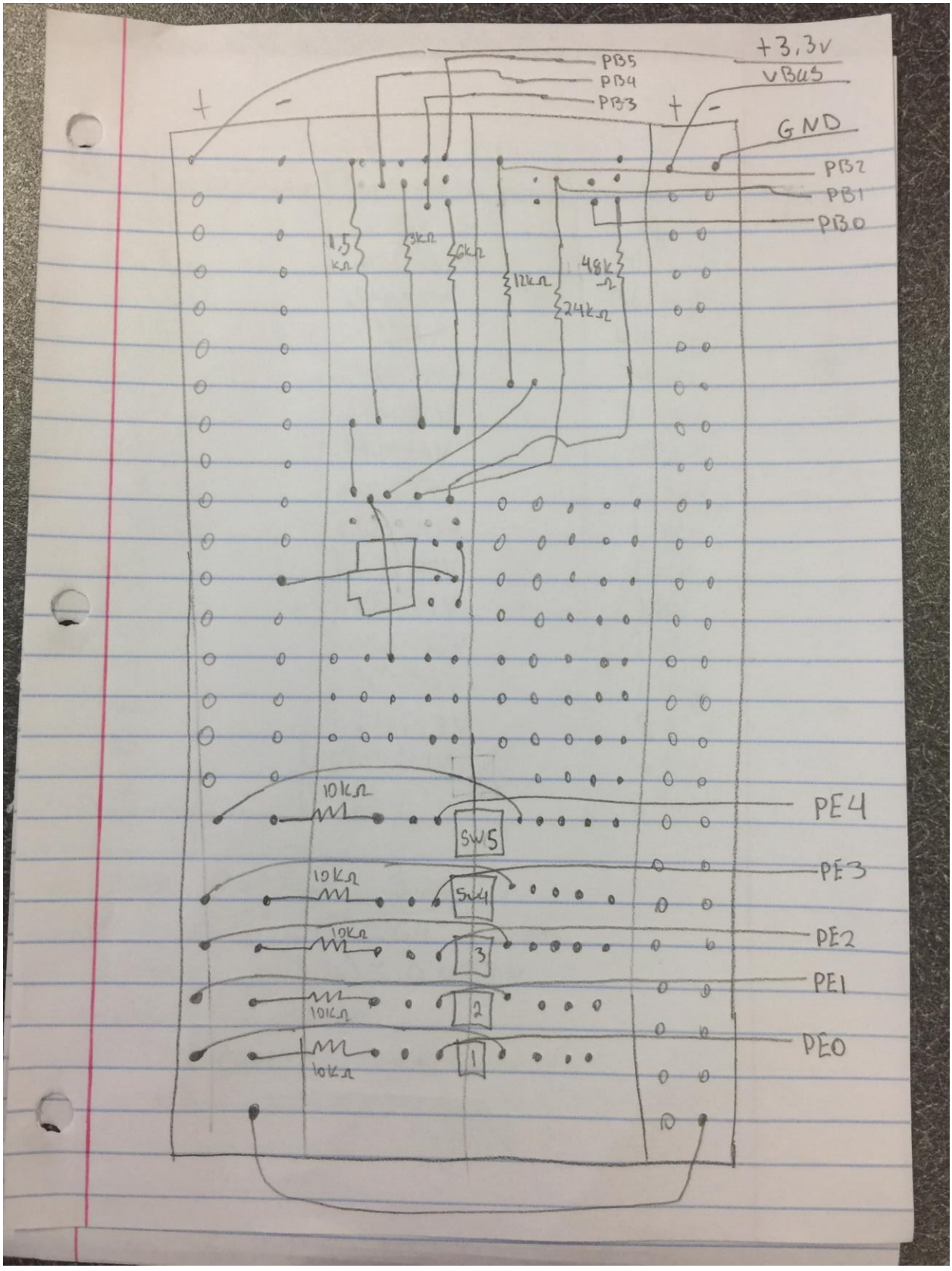
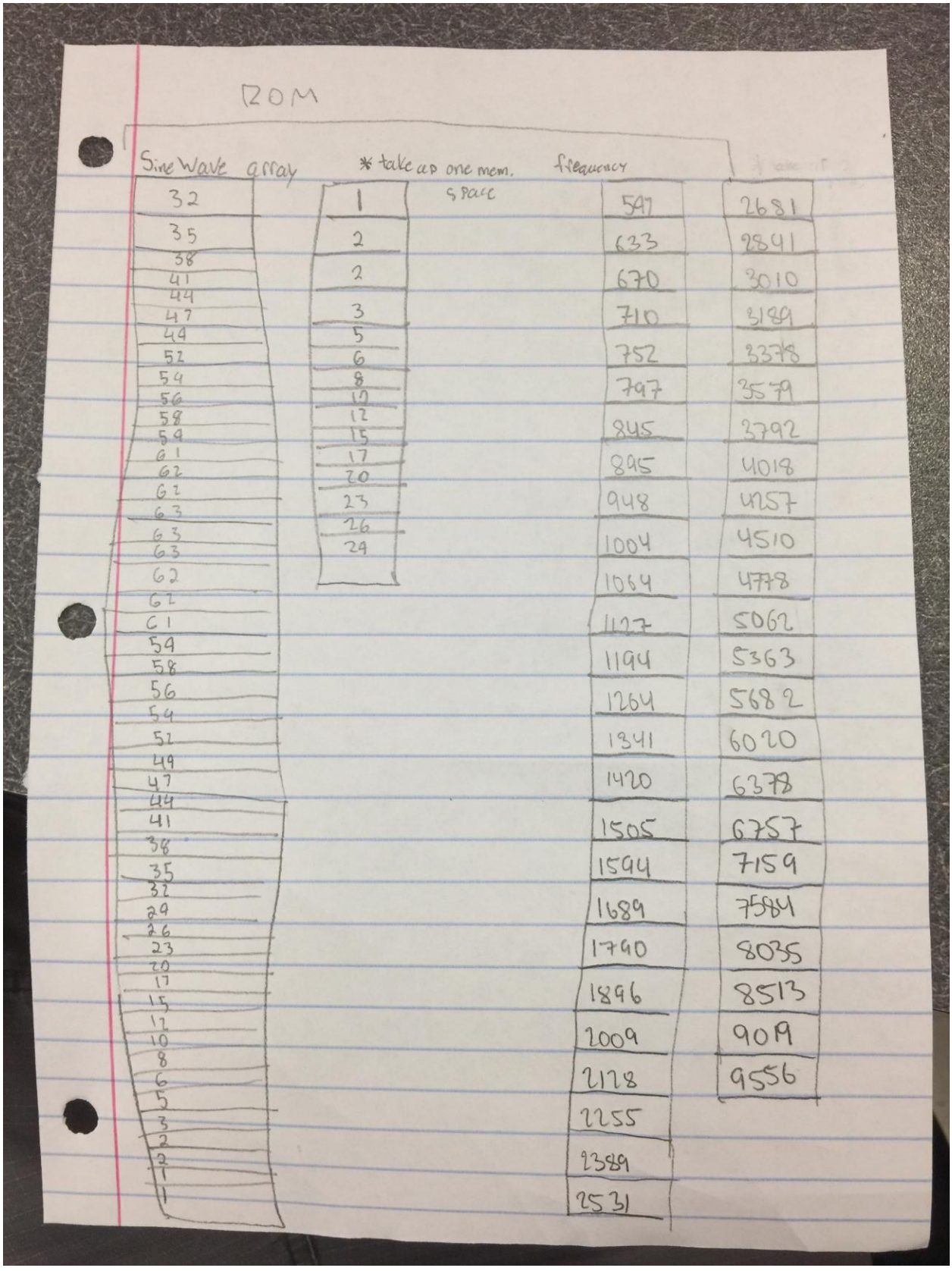
1.)


+3.3V
VBUS
PB5
PB4
PB3
GND
PB2
PB1
PB0
1.5 kΩ
3kΩ
6kΩ
12kΩ
24kΩ
48kΩ
10kΩ
SW5
SW4
3
2
1
PE4
PE3
PE2
PE1
PE0

2.)


ROM
Sine Wave array
* take up one mem. space
frequency
32 35 38 41 44 47 49 52 54 56 58 59 61 62 62 63 63 63 62 62 61 59 58 56 54 52 49 47 44 41 38 35 32 29 26 23 20 17 15 12 10 8 6 5 3 2 2 1 1
1 2 2 3 5 6 8 10 12 15 17 20 23 26 29
597 633 670 710 752 797 845 895 948 1004 1064 1127 1194 1264 1341 1420 1505 1594 1689 1790 1896 2009 2128 2255 2389 2531
2681 2841 3010 3189 3378 3579 3792 4018 4257 4510 4778 5062 5363 5682 6020 6378 6757 7159 7584 8035 8513 9019 9556

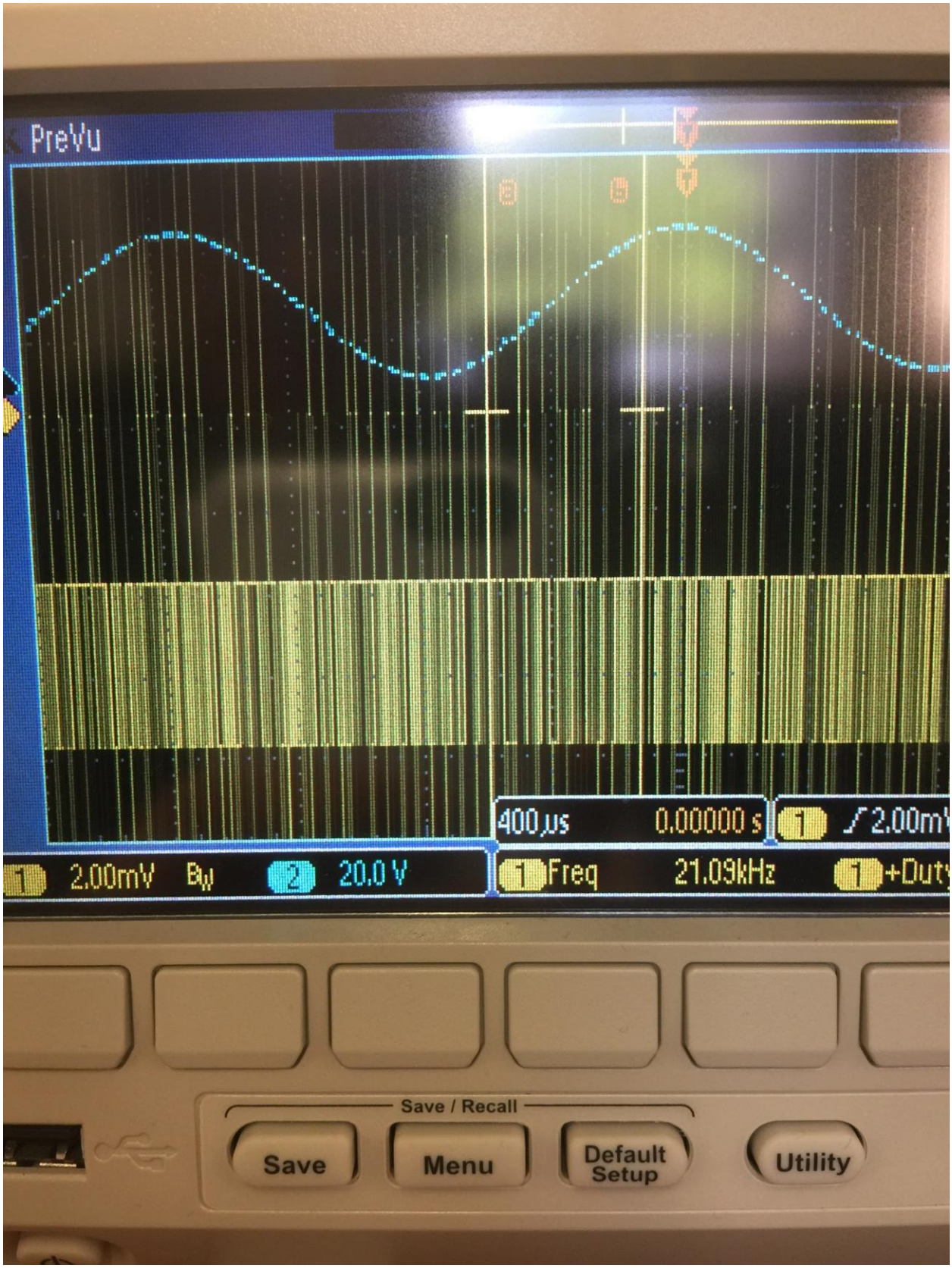
Struct Song irony [57]

2531	1689	1896
0x011E8CCC	0x011E8CCC	0x011E8CCC
1265	1896	1689
0x011E000	0x011E8CCC	0x011E8CCC
0	0	1420
0x00008CCC	0x011E8CCC	0x011E8CCC
1265	1896	1505
0x023D1998	0x011E8CCC	0x011E8CCC
1127	1689	0
0x011E8CCC	0x011E8CCC	0x011E8CCC
1265	1505	2531
0x011E8CCC	0x023D1998	0x011E8CCC
0	1420	1265
0x011E8CCC	0x011E8CCC	0x011E8000
1420	1265	0
0x011E8CCC	0x011E8CCC	0x00008CCC
0	0	1265
0x011E8CCC	0x011E8CCC	0x023D1998
1505	1896	1127
0x023D1998	0x011E8CCC	0x011E8CCC
1420	0	1265
0x011E8CCC	0x011E8CCC	0x011E8CCC
1505	1689	0
0x011E8CCC	0x023D1998	0x011E8CCC

1420	1896
0x011E8CCC	0x011E8CCC
0	1189
0x011E8CCC	0x023D1998
1505	1505
0x023D1998	0x023D1998
948	1265
0x011E8CCC	0x023D1998
1004	1896
0x011E8CCC	0x023D0CCC
1265	0
0x023D0CCC	0x00000CCC
0	1896
0x00000CCC	0x08F46660
1265	0
0x011E8CCC	0x08F46660
1505	
0x011E8CCC	
1127	
0x047A3330	
1265	
0x011E8CCC	
0	
0x011E8CCC	
1189	
0x011E8CCC	

b.) system was the same as figure 6.6 and 6.7

3.)


PreVu
400 µs
0.00000 s
2.00mV
Bw
20.0 V
Freq
21.09kHz
Save / Recall
Save
Menu
Default Setup
Utility

4.)

b5,b4,b3,b2,b1,b0	Theoretical DAC Voltage	Measured DAC Voltage
0	0V	-200 μV
1	.052381V	54.2mV
7	.366667V	361 mV
8	.419048V	415mV
15	.785714V	793mV
16	.838095V	838mV
17	.890476V	880 mV
18	.942857	927mV
31	1.623810V	1.64V
32	1.676190V	1.60V
33	1.728571V	1.66V
47	2.461905V	2.42V
48	2.514286V	2.45V
49	2.566667V	2.52V
62	3.247619V	3.20V
63	3.3V	3.26V

range = 3.26 + 200mV = 3.26 V

precision = $2^n = 2^6 = 64$ or 6-bits

resolution = $\frac{1}{63}(3.26) = 0.0517$ V

accuracy = 98.3%

$\sum_{n=0}^{63} \frac{(\text{accepted} - \text{experiment})}{\text{accepted}} = PE$

100% - PE = 98.3%

5.)

a.) Since they are periodic, they occur whenever Reload values hit zero.

b.)startup.s contains the vector.

c.) Check I/O status, ready flag is set, software will read data and save it in RAM, , ready flag for output set, and then after next interrupt it will write data

d.) The PC contains the next instruction after the subroutine was called.