

## 22C:160/055:132 Homework1 solutions

1(a)

```
lw $s0,32($zero)
lw $s1,36($zero)
slt $s2,$s0,$s1
bne $s2,$zero,ELSE
sw $s0,40($s0)
j DONE
ELSE: sw $s1,40($s0)
DONE:
```

1(b)

```
addi $s0, $zero, 1
LOOP: beq $t0, $zero, DONE
add $s0, $s0, $s0
addi $t0, $t0, -1
j LOOP
DONE:
```

2(a)	100011	10001	01011	00000	00000	100100
	35	17	11	36		
2(b)	000000	10010	10101	01001	00000	100010
	0	18	21	9		34
2(c)	000100	10001	10010	00000	00001	000000
	4	17	18	64		
2(d)	101011	10001	10010	00000	00000	010000
	43	17	18	16		

3(a) addi \$t0, \$zero, 8

3(b) add \$t0, \$zero, \$s4

3(c) sll \$t1, \$t0, 2

add \$t0, \$t1, \$t0

3(d) add \$s1, \$s1, \$s2

lw \$t0, 0(\$s1)

4(a) sub \$s4, \$t0, \$zero

4(b) addi \$s0, \$t1, 255

```

5          add $t0, $zero, $zero    # $t0 gets 0
    LOOP:  beq $a1, $zero, FINISH   # finish loop when b == 0
          add $t0, $t0, $a0        # add a to $t0
          subi $a1, $a1, 1         # b = b - 1
          j    LOOP
    FINISH: addi $t0, $t0, 100      # add 100 to $t0
          add $v0, $t0, $zero      # $v0 gets $t0

```

It computes  $a*b+100$