

VE370 HW7

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1. 32-bit = 4 byte

$16/4 = 4$  integers

2.  $B[I][0]$

3.  $A[I][J]$  and  $A[J][I]$

4. a.	decimal address	binary address	tag	index	hit
	3	$28'b0,0011$	$28'b0$	0011	m
	180	$24'b0,10110100$	$24'b0,1011$	0100	m
	43	$24'b0,00101011$	$24'b0,0010$	1011	m
	2	$28'b0,0010$	$28'b0$	0010	m
	191	$24'b0,10111111$	$24'b0,1011$	1111	m
	88	$24'b0,01011000$	$24'b0,0101$	1000	m
	190	$24'b0,10111110$	$24'b0,1011$	1110	m
	14	$28'b0,1110$	$28'b0$	1110	m
	181	$24'b0,10110101$	$24'b0,1011$	0101	m
	44	$24'b0,00101100$	$24'b0,0010$	1100	m
	186	$24'b0,10111010$	$24'b0,1011$	1010	m
	253	$24'b0,11111101$	$24'b0,1111$	1101	m

5.	decimal address	index	hit (tag, binary address is same as 4)
	3	001	m
	180	010	m
	43	101	m
	2	001	h
	191	111	m
	88	100	m
	190	111	h
	14	111	m
	181	010	h
	44	110	m
	186	101	h
	253	110	m

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6. According to missing rate:  $C1 = 100\%$   $C2 = 67\%$   $C3 = 67\%$ , C2 and C3 are better  
 According to cycles:  $C1 = 324 \text{ cycle}$   $C2 = 224 \text{ cycles}$   $C3 = 240 \text{ cycles}$ , C2 is the best

13.  $\langle 000000, 0010, \text{Data}[1024] \rangle$

$\langle 000010, 0000, \text{Data}[16] \rangle$

$\langle 010000, 0000, \text{Data}[128] \rangle$

$\langle 011101, 0000, \text{Data}[224] \rangle$

$\langle 010000, 0100, \text{Data}[2176] \rangle$

$\langle 010110, 0000, \text{Data}[160] \rangle$

$\langle 000011, 0110, \text{Data}[3088] \rangle$

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