1) .

CLK

Go

$A=1010_2 = 10$;
$B=0111_2 =7$

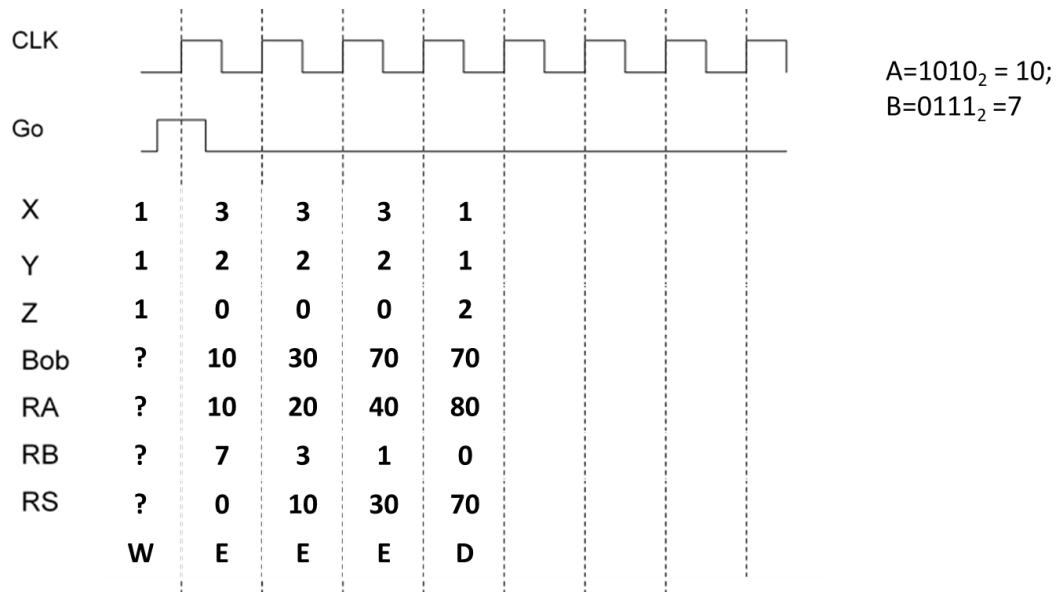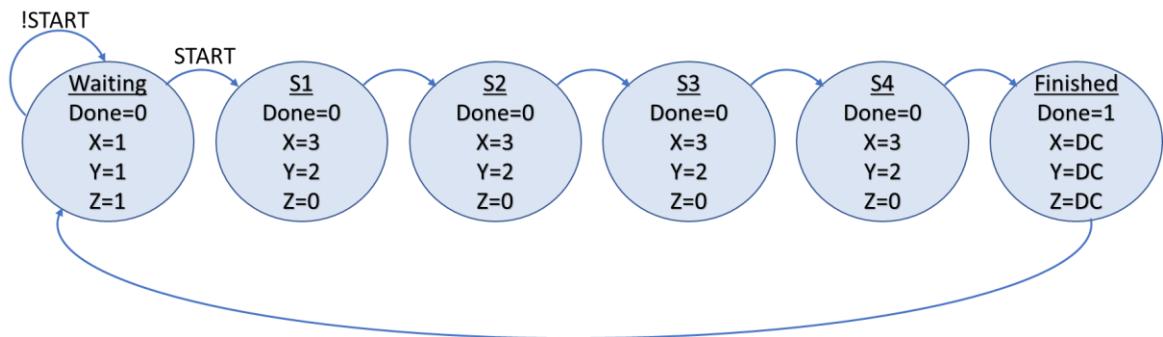| X	1	3	3	3	1
Y	1	2	2	2	1
Z	1	0	0	0	2
Bob	?	10	30	70	70
RA	?	10	20	40	80
RB	?	7	3	1	0
RS	?	0	10	30	70
	W	E	E	E	D

State names could vary and my be left out. What happens after the last state shown could vary a bit. In particular X, Y and Z could be don't cares. Most folks did this in binary (as expected) but decimal works too of course…
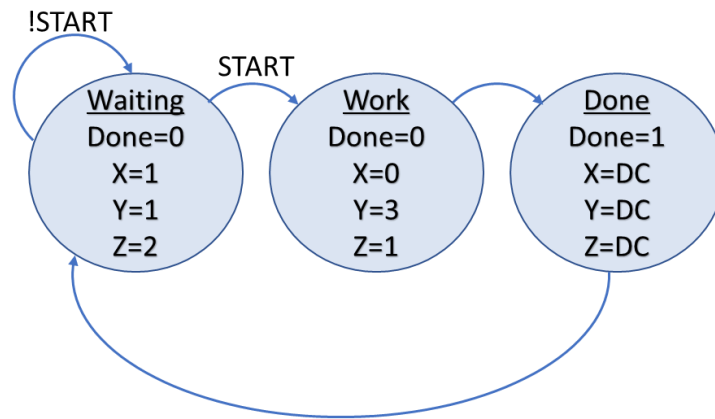
2) .   !START

START

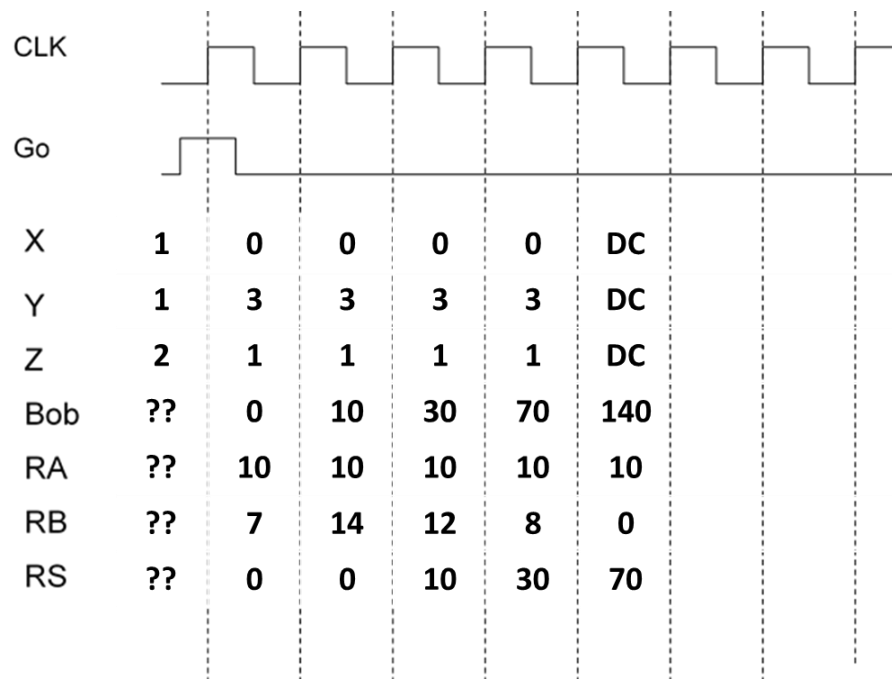| Waiting	S1	S2	S3	S4	Finished
Done=0	Done=0	Done=0	Done=0	Done=0	Done=1
X=1	X=3	X=3	X=3	X=3	X=DC
Y=1	Y=2	Y=2	Y=2	Y=2	Y=DC
Z=1	Z=0	Z=0	Z=0	Z=0	Z=DC

3) .

   a. You'll want to know when you are on the last 1 in the value for RB, that's 0x8. But you also need to worry about B=0 as an input, so RB=0 or RB=8 is what you'd want. We'll name it "Zero/eight".

b.   .

!START → Waiting (Done=0, X=1, Y=1, Z=2) → START → Work (Done=0, X=0, Y=3, Z=1) → Done (Done=1, X=DC, Y=DC, Z=DC) → Waiting

c.

$A=1010_2 = 10;$
$B=0111_2 =7$

CLK						
Go						
X	1	0	0	0	0	DC
Y	1	3	3	3	3	DC
Z	2	1	1	1	1	DC
Bob	??	0	10	30	70	140
RA	??	10	10	10	10	10
RB	??	7	14	12	8	0
RS	??	0	0	10	30	70