

# CS 43I Homework 1

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## I ANSWERS

I. a)  $z = 127, v = 383$

b)  $y = 1$

c) The remainder is  $= n \& (0111)$

d)

i) 4

ii) 12

iii) 2

iv) 7

v) 15

2.

a) 227



























b) 226.84 but value gets truncated so quantization error is 1.

c) 90-100 with 15 bits because smallest range and highest number of bits.

3.

a) Highest 10bit number is 1023. Clock is 8.192kHz. Timer overflows at 8.0078Hz. Every 124.8ms.

b) 800

time	BG	DISK	NETWORK	TIMER
0ms:				
2ms:				
4ms:				
6ms:				
8ms:				
10ms:				
12ms:				
14ms:				
16ms:				
18ms:				
20ms:				
22ms:				
24ms:				
26ms:				
28ms:				
30ms:				
32ms:				
34ms:				
36ms:				
38ms:				
40ms:				
42ms:				
44ms:				
46ms:				
48ms:				
50ms:				

4. a)

b) In 200 ms only rooms are used in background task, and this pattern continues, so for a 10 second task you would need 20 seconds to complete.