Problem 1(15分)

```
addi x5, x7, -5
add x5, x6, x5
```

Problem 2（15分）

```
slli x2, x28, 2
add x2, x10, x2
lw x4, 0(x2)

slli x3, x29, 2
add x3, x10, x3
lw x5, 0(x3)

add x6, x4, x5
sw x6, 32(x11)
```

Problem 3（40分）

3.1(15分)

排序:

```
int i, j;
for (i = 0; i < 4; ++i) {
    for (j = i + 1; j < 5; ++j) {
        if (Array[i] > Array[j]) {
            int compare = Array[j];
            Array[j] = Array[i];
            Array[i] = compare;
        }
    }
}
```

swap:

```
int temp;
temp = Array[0]
Array[0] = Array[4]
Array[4] = temp

temp = Array[1]
Array[1] = Array[4]
Array[4] = temp

temp = Array[3]
Array[3] = Array[4]
Array[4] = temp
```

3.2（25分）

排序：

```
li x2, 0

outer_loop:
    addi x3, x2, 1
    inner_loop:
        slli x4, x2, 2 # 计算Array[i]的偏移量
        slli x5, x3, 2 # 计算Array[j]的偏移量
        add x4, x4, x22 # 计算Array[i]的地址
        add x5, x5, x22 # 计算Array[j]的地址
        lw x6, 0(x4) # 加载Array[i]的值到寄存器x6
        lw x7, 0(x5) # 加载Array[j]的值到寄存器x7
        ble x6, x7, skip_swap

        sw x7, 0(x4) # 存储Array[j]的值到地址Array[i]
        sw x6, 0(x5) # 存储Array[i]的值到地址Array[j]

    skip_swap:
        # 增加循环变量j
        addi x3, x3, 1
        blt x3, 5, inner_loop
    # 增加循环变量i
    addi x2, x2, 1
    blt x2, 4, outer_loop
    j exit
exit:
    li a7, 10
    ecall
```

swap：

```
    lw t0, 0(x22)

    lw t1, 16(x22)

    sw t0, 16(x22)

    sw t1, 0(x22)

    lw t0, 4(x22)

    lw t1, 16(x22)

    sw t0, 16(x22)

    sw t1, 4(x22)

    lw t0, 12(x22)

    lw t1, 16(x22)
    sw t0, 16(x22)

    sw t1, 12(x22)


    # 结束程序
    li a7, 10
    ecall
```

Problem 4（15分）

Seg	funct7	rs2	rs1	funct3	rd	op
binary value	0000000	00001	00001	000	00001	0110011
meaning	ADD	x1	x1	ADD	x1	R-format

Assembly language instruction:

```
add x1, x1, x1
```

Problem 5（15分）

The opcode is 0x3, the instruction is a I-format instruction.

Seg	imm	rs1	funct3	rd	op
binary	000000000100	11011	010	00011	0000011
meaning	4	x27	LW	x3	I-format

Assembly language instruction:

```
lw x3, 4(x27)
```

Binary value:

```
00000000 01001101 10100001 10000011
```