

Instruction	RTL	Registers						Memory		
		A	B	PC	IR	MAR	MBR	12 (X)	13 (Y)	14 (Z)
Initial	–	??	??	00	20	??	??	00	41	F4
LOAD Z (21)	$MAR \leftarrow 14$ $MBR \leftarrow M[MAR]$ $A \leftarrow MBR$ $PC \leftarrow PC + 2$ $IR \leftarrow M[PC]$	F4	??	02	10	14	F4	00	41	F4
MOV B, A (10)	$B \leftarrow A$ $PC \leftarrow PC + 2$ $IR \leftarrow M[PC]$	F4	F4	04	21	14	F4	00	41	F4
LOAD Y (21)	$MAR \leftarrow 13$ $MBR \leftarrow M[MAR]$ $A \leftarrow MBR$ $PC \leftarrow PC + 2$ $IR \leftarrow M[PC]$	41	F4	06	50	13	41	00	41	F4
SUB B, A (50)	$B \leftarrow B - A$ $PC \leftarrow PC + 2$ $IR \leftarrow M[PC]$	41	B3	08	31	13	41	00	41	F4
STORE X (31)	$MAR \leftarrow 12$ $MBR \leftarrow A$ $M[MAR] \leftarrow MBR$ $PC \leftarrow PC + 2$ $IR \leftarrow M[PC]$	41	B3	0A	00	12	41	41	41	F4

For each instruction in the program, above, fill out the entire row of register and memory values after that instruction executes. Highlight in bold any values that have changed as a result of this current instruction.