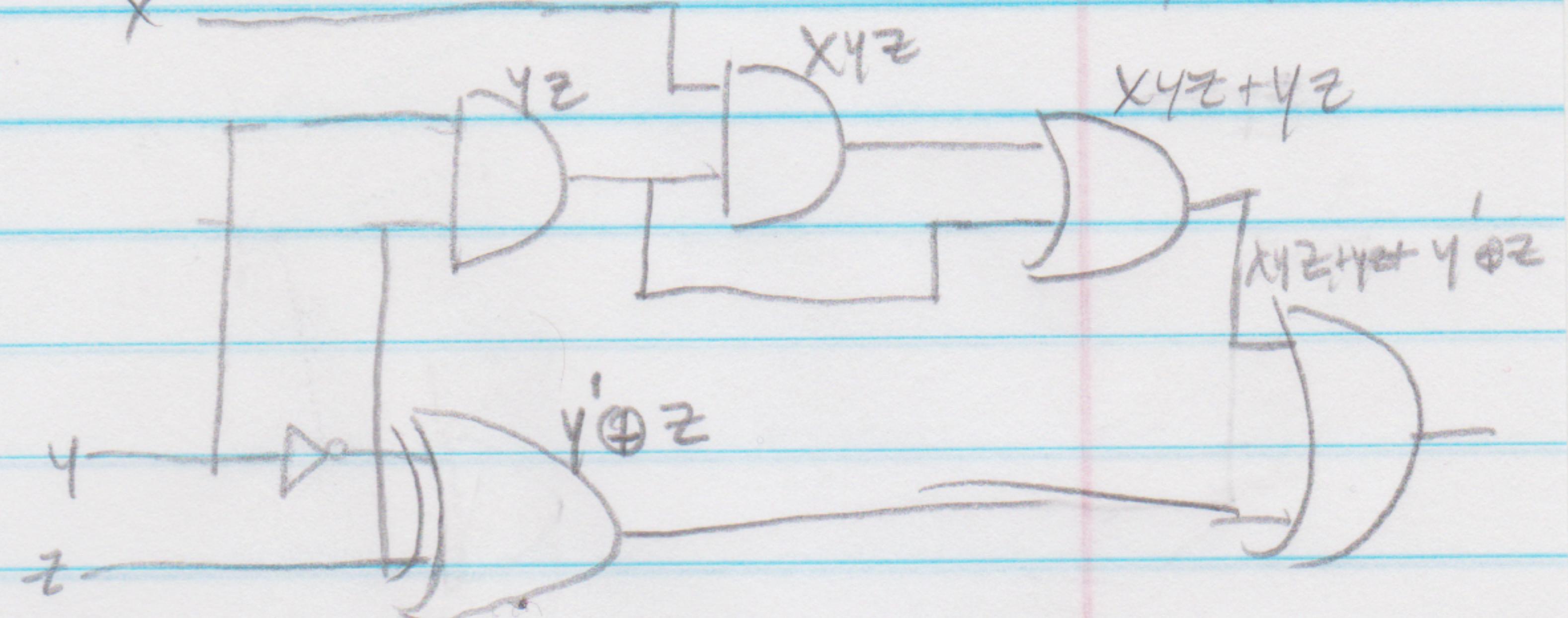


x	y	z	f
0	0	0	1
0	0	1	0
0	1	0	0
0	1	1	1
1	0	0	1
1	0	1	0
1	1	0	0
1	1	1	1



$$xyz + yz + y'z' \quad * \text{recall } a \oplus b = ab' + a'b$$

$$b) xyz + yz + y'z' + yz \quad \text{Combine like-terms}$$

$$xyz + yz + y'z' \quad \text{Distributive}$$

$$yz(x+1) + y'z' \quad * x+1 = 1$$

$$c) \boxed{yz + y'z'}$$

$$2) yz + y'z' \quad (5 \text{ gates}) \quad \text{DeMorgan's} = y'z' = (y+z)'$$

$$yz + (y+z)' \quad (4 \text{ gates} + 3 \text{ gates})$$

- AND

- OR

- NOR

y	z	g
0	0	1
0	1	0
1	0	0
1	1	1

- X variable does not affect output, and it is shown that the truth table from 1a is repeated twice as y and z change.