Q2)

lw $s0, 32($t2)

+ The ALU computes the sum of the value read from the register file and the sign-extended, lower 16 bits of the instruction (offset).

+ The sum from the ALU is used as the address for the data memory.

+ The data from the memory unit is written into the register file; the register destination is given by bits 20:16 of the instruction ($s0).