Computer Organization Homework 1

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1 Problem 1

1.1 7544_{ten} = 0001110101111000

1.2 2974_{ten} = 0000101110011110

1.3 -671_{ten} = 1111110101100001

2 Problem 2

2.1 (j)

a = 0000 1001 0010 1111 b = 0101 1100 0001 1100

2.1.1 Hex

a = 92F b = 5C1C

2.1.2 Octal

a = 4457 b = 56034

2.1.3 a + b

a + b = 0110 0101 0010 1011 No Carry out or overflow

2.1.4 a - b

a - b = 0110 0101 0010 1011 No Carry out or overflow

2.2 (k)

a = 0011 1001 1110 1111 b = 0011 1101 0010 0010

2.2.1 Hex

a = 39EF b = 3D22

2.2.2 Octal

a = 34757 b = 36442

2.2.3 a + b

a + b = 0111 0111 0000 1001 No Carry out or overflow

2.2.4   a - b

a - b = 1000 1110 0011 1000 Carry out not overflow

2.3   (l)

a = 1111 0010 0010 0111 b = 0010 0011 0011 0011

2.3.1   Hex

a = F227 b = 2333

2.3.2   Octal

a = 17104 b = 21463

2.3.3   a + b

a + b = 0110 1101 0011 1100 Overflow no carry out

2.3.4   a - b

a - b = 1000 1001 0101 1110 Overflow no carry out

3   Problem 3

3.1   (i)

add ribbon tonto hermit

3.2   (j)

bne clear, falls, Else lw $s3 1 j exit Else: lw $s3 0

3.3   (k)

add $s0 3(tonto) kaibab sub $s6 $s0 creek lw $t7 $s6