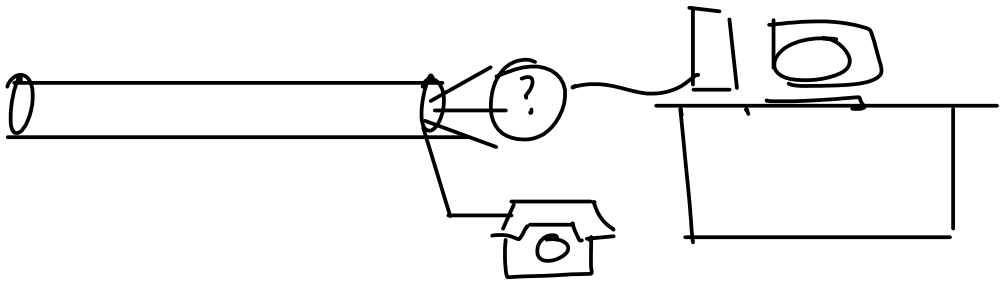
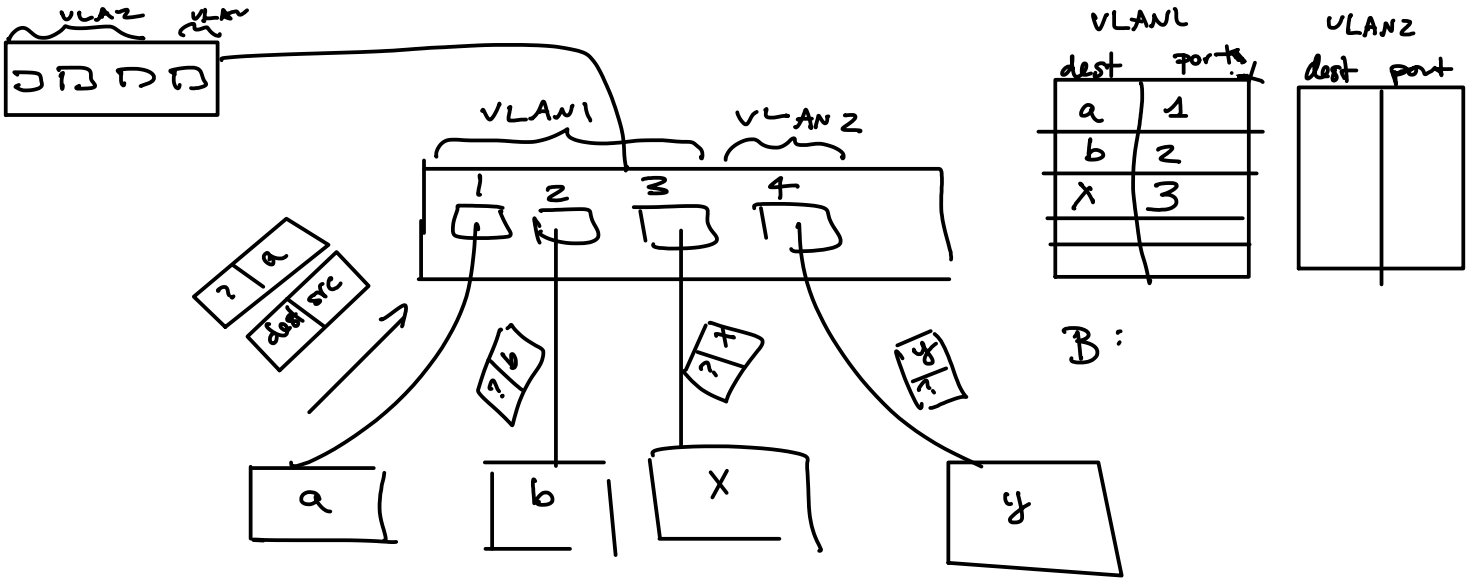
Lecture 17 - Review



could use
10 or 100 Mb/s
but not 1Gb/s
since don't have 4
pairs.

Assignment 5 - Learning Bridge



From 201330 exam:

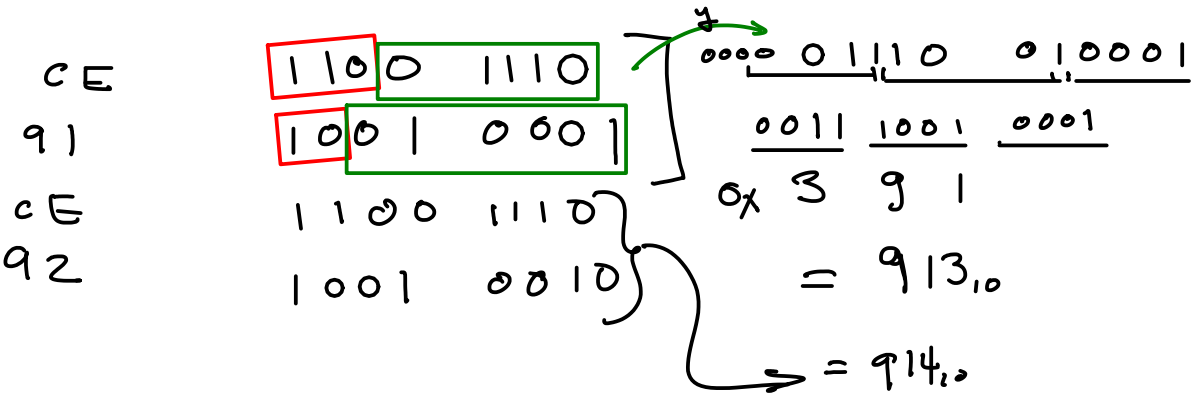
Question 1 (7 marks)

Assuming UTF-8 encoding, how many glyphs (characters) are encoded by the following sequence of four bytes: 0xce, 0x91, 0xce, and 0x92? What are the values, in decimal, of their Unicode values ("code points")?

Table 3-6 from version 6.2 of the Unicode standard is given below.

Table 3-6. UTF-8 Bit Distribution

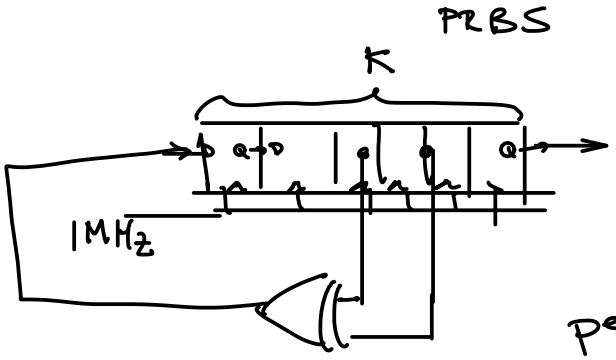
Scalar Value	First Byte	Second Byte	Third Byte	Fourth Byte
00000000 0xxxxxxx	0xxxxxxx			
00000yyy yyxxxxxx	110yyyyy	10xxxxxx		← use this encoding
zzzzyyyy yyxxxxxx	1110zzzz	10yyyyyy	10xxxxxx	
000uuuuu zzzzyyyy yyxxxxxx	11110uuu	10uuzzzz	10yyyyyy	10xxxxxx



these are: A Greek capital Alpha and Beta

B

Question 9 from Assignment 5



10 0 . . .

PRBS sequence repeats after $2^k - 1$ bits

period = $2^k - 1$ bits $\geq$ # bits in 1 hour

1 Mb/s × 60 minutes × 60 ~~second~~/minute = 3600×10^6

$= 3.6 \times 10^9$ bits

$2^k - 1 \geq 3.6 \times 10^9$

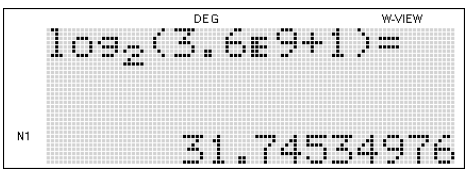
$2^k \geq 3.6 \times 10^9 + 1$

$\log_2 2^k = K \geq \log_2 (3.6 \times 10^9 + 1)$

$10^3 \approx 2^{10} \approx 1000$

$10^6 \approx 2^{20}$

$10^9 \approx 2^{30}$



$K \geq 31.74$

so choose 32 bits.