Course: ENCM 369
Lab Section: B03
Lab 6
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Part I

```
addiu $sp, $sp, -96
OPCODE: 9
$sp: 29
-96: 0b10100000
```

001001	11101	11101	1111111110100000
9	29	29	-96

So the machine code is 0b00100111101110111111111110100000

0x7fffed80 is already 32 bits long, so it just needs to be represented in base two as 0b01111111111111111110110110000000
The imm field from the machine code above needs to be sign-extended 16 bits into 0b11111111111111111111111110100000

```
        11111111111111111111111        0
       0b01111111111111111110110110000000
     +0b11111111111111111111111110100000
       0b01111111111111111110110100100000
```

Part II

The value of *some offset* needs to be 0xc000 in this case, but 0xc000 is 0b1100000000000000, which cannot fit into a **signed** 16-bit constant. Another way to reach 0x1002c000 is to compute 0x10030000 – 0x4000. Since -0x4000 can fit into a signed 16-bit constant, it will be ok. -0x4000 is equal to -16384.

```
lui   $at, 0x1003
lw    $t0, -16384($at)
```