

## TUTORIAL 2

v0 does not have to be saved as caller, as v0 is a return value

Q1

Main	F	G
Callee: \$ra, \$s0, \$s1	Callee: \$ra, \$s0, \$s1	Callee: \$ra, \$s3
Caller: \$a0	Caller: \$a0, \$t1	Caller: -

(Register Addressed)

Q2

~~Opcode~~ will increase from 5 to 6 bits  
Rc, Rt, Rd

Q3

$$\frac{2^{16} - 1}{4} \quad \begin{matrix} \text{(space available)} \\ \text{1: 2 complement} \end{matrix} \Rightarrow 2^{13} - 1 \Rightarrow 8191$$

4 (space req for int)

Q4

(a) Yes  
(p1.0, p2.0)

(b) Since \$s1, \$s0 are both callee preserved, # swapping them shouldn't cause an issue (so, YES)  
(q1.0, q2.0)

2

a) Yes (p1.0, p2.0) (b) No, since we are using an external library, there <sup>callee (temporary)</sup> ~~is~~ ~~not~~ and \$t1, \$s0 are ~~not~~ and caller saved respectively.

t0 is caller saved and s0 is callee saved