Solutions to Homework 3

Problem 1

Switching Network 1:

	V_0	V^+	V^-	V_A	V_B	V_X	V_Y
State 0	0	0	0	0	0	0	0
State 1	12	12	0	0	0	0	0
State 2	24	12	12	24	0	0	0
State 3	24	12	6	18	6	0	6
State 4	24	12	12	24	0	24	0
State 5	24	12	12	24	0	24	0
State 6	0	0	0	0	0	0	0

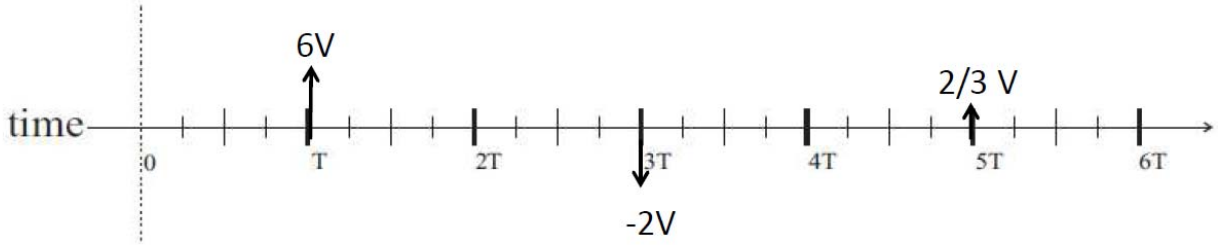
Problem 2

Switching Network 2:

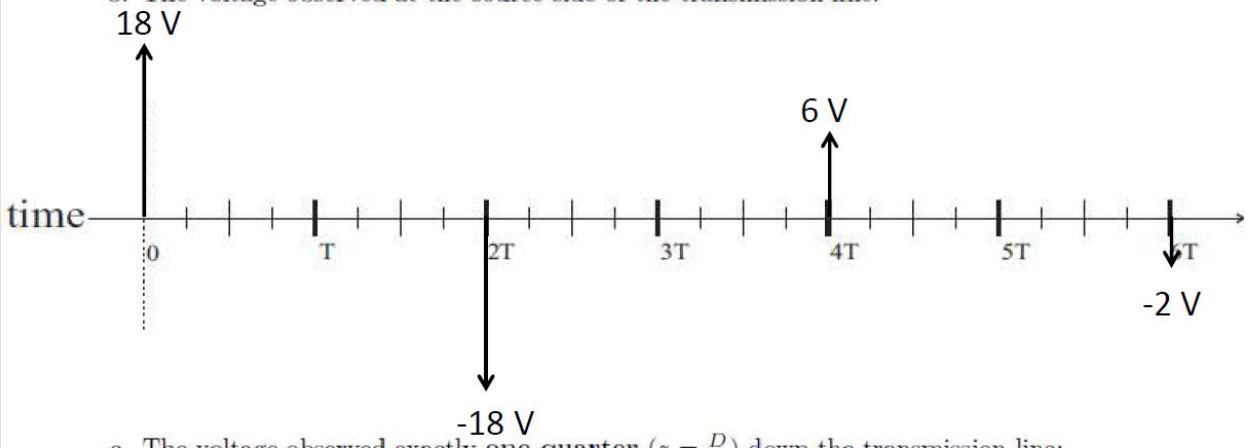
	V_1	V_M	V_2	V_1^+	V_2^-
State 0	0	0	0	0	0
State 1	7.5	0	0	0	0
State 2	10	10	10	7.5	5
State 3	10	10	10	7.5	-5/3
State 4	6	6	6	9/2	-3

Problem 3

a. The voltage observed at the load side of the transmission line:



b. The voltage observed at the source side of the transmission line:



c. The voltage observed exactly **one-quarter** ($z = \frac{D}{4}$) down the transmission line: