Problem 6.31 Solution:

A. Cache size: C = 128 bytes.
B. Address fields:
   CT: [12-5]
   CI: [4-2]
   CO: [1-0]

Problem 6.32 Solution:

A. Address format

12	11	10	9	8	7	6	5	4	3	2	1	0
0	0	1	1	1	0	0	0	1	1	0	1	0
CT	CT	CT	CT	CT	CT	CT	CT	CI	CI	CI	CO	CO

B. Memory reference:

Parameter	Value
Block Offset (CO)	0x2
Index (CI)	0x6
Cache Tag (CT)	0x38
Cache Hit? (Y/N)	Y
Cache Byte returned	0xEB

Problem 6.33 Solution:

A. Address format (one bit per box):

12	11	10	9	8	7	6	5	4	3	2	1	0
1	0	1	1	0	1	1	1	0	1	0	0	0
CT	CT	CT	CT	CT	CT	CT	CT	CI	CI	CI	CO	CO

B. Memory reference:

Parameter	Value
Block Offset (CO)	0x0
Index (CI)	0x2
Cache Tag (CT)	0xB7
Cache Hit? (Y/N)	N
Cache Byte returned	--

Problem 6.34 Solution:

There are two valid lines in Set 2, the first with a tag of `0xBC`, and the second with a tag of `0xB6`. The addresses that hit in the first line have the binary form `1 0111 1000 10xx`, which corresponds to the address range of `0x1788` – `0x178b`. Similarly, the addresses that hit in the second line have the binary form `1 0110 1100 10xx`, and thus an address range of `0x16c8` – `0x16cb`.