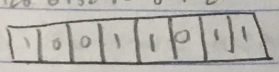
Kiersten Page HW #1 Due Friday 9/22

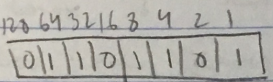
Question #1: Convert the following numbers to their decimal representation:

a) $1001\,1011_2 = \boxed{155_{10}}$



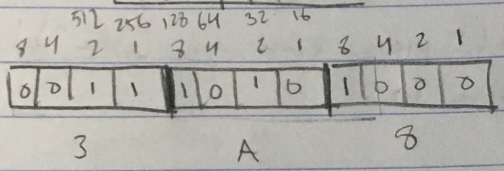
$128 + 16 + 8 + 2 + 1 = 155_{10}$

b) $1101101_2 = \boxed{109_{10}}$



$64 + 32 + 8 + 4 + 1 = 109_{10}$

c) $3A8_{16} = \boxed{936_{10}}$



$8 + 32 + 128 + 256 + 512 = 936_{10}$

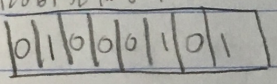
d) 2214_5

$(2 \cdot 5^3)(2 \cdot 5^2)(1 \cdot 5^1)(4 \times 5^0)$

$250 + 50 + 5 + 4 = \boxed{309_{10}}$

Question #2: Convert the following numbers to their binary representations

a) 69_{10}



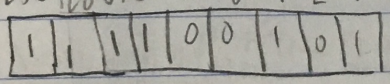
$\boxed{01000101_2} = 69_{10}$

$69 - 64 = 5$

$5 - 4 = 1$

$1 - 1 = 0$

b) 485_{16}



$485_{10} = \boxed{111100101_2}$

$485 - 256 = 229$

$229 - 128 = 101$

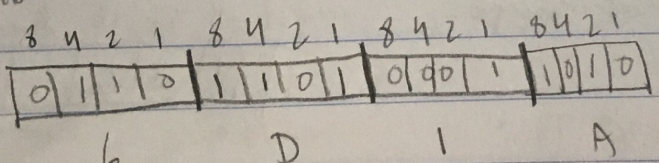
$101 - 64 = 37$

$37 - 32 = 5$

$5 - 4 = 1$

$1 - 1 = 0$

c) $6D1A_{16}$



A = 10

B = 11

C = 12

D = 13

$6D1A_{16} = \boxed{0110\ 1101\ 0001\ 1010_2}$