EE 2905

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Homework 9

1 – With a 10b ADC and a 3.3v reference – provide the following values 40 pts

A) Step size

B) binary adc value for an input of 2.5v

C) measured voltage if the ADC result is 0x13A

2 – Using the code below – provide the following values assuming you are using our 3.3V mbed system 40 pts

```
AnalogIn myadc(A3);
…
int main(void){
…
    float foo;
    uint16_t boo;
    float loo;
…
    myadc.set_reference_voltage(5.0);
    foo = myadc.read();
    boo = myadc.read_u16();
    loo = myadc.read_voltage();
…
```

if the external voltage being measured is 1.2V, provide the values for

foo

boo

loo

3 – provide a single line of code for each change 20 pts

uint8_t foo;

a) set bit 3 of foo to 1

b) set bits 1 and 5 of foo to 1

c) set bit 4 of foo to 0

d) if foo was originally 33, what is it after this line of code

```
foo = (foo | 0x12) & ~0x48
```