

VE370 HW1 Sample Solution

1. 110870 Instructions
2. 1955ns, CPI=2.49
3. 2731ns, 1792ns, 1109ns, 661ns

4. Sample answer:

```
sub $s0, $s0, $s1  
add $s0, $s0, $s2  
addi $s0, $s0, -72
```

5. Sample answer:

```
sll $t2, $t1, 2  
add $t2, $t2, $s5  
lw $t3, 0($t2)  
add $t0, $t0, $t3  
sw $t0, 32($s6)
```

Do not write “lw \$t0, \$s5(\$t2)”

6. Sample answer:

```
B[2] = B;
```

```
a = B[1] + B;
```

```
$s0=0x0000F2A4
```

7. Sample answer:

```
or $t0, $0, $0
```

```
lui $t0, 0x1000
```

```
lbu $s2, 2($t0)
```

8. \$t2 = 1

9. Sample Answer

```
positive: addi $sp, $sp, -4

          sw $ra, 0($sp)

          jal addit

          slt $v0, $zero, $v0

          lw $ra, 0($sp)

          addi $sp, $sp, 4

addit:    add $v0, $a0, $a1

          jr $ra
```

After calling addit:

Address	Content
0x7fffffffcc	old stack
0x7fffffff8	\$ra
0x7fffffff4	\$a0
0x7fffffff0	\$a1