ECE331 Quiz 9 Name: Solution CM#_____

;This program should light LED 1 (on PT7) if analog input connected to PAD3 (AN3)
;is BELOW (1/4)*(5) volts, light LED 2 (on PT6) if analog input is ABOVE (3/4)*(5V). Otherwise
;both LEDs should remain OFF. Fill in the blanks. Note: Each blank is worth 0.2 Points (3 Pts max)

```
        XDEF Entry        ; export 'Entry' symbol.
        ABSENTRY Entry    ; for absolute assembly: mark this as application entry point.
        INCLUDE 'mc9s12c128.inc'
        ORG $4000
Entry:
        LDS  #$1000                ;Initialize the stack pointer.

        BSET  DDRT, #$C0           ;Make PT7 and PT6 outputs for LEDs.

        BCLR  ATDDIEN,%00001000    ;Make PAD3 (AN3) an analog input

        BSET  ATDCTL2,%10000000    ;Power up A/D Subsystem.

        LDX #$FFFF
WT_ATD_PWR_UP:
        DEX
        BNE WT_ATD_PWR_UP          ;Wait a few milliseconds for A/D Subsystem Power to stabilize.

        MOVB #%00001000,ATDCTL3    ;Select single conversion

        MOVB #%00000001,ATDCTL4    ;Select 10-bit resolution & 2-clock sample times
                                   ;and 1/4 ATD clock prescaling.
NEXTCONV:  MOVB #$83,ATDCTL5       ;Start a conversion on PAD3 (AN3), with result right-justified.
WT_TIL_DONE:
        BRCLR ATDSTAT0,#$80,WT_TIL_DONE ;Wait till converter is done.
        LDD  ATDDR0(H)             ;Load 10-bit result into accumulator D.
        CPD #$3FF/4                4("H" is optional)
        Light LED1
        CPD #3*($3FF/4)

        Light LED2

        BCLR PTT,#C0
        BRA  NEXTCONV
LightLED1:  BSET PTT,$80           ;Light LED1 (on PT7) if analog is below 5/4 volts.
        BCLR PTT,#40
        BRA DONE
LightLED2:  BSET PTT,$40           ;Light LED2 (on PT6) if analog input is above 15/4 volts.
        BCLR PTT,#80
        BRA NEXTCONV
        ORG  $FFFE
        DC.W ENTRY                 ; Reset Vector
```