NOTE: I was unable to locate the final version of this test. What follows is a pre-release version of the test. The final test was similar with marks added. The test was open-book

(1) An analog to digital converter (ADC) 0has an input voltage range of 0 to 3V.
The ADC outputs an unsigned 10 bit number which is proportional to the size of the input voltage.
If the ADC produces an output of 120 what voltage is applied to its input?

(2)
What ARM Cortex Arithmetic flags are set by the following calculations:

0x80000000 - 2
0x10 & 0x02

(3)
The C function **memset** has the following prototype:
void *memset(void *s, int c, size_t n);
It fills the first n bytes of the memory area pointed to by **s** with the byte **c**.
Assuming the parameters are passed in R0, R1 and R2, write the ARM Cortex assembler code you would use to implement complete the following partial implementation of this function.

```
; memset: on entry R0 points to target memory
        ; R1 contains byte to be put into memory
        ; R2 contains count
memset
                PUSH {LR,R0-R3}
; Fill in the missing code here

                POP    {PC,R0-R3}
```

(4)
A compiler generates code that conforms to the ARM Achitecture Procedure Call Standard (AAPCS)
What mechanism will it use to pass a 64 bit number to a function?

(5)
The link register (LR) is used to store return addresses. Given that there is only ONE link register. explain how nested function calls are implemented on the ARM Cortex-M processors.