

Instruction	RTL	Registers						Memory		
		A	B	PC	IR	MAR	MBR	12 (X)	13 (Y)	14 (Z)
Initial	–	??	??	00	20	??	??	E8	1A	00
LOAD Y (20)	$MAR \leftarrow 13$ $MBR \leftarrow M[MAR]$ $A \leftarrow MBR$ $PC \leftarrow PC + 2$ $IR \leftarrow M[PC]$	<b>1A</b>	??	<b>02</b>	<b>10</b>	<b>13</b>	<b>1A</b>	E8	1A	00
MOV B, A (10)	$B \leftarrow A$ $PC \leftarrow PC + 2$ $IR \leftarrow M[PC]$	1A	<b>1A</b>	<b>04</b>	<b>20</b>	13	1A	E8	1A	00
LOAD X (20)	$MAR \leftarrow 12$ $MBR \leftarrow M[MAR]$ $A \leftarrow MBR$ $PC \leftarrow PC + 2$ $IR \leftarrow M[PC]$	<b>E8</b>	1A	<b>06</b>	<b>40</b>	<b>12</b>	<b>E8</b>	E8	1A	00
ADD A, B (40)	$A \leftarrow A + B$ $PC \leftarrow PC + 2$ $IR \leftarrow M[PC]$	<b>02</b>	1A	<b>08</b>	<b>30</b>	12	E8	E8	1A	00
STORE Z (30)	$MAR \leftarrow 14$ $MBR \leftarrow A$ $M[MAR] \leftarrow MBR$ $PC \leftarrow PC + 2$ $IR \leftarrow M[PC]$	02	1A	<b>0A</b>	<b>00</b>	<b>14</b>	<b>02</b>	E8	1A	<b>02</b>

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.