1. The ADC is a 12-bit ADC. Therefore, it has $2^{12} = 4,096$ bins. If the reference voltages provided are $+V_R = +5V$ & $-V_R = +1V$, the ADC is being used in bipolar mode, and the voltage bin resolution is $\Delta V_R / 2^{12} = 4V / 2^{12} = 0.98\,mV$ per bin.

13.13. What is SPBRG reg. for baud = 9600, asynchronous, $F_{osc} = 16MHz$, & TXSTA. BRGH is cleared?

     BRGH = 0 = low speed async. Assume default 8-bit mode.

     For 8-bit, $9600 = F_{osc} / [64(n+1)]$

     $\Rightarrow n = ([F_{osc}/9600]/64) - 1 = 25.0417$

     $\boxed{SPBRG = 25.}$

13.14 Calculate error in 13.14.

     Baud $= 16MHz / [64(n+1)] = 9615.38$ baud

     Error $= (9615.38 - 9600)/9600 = \boxed{0.16\% \text{ error}}$

13.15. 13.13, but assume BRG16 = 1. 13.14.

     For 16-bit, $9600 = F_{osc} / [16(n+1)]$

     $\Rightarrow n = ([F_{osc}/9600]/16) - 1 = 103.167$

     $\boxed{SPBRG = 103}$

     Baud $= 16MHz / [16(103+1)] = 9615.38$ baud

     Error $= (9615.38 - 9600)/9600 = \boxed{0.16\% \text{ error}}$