UNIVERSITY OF CALIFORNIA, RIVERSIDE Department of Computer Science and Engineering CS61 – Machine Organization and Assembly Language Homework 2 Given August 14, Due August 20, 2001

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1. Consider the following machine language program:

Address	Content
x3000	x54A0
x3001	x127F
x3002	x127F
x3003	x127F
x3004	x0807
x3005	x14A1
x3006	x0E01
x3007	xF025

What are the possible initial values of R1 that cause the final value in R2 to be 3?

- 2. Write a LC-2 assembly language program that will display the numbers from 1 to 10 on the console.
- 3. Write a LC-2 assembly language program that calculates the GCD (Greatest Common Divisor) of two numbers. The two numbers are in R0 and R1. Put the result in R3.

The algorithm to find the GCD of two numbers *x* and *y* is as follows:

while (x ≠ y) do{
 if (x < y)
 y = y - x
 else
 x = x - y
 }
result in x</pre>