EGC442
Class Notes
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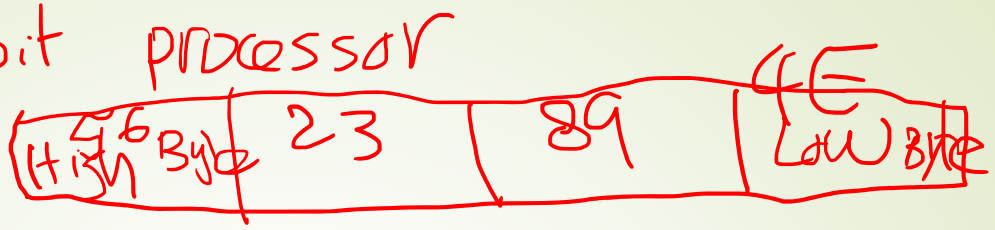
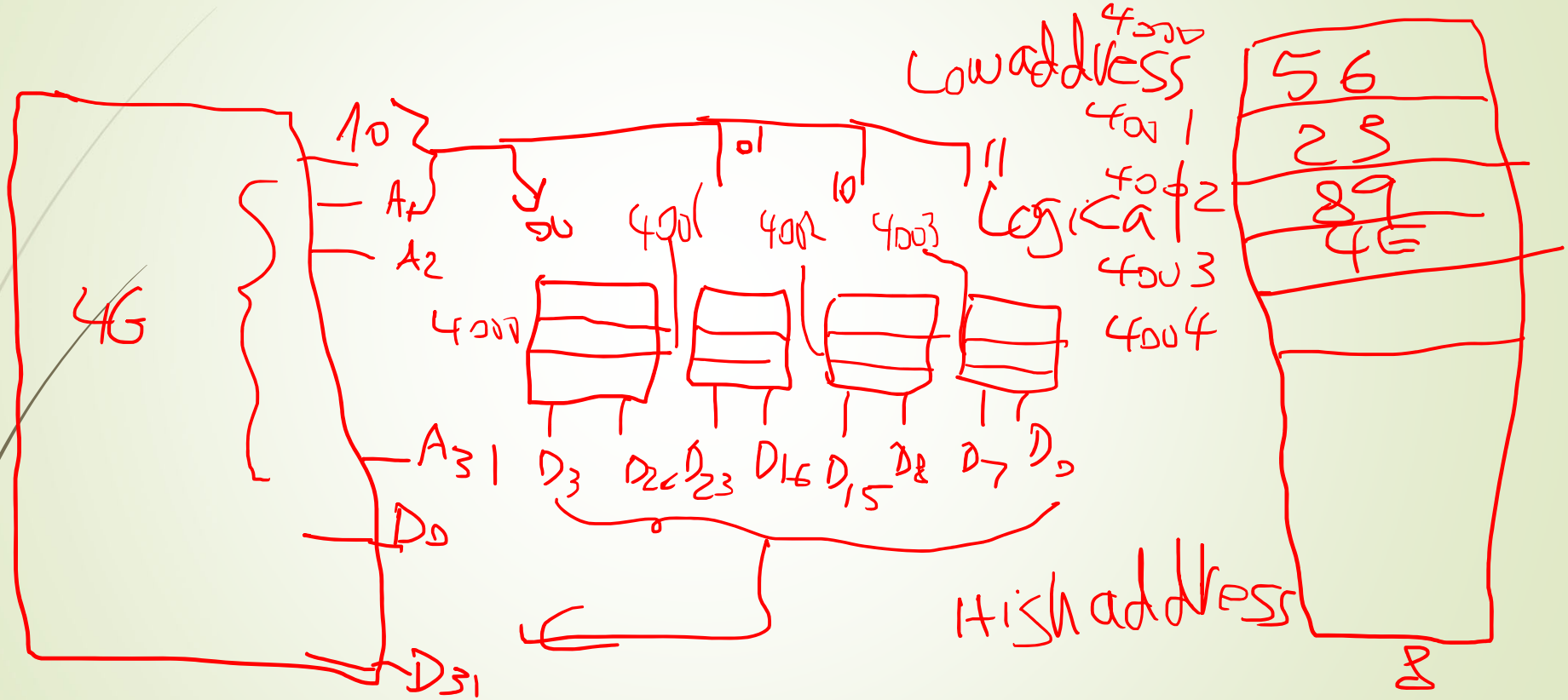
MIPS 32 bit processor





Assume $s3 has 5000, and words addressed 5000..5002 have the data shown:

5000: 99

5001: 77

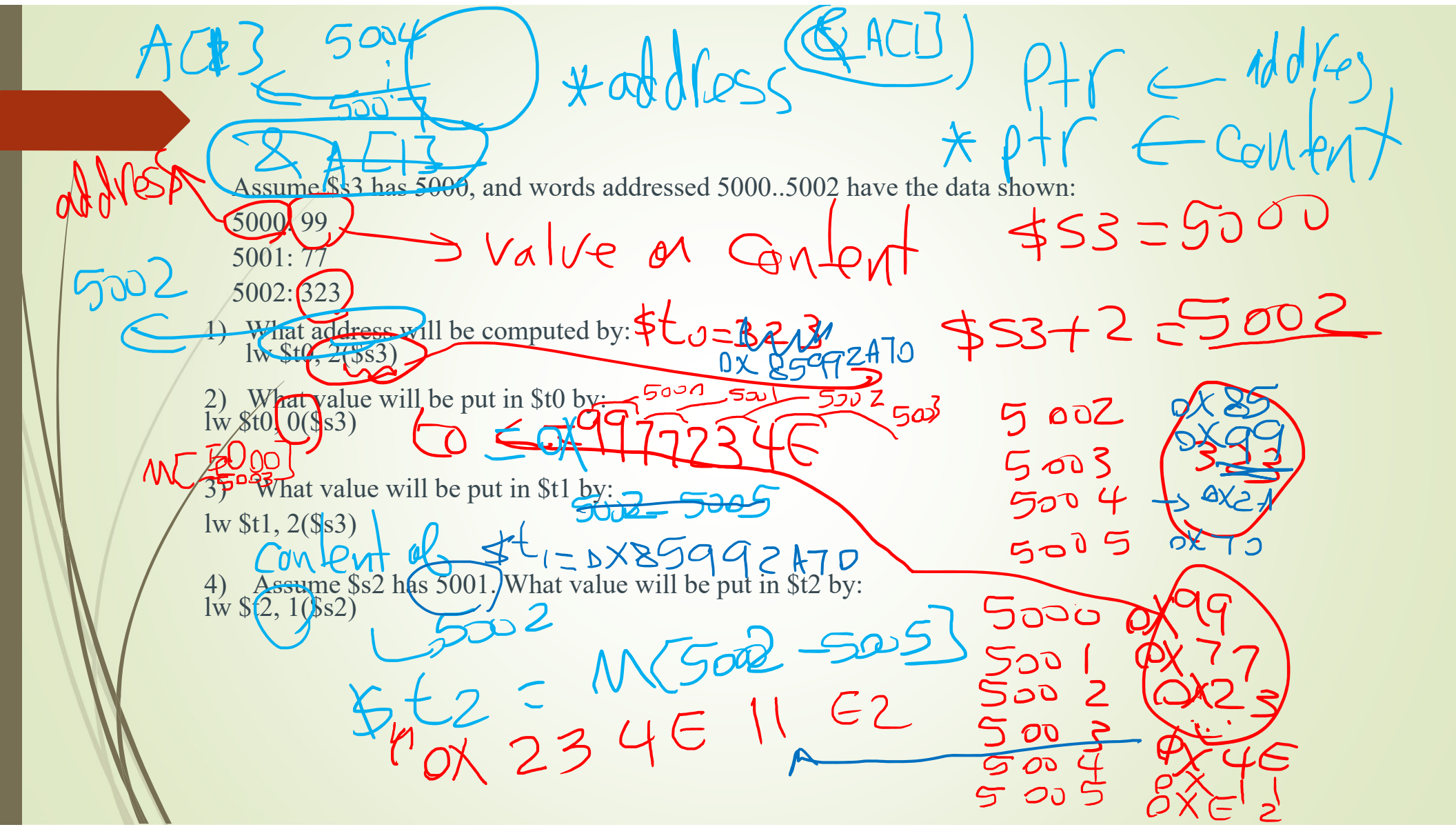
5002: 323

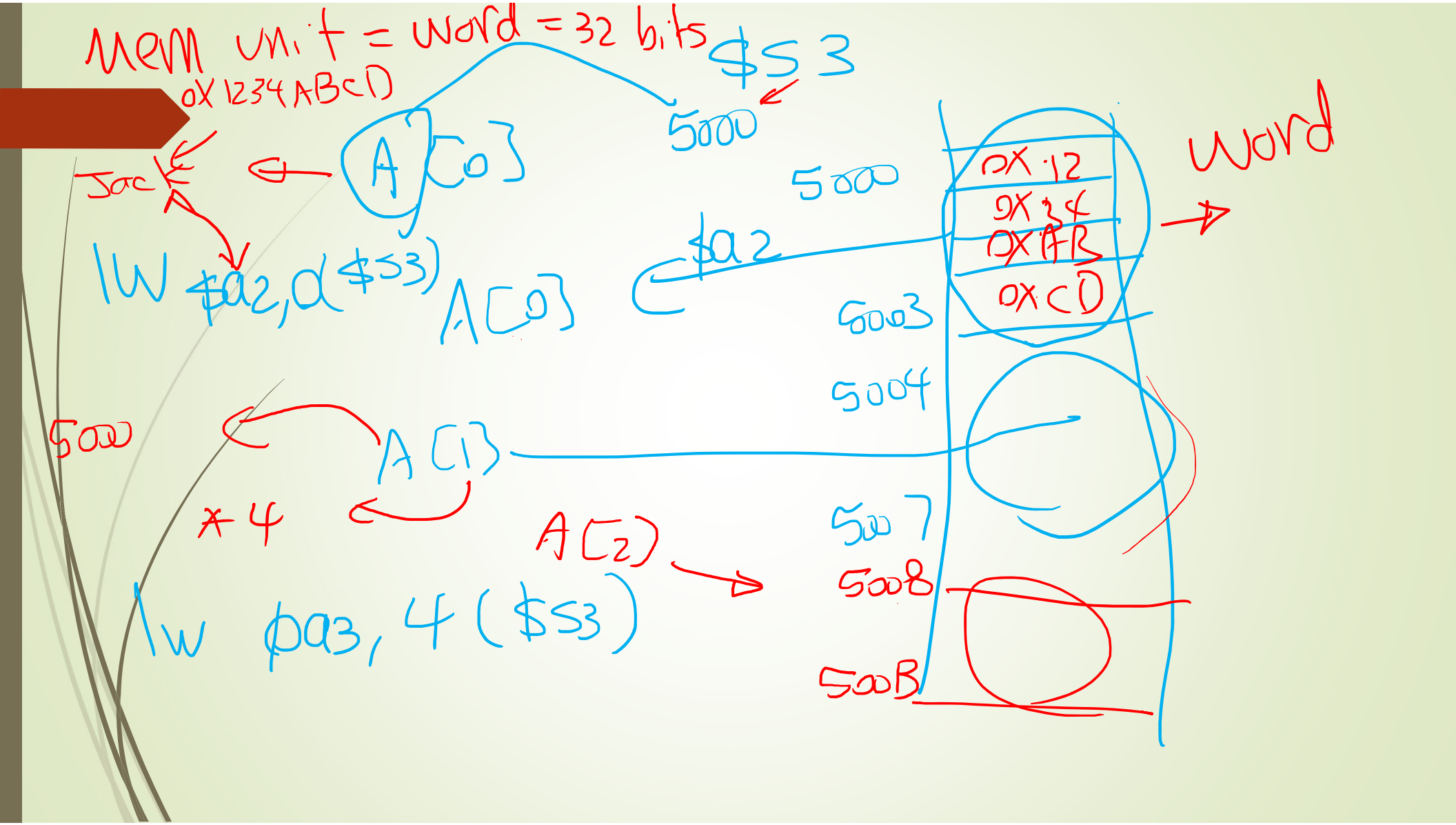
1) What address will be computed by:
lw $t0, 2($s3)

2) What value will be put in $t0 by:
lw $t0, 0($s3)

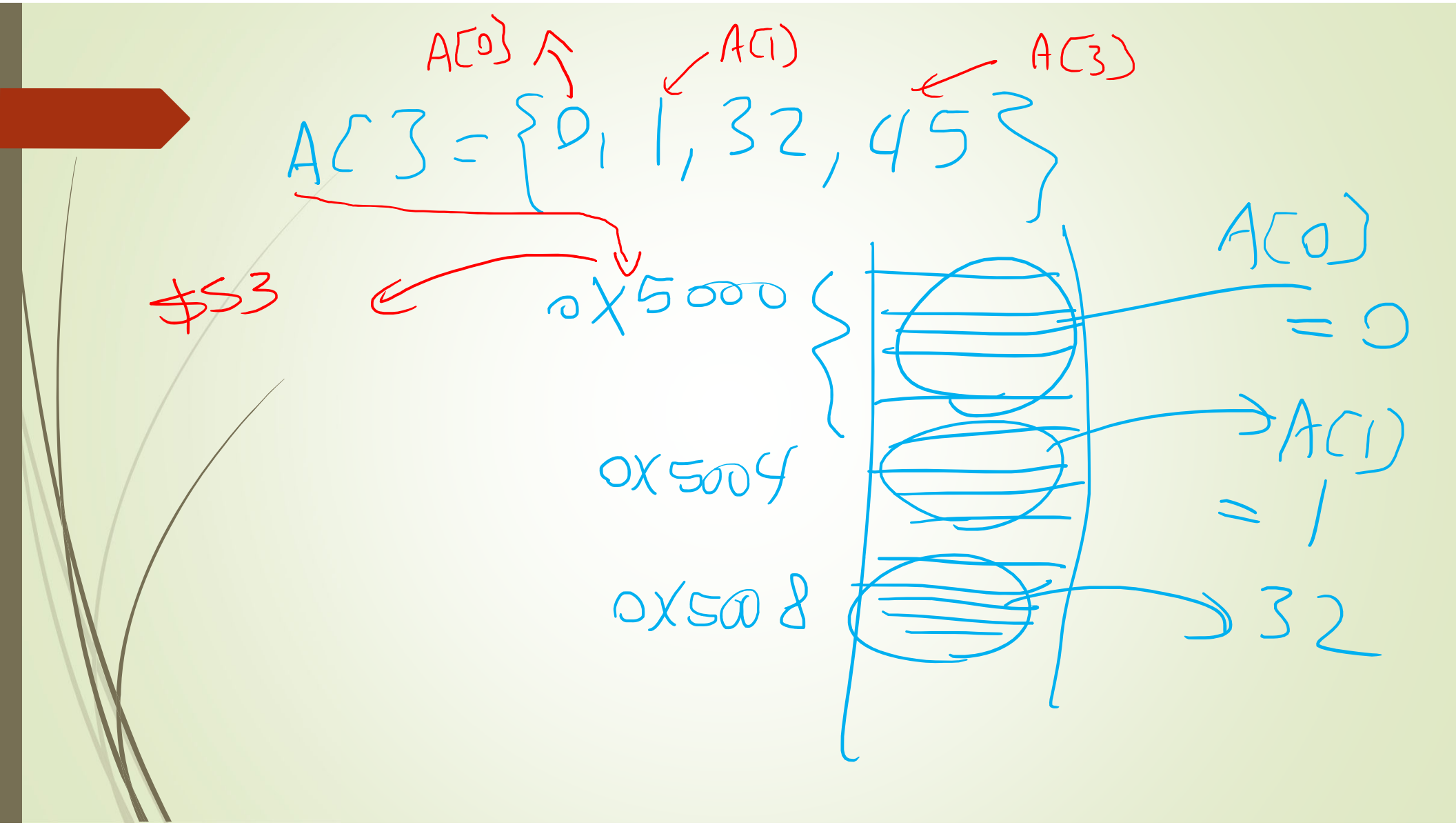
3) What value will be put in $t1 by:
lw $t1, 2($s3)

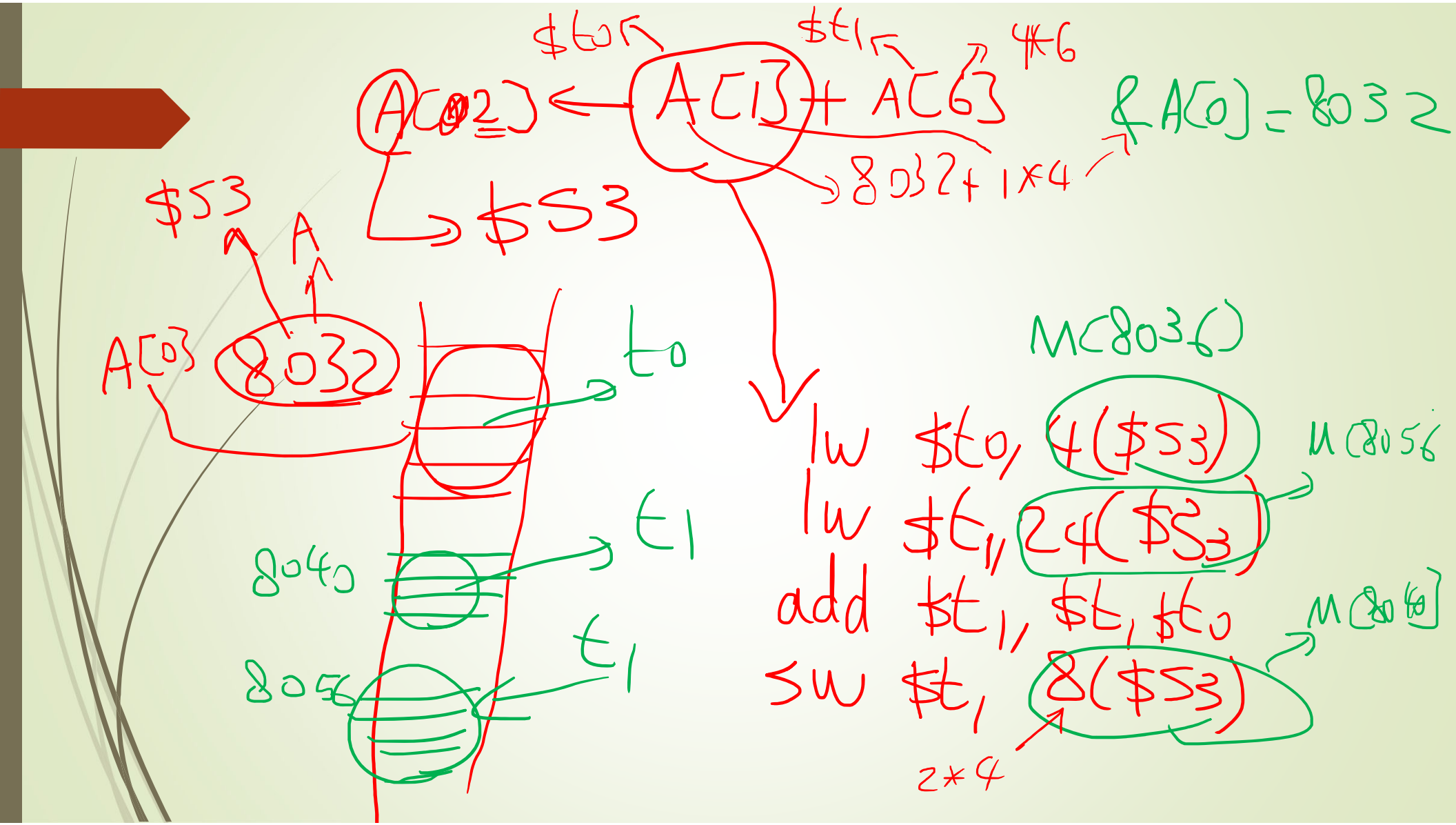
4) Assume $s2 has 5001. What value will be put in $t2 by:
lw $t2, 1($s2)





Mem unit = word = 32 bits
$s3
0X1234ABCD
5000
Jack
A[0]
5000
0X12
0X34
0XAB
0XCD
word
lw $a2,0($s3)
$a2
A[0]
5003
5004
5000
A[1]
*4
A[2]
5007
5008
500B
lw $a3,4($s3)


A[0]
A[1]
A[3]
A[3] = {0, 1, 32, 45}
$S3
0x5000
0x5004
0x5008
A[0]
= 0
A[1]
= 1
32


$t0
$t1
A[2]
A[1] + A[6]
&A[0] = 8032
8032 + 1*4
$s3
A
A[0]
8032
t0
t1
8040
8056
M(8036)
lw $t0, 4($s3)
lw $t1, 24($s3)
add $t1, $t1, $t0
sw $t1, 8($s3)
M(8056)
M(8036)
2*4

lw $rt, d16($rs)

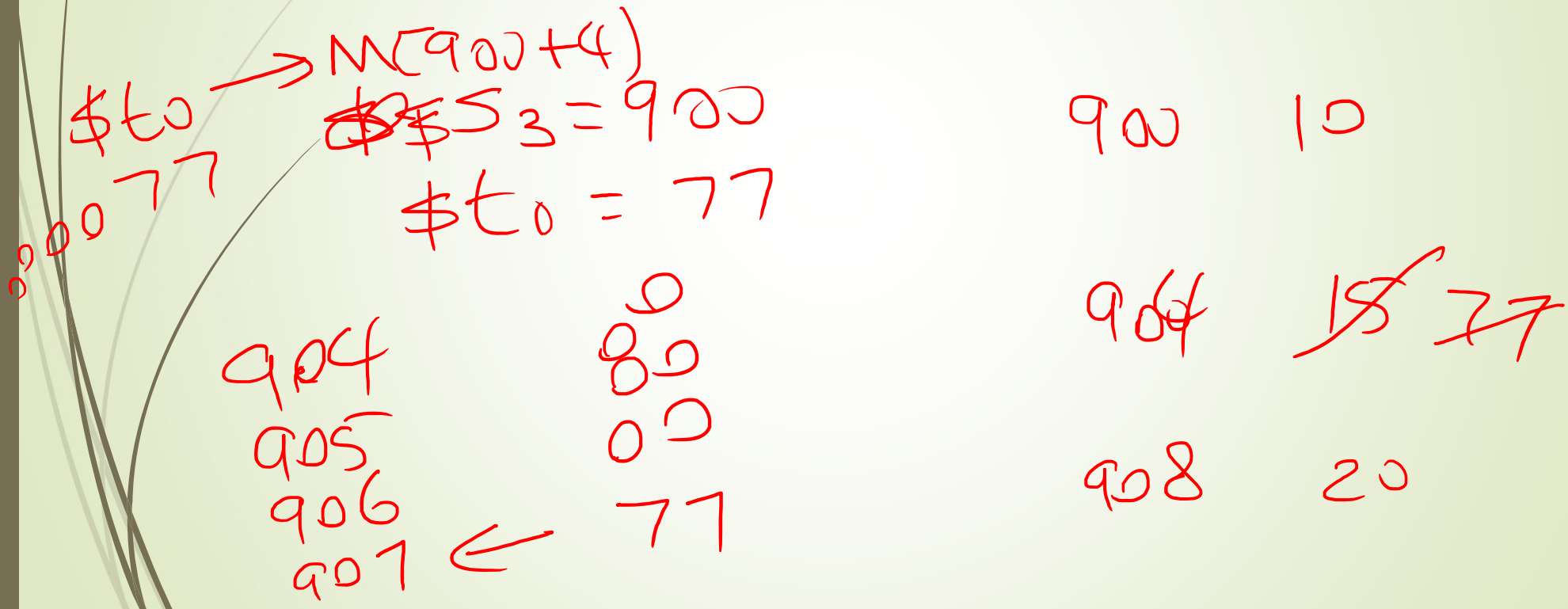
$rt ⟵ M[$rs + d16]

sw $rt, d16($rs)

$rt ⟶ M[$rs + d16]

•If $s3 has 900, $t0 has 77, and memory locations 900, 904, and 908 have 10, 15, 20 respectively, what do those locations have after the following instruction?

sw $t0, 4($s3)



23) Which MIPS instruction does the following represent?

sub $t2, $t0, $t1

op	rs	rt	rd	shamt	funct
6 bits	5 bits	5 bits	5 bits	5 bits	6 bits

op	rs	rt	rd	shamt	funct
0	8	9	10	0	34

$t0 $t1 $t2