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Problem 1

4 bytes in a word. $32 - 12 - 2 = 18$ *bits of tag*

Byte Address	Word Address	Cache Index	Tag
0488C04B	01223012	012	01223
84CC0488	21330122	122	21330
7FFFFBC7	1FFFFEF1	EF1	1FFFF
00003BC5	00000EF1	EF1	00000

Problem 2

4 bytes in a word. 16 words in a block. Divide by 64 to get amount of blocks. $32 - 8 - 6 = 18$ *bits of tag*

Byte Address	Block Address	Cache Index	Tag
0488C04B	0122301	01	01223
84CC0488	2133012	12	21330
7FFFFBC7	1FFFFEF	EF	1FFFF
00003BC5	00000EF	EF	00000

Problem 3

4 bytes in a word. 16 block cache. $32 - 8 - 2 = 22$ *bits of tag*

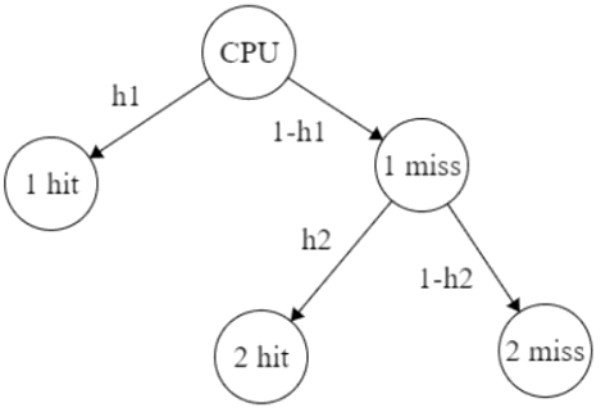
Byte Address	Word Address	Cache Index	Tag
0488C04B	01223012	12	012230
84CC0488	21330122	22	213301
7FFFFBC7	1FFFFEF1	F1	1FFFFE
00003BC2	00000EF1	F1	00000E

Problem 4

4 bytes in a word. 4 words in a block. $32 - 6 - 4 = 22$ *bits of tag*

Byte Address	Block Address	Cache Index	Tag
0488C04B	0488C04	04	0488C
34C00458	34C0045	45	34C00
6FFFFAC7	6FFFFAC	AC	6FFFF
00005BA2	00005BA	BA	00005

Problem 5



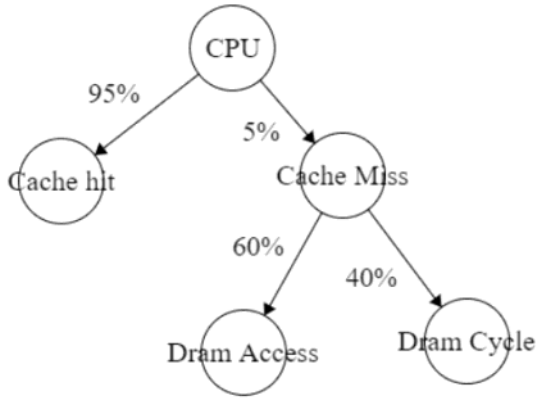
Mean access is based off of Cache 1 hits and misses because it's 2 level:
Basic Formula: Mean access = Cache 1 access + (Cache 1 miss * Cache 1 penalty)

Cache 1 penalty = Cache 2 access + Cache 2 miss * Cache 2 penalty

Cache 2 penalty = Main Memory time

Substitute in values you get
Answer: Mean Access = $h_1c_1 + (1 - h_1)(b_1c_2 + c_1)(h_2) + (1 - h_1)(1 - h_2)(c_1 + b_1c_2 + m(b_1 + b_2))$

Problem 6



Answer: Mean Access = $20 * .95 + (0.05)(0.6 * (16 * 60)0.4\ (16 * 130) + 20)$
$= 90.4\ * 10^{-9}s$