

Assembly Review

These problems are practice only. They are not due for credit.

1. Convert the following line of Java code to assembly: `t0 = t1 + t2 + t3 - t4 + t5`
2. Convert the following line of Java code to assembly: `t0 = (t1 ^ t2) & (t3 | !t4)`
3. Convert the following Java code to assembly. Your answer *must* use `slt`. Do not use any pseudoinstructions.

```
if (t1 - 6 < t2) {
    t0 = t1;
} else {
    t0 = t2 + 4;
}
t1 = t1 + 7
```

4. Describe in common English what the following function does. Hint: It takes three parameters, all integers.

```
mysteryFunction1:
slt $t0, $a0, $a1
slt $t1, $a1, $a2
and $v0, $t0, $t1
jr $ra
```

5. Describe in common English what the following function does. Hint: It takes two integer parameters. `sra` stands for “shift right arithmetic”. It moves all the bits in the register to the right the specified amount.

```
mysteryFunction2:
add $v0, $a0, $a1
sra $v0, $v0, 1
jr $ra
```

6. Convert the following Java code to assembly:

```
t1 = 0;
for (int t0 = a0; t0 >= 0; t0--= a1) {
    t1 += t0;
}
return t1;
```