Homework 1

1.
```
addi x5, x7, -5
add  x5, x5, x6
```

2.
```
addi x5, x0, 4      # x5 = 4
mul  x29, x29, x5   # x29 = 4 * j
mul  x28, x28, x5   # x28 = 4 * i
add  x6, x10, x28   # address of A[i]
add  x7, x10, x29   # address of A[j]
lw   x6, 0(x6)      # x6 = A[i]
lw   x7, 0(x7)      # x7 = A[j]
addi x30, x0, 8     # x30 = 8
mul  x30, x30, x5   # x30 = 8x4
add  x30, x30, x11  # address of B[8]
add  x6, x6, x7     # x6 = A[i] + A[j]
sw   x6, 0(x30)     # B[8] = A[i] + A[j]
```

3. 1)
```
for (int i = 6; i < 11; i++) {
    for (int j=0; j< 10-i; j++){
        int temp =
        if (Array[j] > Array[j+1]) {
            int temp = Array[j];
            Array[j] = Array[j+1];
            Array[j+1] = temp;
        }
    }
}
```

No.
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2)
```
addi  a1, zero, 6          # a1 = i = 6
addi  a2, zero, 11         # a2 = 11 (upper bound of i)
loop1: bge  a1, a2, end    # i ≥ 11, goto end
addi  t1, zero, 0          # t1 = j = 0
addi  t2, zero, 10
sub   t2, t2, a1           # t2 = 10 - i (upper bound of j)
loop2: bge  t1, t2, L1     # j ≥ 10 - i, goto L1
addi  t3, zero, 4          # t3 = 4
mul   t3, t3, t1           # t3 = 4 * j
add   t3, x22, t3          # t3 = addr of Array[j]
lw    t4, 0(t3)            # t4 = Array[j]
addi  t5, t3, 4            # t5 = addr of Array[j+1]
lw    t6, 0(t5)            # t6 = Array[j+1]
bge   t6, t4, L2           # Array[j] ≤ Array[j+1], goto L2
sw    t6, 0(t5)            # Array[j+1] ← A[j]
sw    t4, 0(t3)            # Array[j] ← Array[j+1]
L2: addi  t1, t1, 1        # j++
beq zero, zero, loop2      # goto loop2
L1: addi  a1, a1, 1        # j++
beq zero, zero, loop1      # goto loop1
end:
```

4. R Type. `add x1, x1, x1`

5. I Type. `lw x3, 4(x27)`

0000 0000 0100 1101 1010 0001 1000 0011