ECE571: Introduction to SystemVerilog
FALL-2025

Homework-1

By
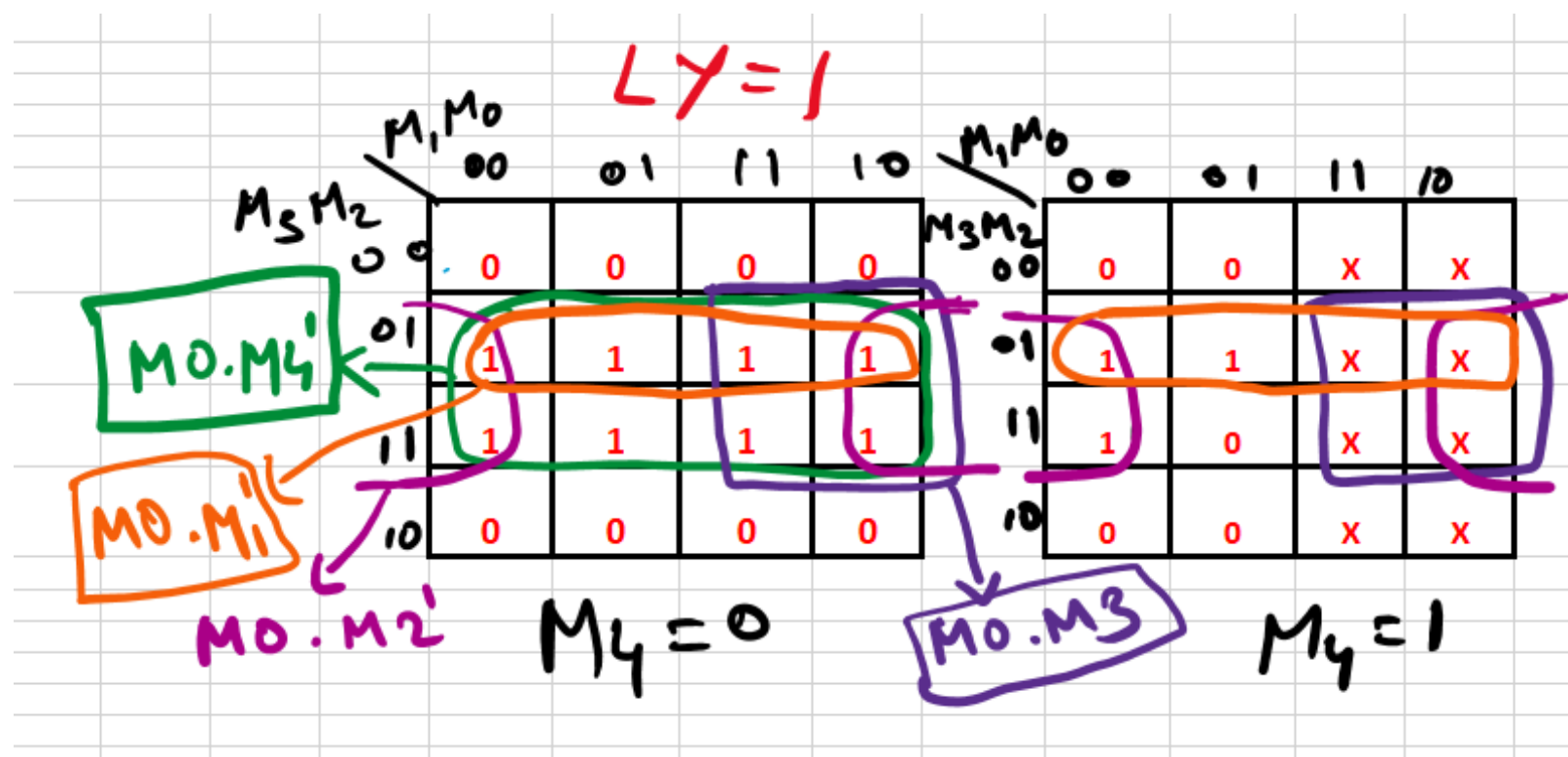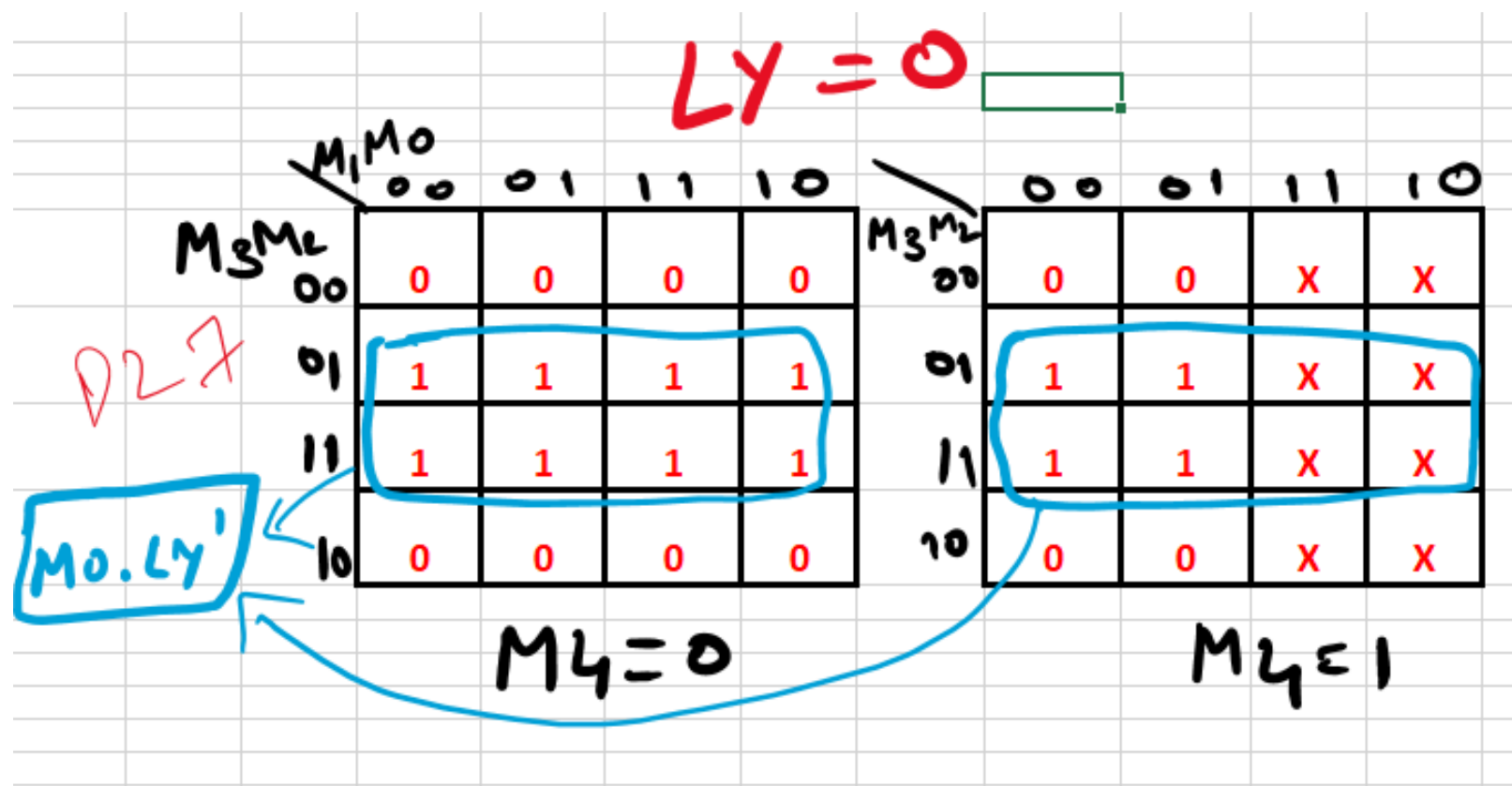**Venkata Sriram Kamarajugadda**
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Truth Table

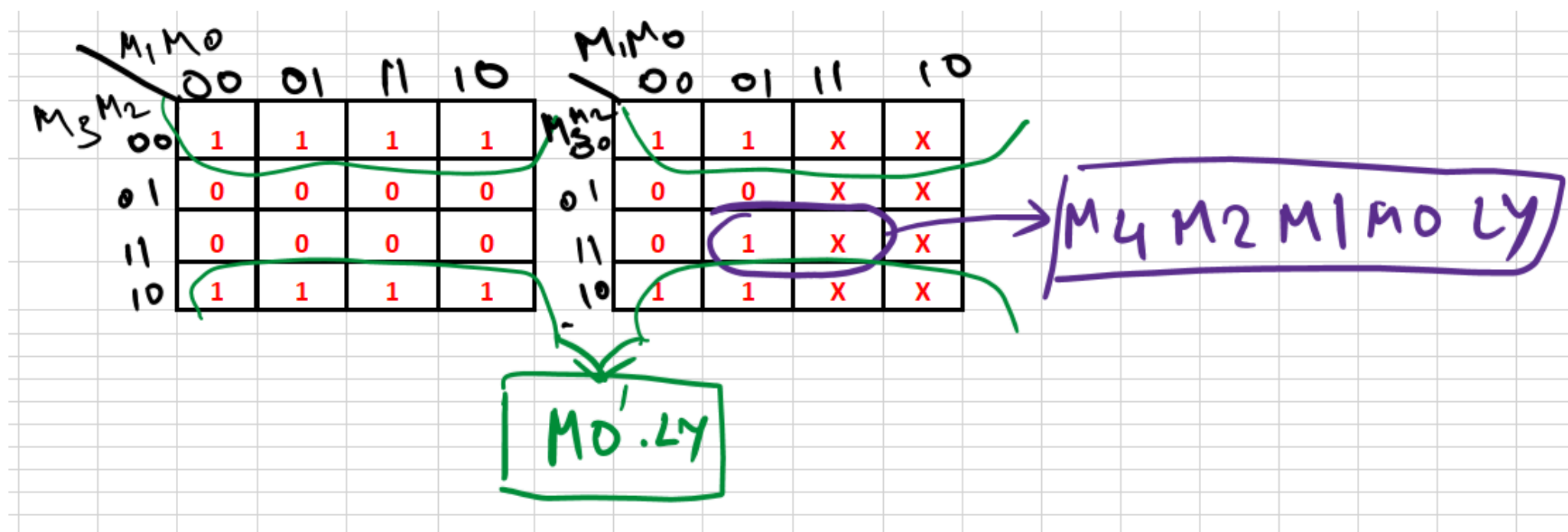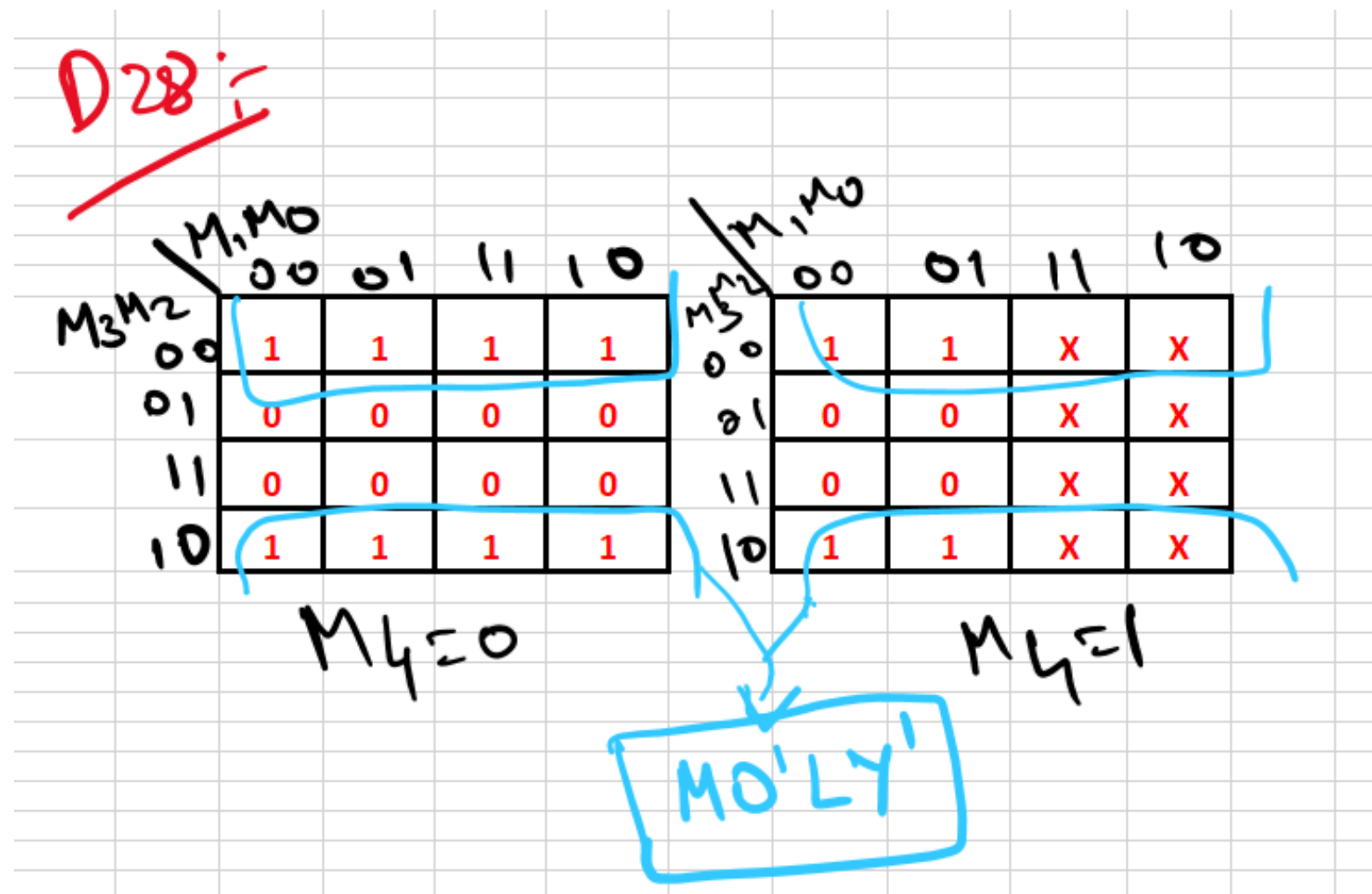| Month							Outputs	
Martian Calendar Days								
TRUTH TABLE								
Inputs							**Outputs**	
Month								
	Encoded							
Month	M4	M3	M2	M1	M0	LY	D27	D28
Sagittarius	0	0	0	0	0	X	0	1
Dhanus	0	0	0	0	1	X	1	0
Capcricornus	0	0	0	1	0	X	0	1
Makara	0	0	0	1	1	X	1	0
Awuarius	0	0	1	0	0	X	0	1
Kumbha	0	0	1	0	1	X	1	0
Pisces	0	0	1	1	0	X	0	1
Mina	0	0	1	1	1	X	1	0
Aries	0	1	0	0	0	X	0	1
Mesha	0	1	0	0	1	X	1	0
Taurus	0	1	0	1	0	X	0	1
Rishabha	0	1	0	1	1	X	1	0
Gemini	0	1	1	0	0	X	0	1
Mithuna	0	1	1	0	1	X	1	0
Cancer	0	1	1	1	0	X	0	1
Karka	0	1	1	1	1	X	1	0
Leo	1	0	0	0	0	X	0	1
Simha	1	0	0	0	1	X	1	0
Virgo	1	0	0	1	0	X	0	1
Kanya	1	0	0	1	1	X	1	0
Kibra	1	0	1	0	0	X	0	1
Tula	1	0	1	0	1	X	1	0
Scorpius	1	0	1	1	0	X	0	1
Vrishika	1	0	1	1	1	0	1	0
Vrishika	1	1	0	0	0	1	0	1
unused	1	1	0	0	0	X	X	X
unused	1	1	0	0	1	X	X	X
unused	1	1	0	1	0	X	X	X
unused	1	1	0	1	1	X	X	X
unused	1	1	1	0	0	X	X	X
unused	1	1	1	0	1	X	X	X
unused	1	1	1	1	0	X	X	X
unused	1	1	1	1	1	X	X	X

D27 K-Map

From above eq"s ⇒ D27 = M0.LY' + M0.M4' + M0.M3 + M0.M2' + M0.M1'

$$D27 = M0(M1' + M2' + M3 + M4' + LY')$$

D27 = M0.LY' + M0.M4' + M0.M3 + M0.M2' + M0.M1'
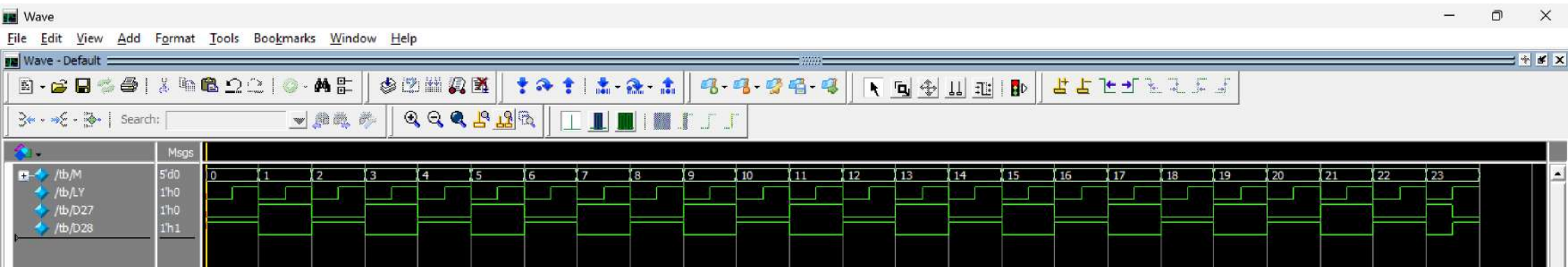
D27 = M0(LY' + M4' + M3 + M2' + M1)

D28 K-Map

From above eqⁿs:- D28 = M0'LY' + M0'LY + M4 M2 M1 M0 LY

$= M0' (LY' + LY)' + M4 M2 M1 M0 LY$

D28 = M0' + M4 M2 M1 M0 LY

D28 = M0.LY' + M0.LY' + M4.M2.M1.M0.LY

D28 = M0' + (M4.M2.M2.M0.LY)

Thank You