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CS 200 Homework 10

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* 1. = (2^36)/128

=(2^36)/(2^7)

=(2^(36-7))

=2^29

* 1. Tag fields=36-(block+word)=26-(7+8)=21

Block fields=256 blocks=2^8 so block fields=8

Word fields=128 words=2^7 so word fields = 7

TTTTTTTTTTTTTTTTTTTTT BBBBBBBB WWWWWWW

* 1. 0000063FA sub 16

Which is hex so

6=0110

3=0011

F=1111

A=1010

00000=0000 0000 0000 0000 0000

Binary=0000 0000 0000 0000 0000 0110 0011 1111 1010

T B W

So

1100 0111=C 7 in hex= 307 in octal

1. 1. Since there are 4 sets with 2 lines each, 4\*2=8=2^3  
      2K\*2^3=2^14

2^3 words and 2^2 sets. Which leaves 2^9 in tags

So

TTTTTTTTTSSWWW



First Iteration:

8 - Miss

Block => set 1

9 to 15 – Hit (7)

16 - Miss

Block=>set 2

17 to 23 – Hit (7)

24 - Miss

Block => set 3

25 to 31 – Hit (7)

32 – Miss

Block => set 0

33 to 39 – Hit (7)

40 – Miss

Block => Set 1

41 to 47 – Hit (7)

48 – miss

Block => Set 2

49 to 51 – Hits (3)

In total for the first iteration:

7+7+7+7+7+3 hits= 38 hits (5\*7+3)

6 misses

Remaining iteration:

Since the rest are all hits and no misses

8+8+8+8+8+4=44 hits (5\*8+4)

But we need this doubled since there is 2 more iterations in the loop which is a total of 88 hits.

In total, there are 6 misses and 126 hits (88+38). To calculate the hit ratio we take the amount of hits divided by the hits+misses.  
  
Hit ratio = 126/(126+6) = 126/132