CS1203
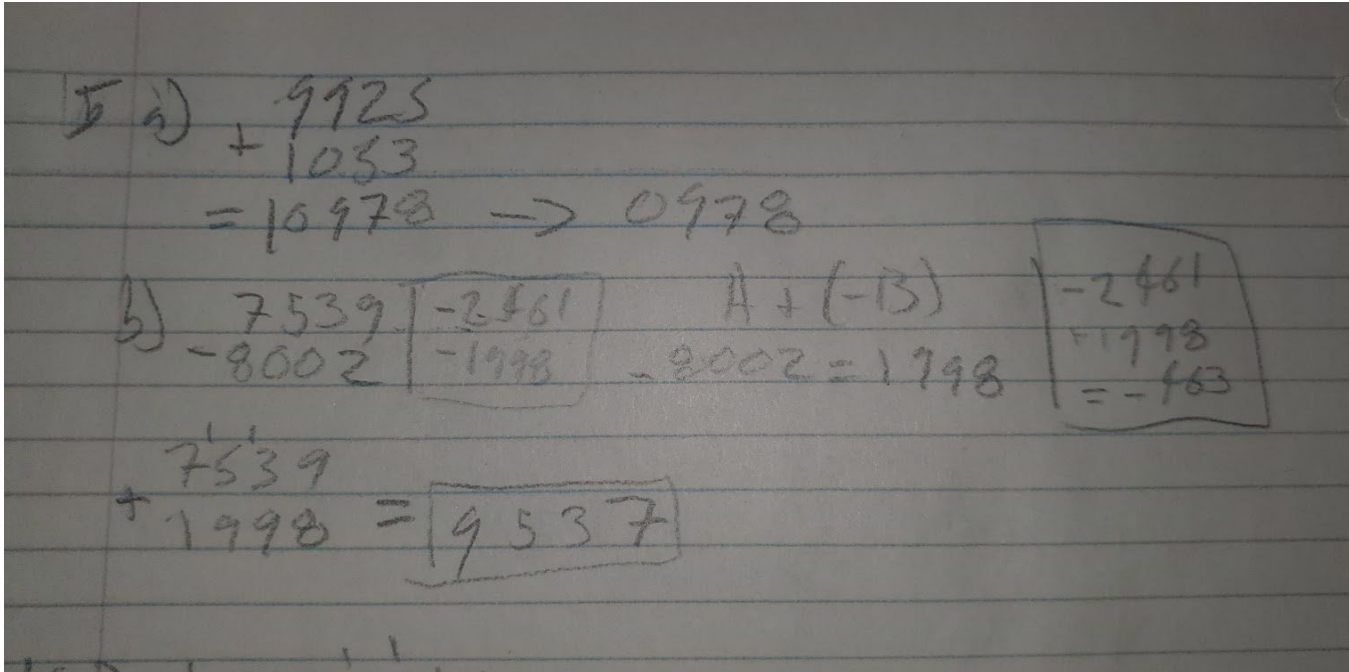
Assignment # 3

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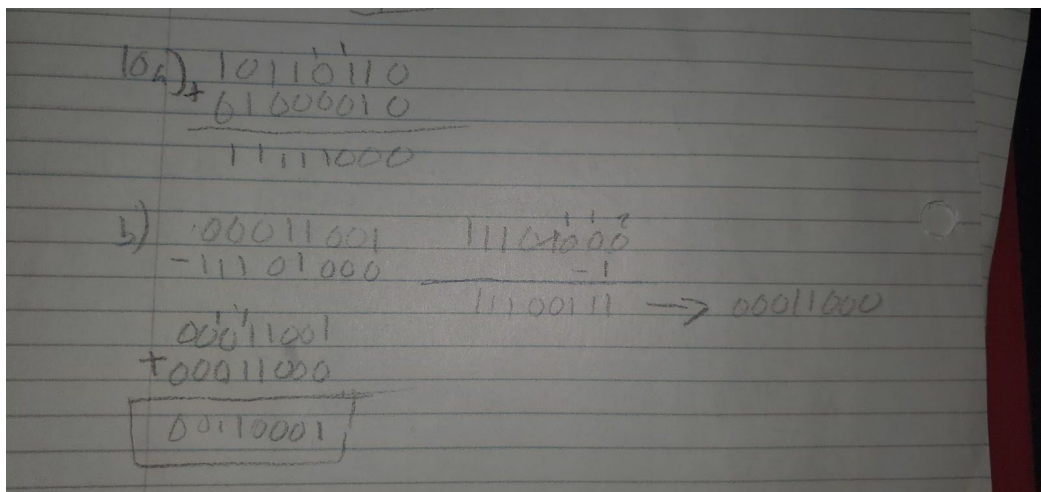
"I warrant that this is my own work."

1) 99322

2) 35090

3) -9121

4) 47900

5) a)0978 b)9537

5 a) $+\begin{array}{r}9925\\1053\end{array}$

= 10978 → 0978

b) 7539   -3561   A + (-B)   -2461
   -8002   -1998   -8002 = 1798   +1798
                                      = -663

   $+\begin{array}{r}7539\\1998\end{array}$ = 9537

6) 10010000

7) 01101101

8) -54

9) 110

10)

10a) $+\begin{array}{r}10110110\\01000010\end{array}$

   11111000

b) 00011001   11101000
   -11101000   -1
                  11100111 → 00011000

   $+\begin{array}{r}00011001\\00011000\end{array}$

   00110001

a)11111000 b)00110001

11) The range of 8 bit 2's complement is (-128, 127) therefore any number outside of that

range is overflow. In my example if you subtract the decimals 100 - (-90) you get the

number 190 but that isn't in the range so it overflows. This is proved in the equation

because once converted the answer converts to -66 which is mathematically incorrect.
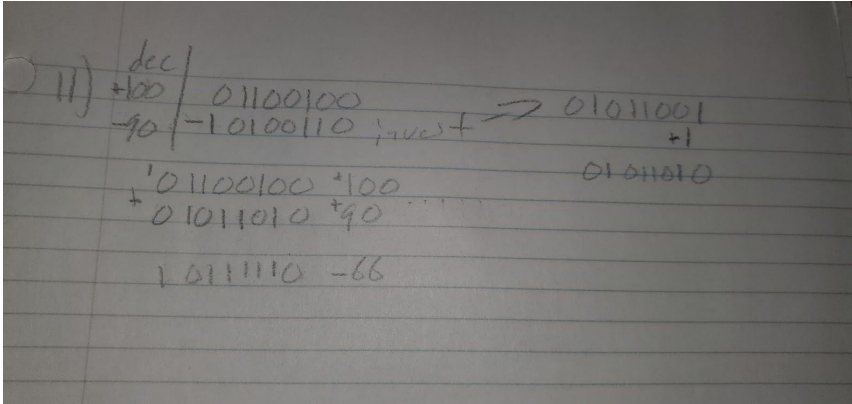
12) Discarded carry and overflow are not the same. Both result in some sort of error, but a

discarded carry can be fixed. As shown in the picture a discarded carry is when there is

an extra digit in the equation but overflow is when the total digits can't represent the

decimal value.