

Ex 568-569

Rev. Ex 1-9 all

See Back of Book

Exercise: 1, 6, 7, 8, 9

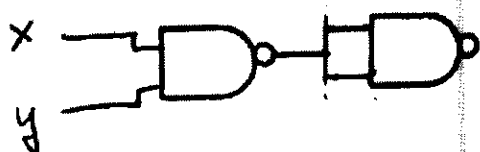
11.54  
Discrete Math

① {OR, NOT}

$$x \wedge y = \overline{\overline{x} \vee \overline{y}}$$

$\therefore$  AND gate can be constructed using 3 NOT gates and 1 OR gate.

⑥



⑦

$$(x \uparrow y) \uparrow (x \uparrow y)$$

⑧

x	y	z	(A)	(B)
1	1	1	1	1
1	1	0	0	1
1	0	1	0	0
1	0	0	0	1
0	1	1	1	0
0	1	0	0	1
0	0	1	0	0
0	0	0	0	1

$$(A) = x \uparrow (y \uparrow z) = x \overline{yz} = \overline{x} + yz$$

$$(B) = (x \uparrow y) \uparrow z = \overline{xy} z = xy + \overline{z}$$

column (A)  $\neq$  (B)

$$\therefore x \uparrow (y \uparrow z) \neq (x \uparrow y) \uparrow z$$

⑨

$$y_1 = x_1 x_2 \vee (\overline{x_2} \vee \overline{x_3})$$

$$y_2 = \overline{x_2 \vee x_3}$$