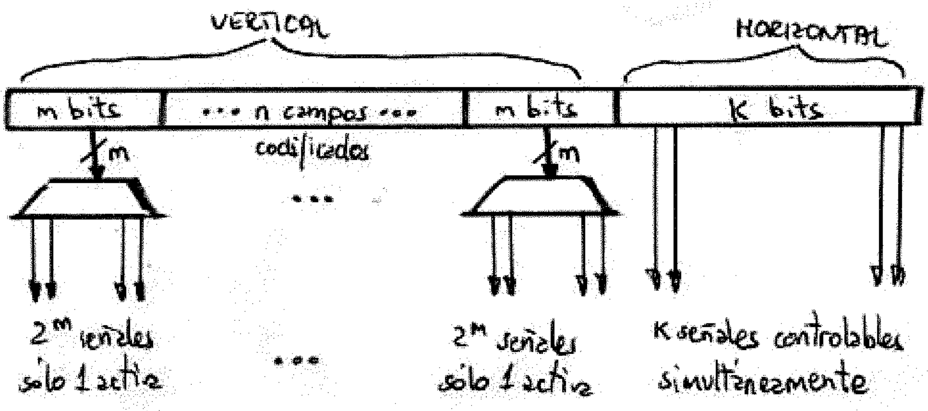
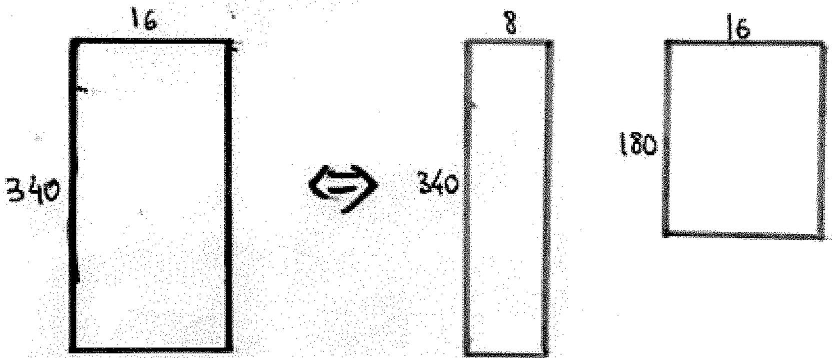
3.-



TOTAL SEÑALES CONTROL EN UNIDAD PROCESAMIENTO: $n \cdot 2^m + K$

MÁXIMO DE SEÑALES CONTROLABLES SIMULTANEAMENTE: **n + k**

4.-



$\lceil \log_2 180 \rceil = 8$ — $\{ 2^7 = 128$, $2^8 = 256$

340×16 — $340 \times 8 + 180 \times 16$
$= (170 + 180) \times 16$
$= 350 \times 16 > 340 \times 16$
(10×16 más)

GASTA 160 bits MAS

5.-

$2^{13} = 2^3 2^{10} = 8K$ — { M de Memoria; 210×4 de E/S (al final)

SUPONER: 210 = nº EXACTO (no MAXIMO)
PREGUNTA M MAXIMO (no EXACTO)

$210 \text{ perif} \times 4 \frac{\text{puertos}}{\text{perif}} = 840$; $840 / 16 = 52$ resto 8; $52 / 16 = 3$ resto 4 → $= 0x348$

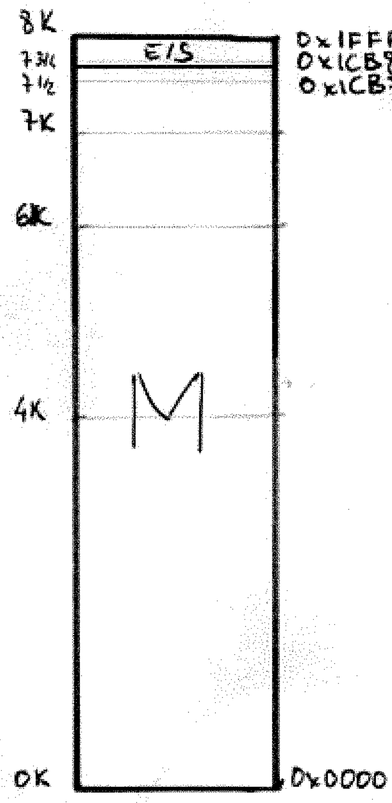
$8k = 2^{13} = 10\,0000\,0000\,0000)_2 =$ 0x 2000
$-$ 0x 348
= 1CB8

E/S ocupa	0x1CB8 ... 0x1FFF
M máxima	0x0000 ... 0x1CB7

(840 palabras)

= 0x1CB8 palabras
= **7352 palabras**
= 8K − 840 palabras

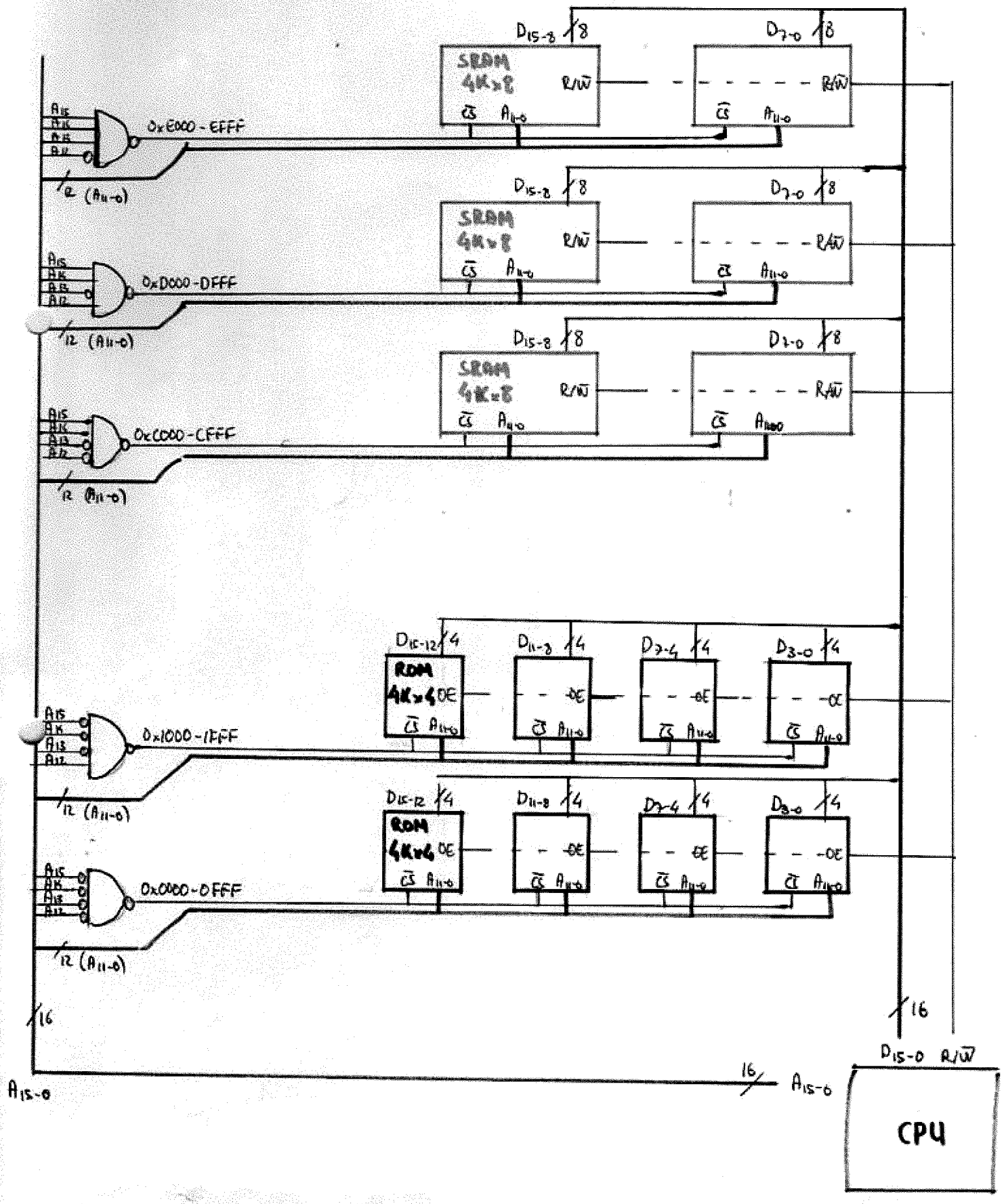
$(8K = 1024 \times 8 = 8192)$ $(8192 - 840 = 7352)$



6 -

ROM $0x0000 - 0x1FFF = 2^{13} = 8K$ palabras $= 8K \times 16$ MODULOS $4K \times 4$
$\times (2 \times 4)$ 8 MODULOS

SRAM $0x C000 - 0xEFFF = 3 \times 2^{12} = 12K_{pal} = 12K \times 16$ MODULOS $4K \times 8$
$\times (3 \times 2)$ 6 MODULOS



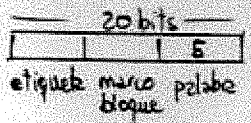
7.-

Mem = 1M = 2^{20}

Caché = 8K = $2^3 2^{10} = 2^{13}$

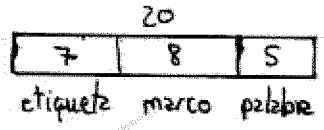
Bloque = 32 = 2^5

a) DIRECTA



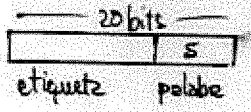
CUANTOS BLOQUES HAY EN CACHE?

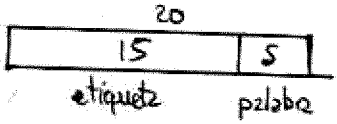
$\frac{2^{13} \text{ pal/caché}}{2^5 \text{ pal/bloque}} = 2^8 \frac{\text{bloques}}{\text{caché}}$



7 = 20 − (8+5)

b) ASOCIATIVA



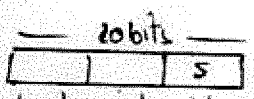


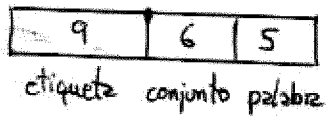
15 = 20 − 5

c) ASOCIATIVA CONJUNTOS 4v

CUANTOS CONJUNTOS HAY EN CACHE?

$\frac{2^8 \text{ bloques/caché}}{4 \text{ bloques/conjunto}} = 2^6 \frac{\text{conj}}{\text{caché}}$

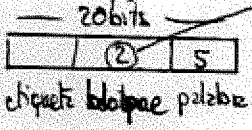


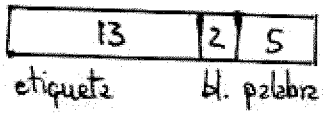


9 = 20 − (6+5)

d) SECTORES 4 bl.

4 bloques/sector = 2^2 bloques/sector





13 = 20 − (2+5)