CS 0147: Spring 2014 Lab 1

Part 1: Getting started in MIPS assembly language

Questions

Question 1: What decimal number is 0x00000013?

Answer: 19

Question 2: before the first instruction is executed (the program counter is the register labeled "pc"):

program counter = 0x00400000

Question 3: after the first instruction is executed:

program counter = 0x00400004

$t1 = 0x00000007

Question 4: after the second instruction is executed:

program counter = 0x00400008

$t1 = 0x0000000A

Question 5: after the third instruction is executed:

program counter = 0x0040000C

$t1 = 0x00000013

Question 6: Complete this sentence:

After each instruction, the PC is incremented so that it contains: A word which is 4 bytes.

Question 7: How big are instructions in MIPS?

Number of bits = 32

Number of bytes = 4

Number of words = 1

Part 2: Memory

Question 8:

```
  1D25
+ B72A
  --------
  D44F
```

Question 9: Does each box shown in the data segment window represent a byte or a word? Please explain.

Answer: A word. It packs four bytes into a word and shows it on each of the boxes.

Question 10: Answer:

.data
.word 15, 0x71, 0x40, 22, 0x3A, 10, 0x10, 0x22, 71, 40, 0x15

Words	**Hex Value**
(show the correct number of digits! 8 hex digits = 32 bits = 1 word)	
15	0x0000000F
0x71	0x00000071
0x40	0x00000040
22	0x00000016
0x3A	0x0000003A
10	0x0000000A
0x10	0x00000010
0x22	0x00000022
71	0x00000047
40	0x00000028
0x15	0x00000015