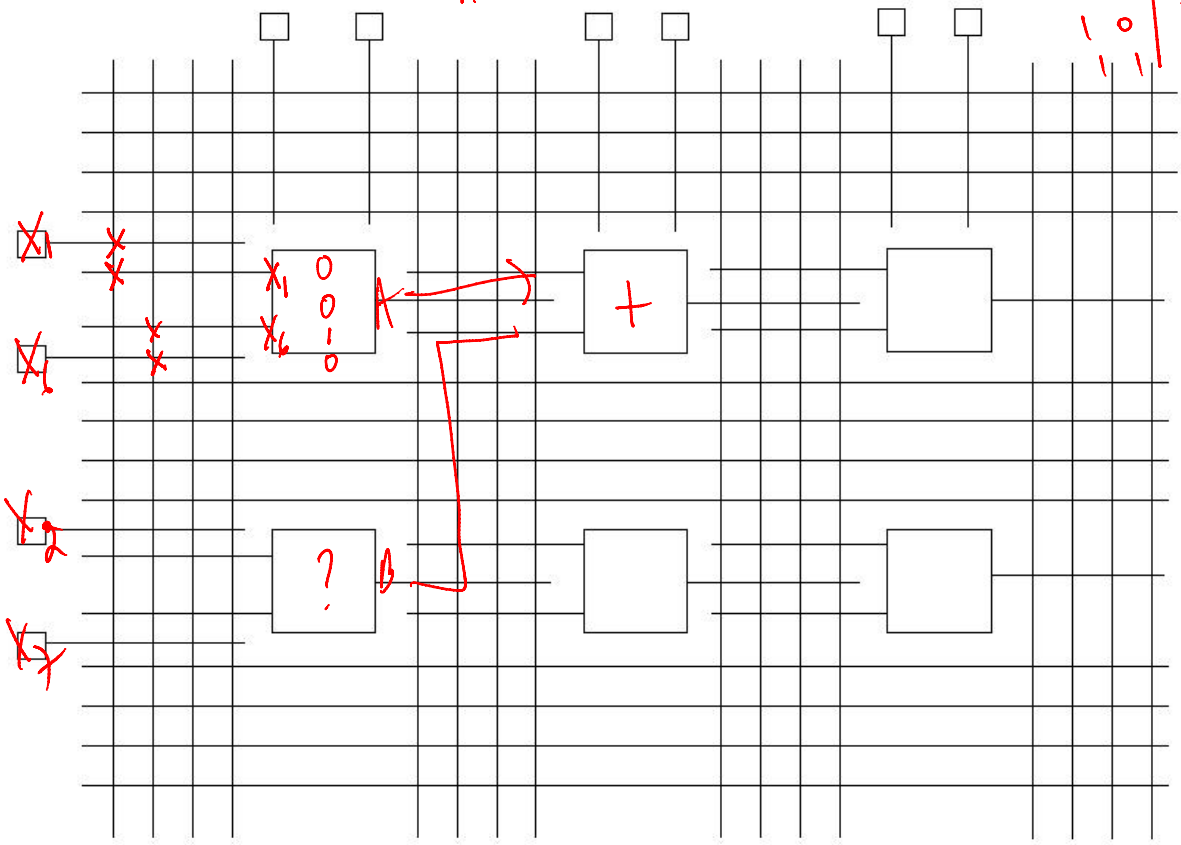
Wednesday, February 18, 2009
11:40 AM

$$f = (\overline{x_1}\overline{x_6} + x_2x_3)(x_3 + x_4x_5)$$

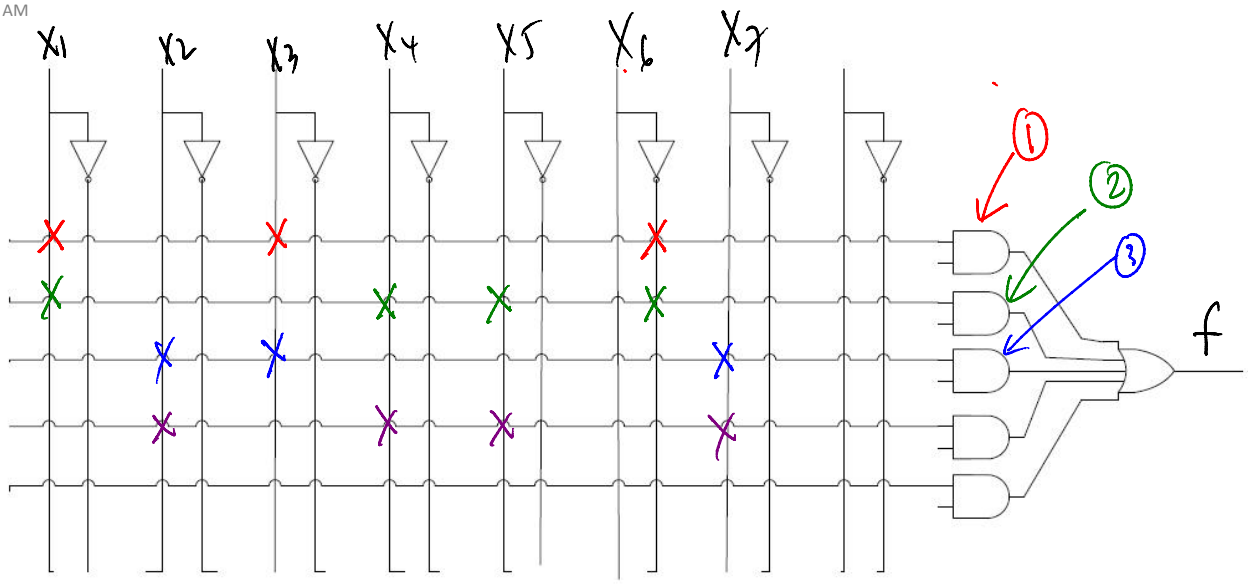
A B

x_1	x_6	$x_1\overline{x_6}$
0	0	0
0	1	0
1	0	1
1	1	0



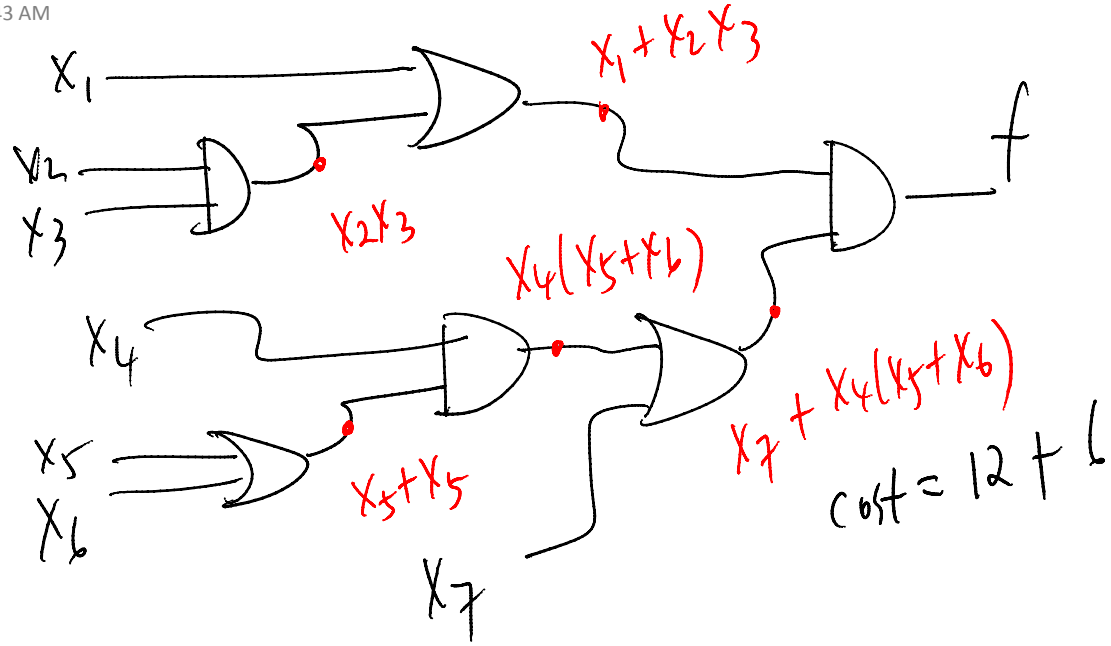
page 91

Wednesday, February 18, 2009
11:43 AM



$$f(x_1, x_2, \cdots x_7) = \underbrace{x_1 x_3 \bar{x}_6}_{1} + \underbrace{x_1 x_4 x_5 \bar{x}_6}_{2} + \underbrace{x_2 x_3 x_7}_{3} + \underbrace{x_2 x_4 x_5 x_7}_{4}$$

Wednesday, February 18, 2009
11:43 AM



$$f = (x_1 + x_2x_3)(x_7 + x_4(x_5 + x_6))$$

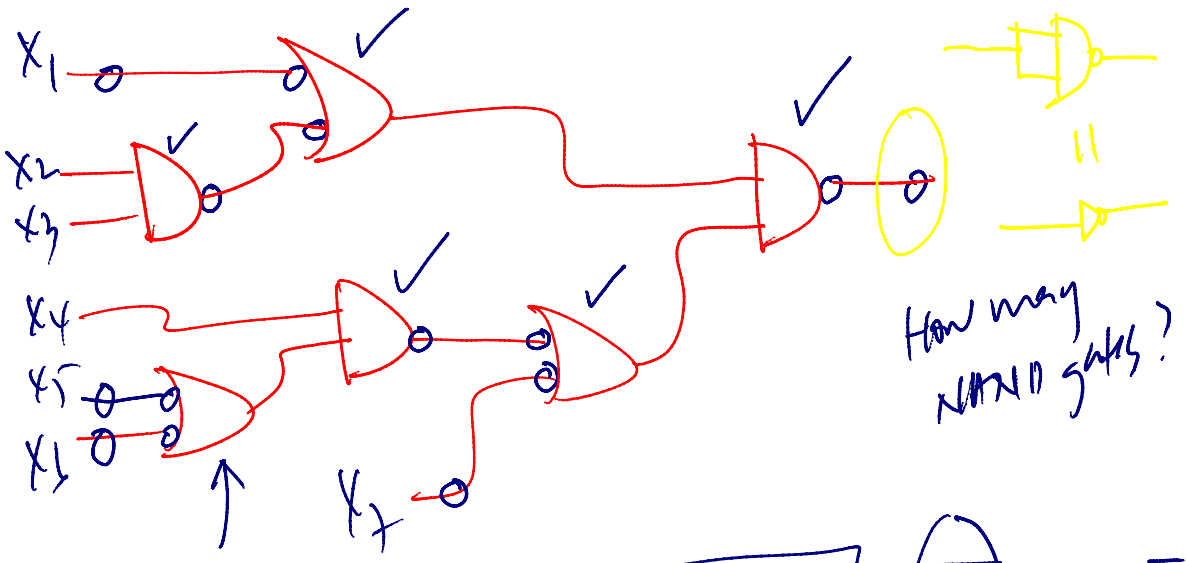
$$= (x_1 + x_2x_3)(x_7 + x_4x_5 + x_4x_6)$$

$$= x_1x_7 + x_1x_4x_5 + x_1x_4x_6 + x_2x_3x_7 +$$

$$x_2x_3x_4x_5 + x_2x_3x_4x_6$$

$$\text{cost} = 25 + 7 = 32$$

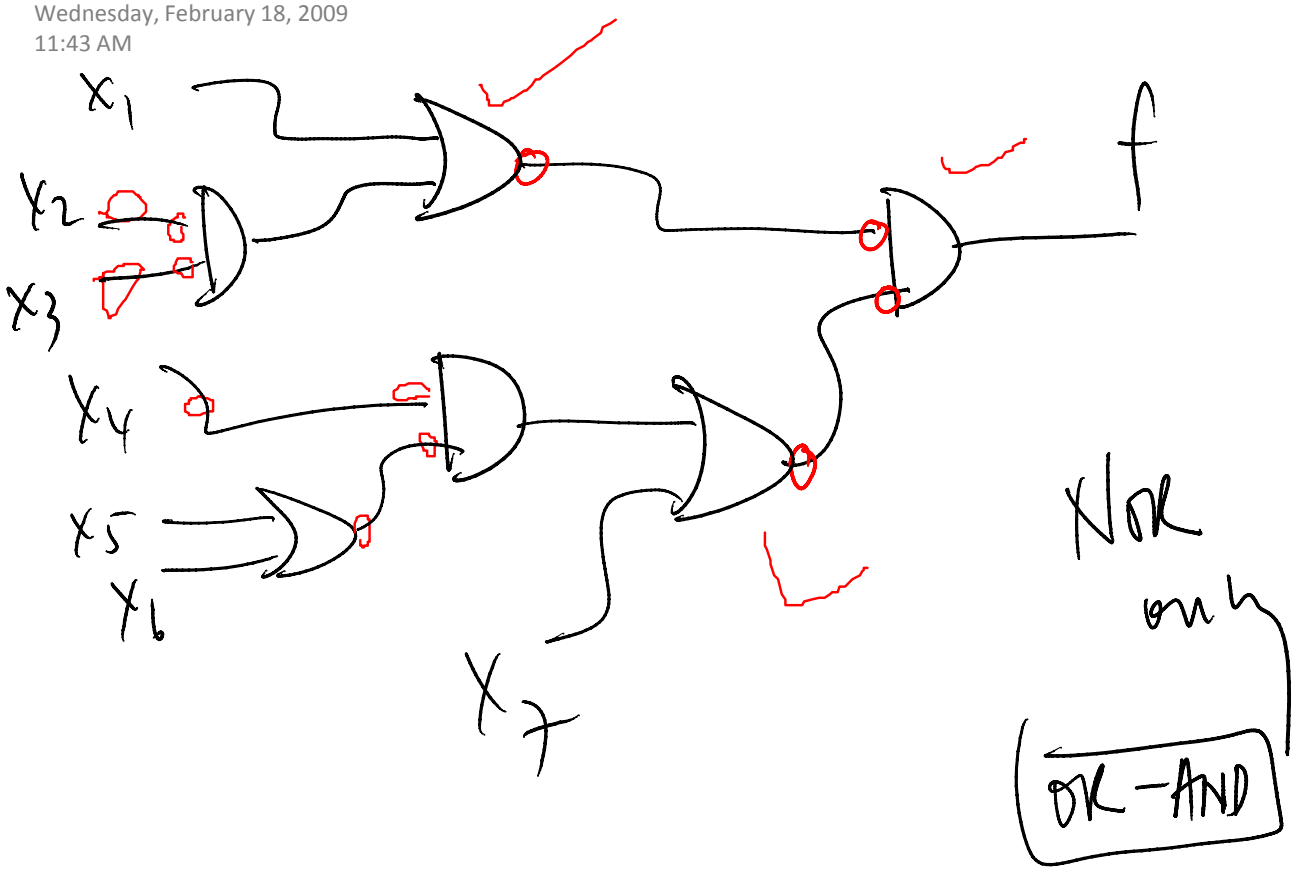
Wednesday, February 18, 2009
11:43 AM



NAND only → AND-OR $\overline{xy} = \bar{x} + \bar{y}$

NOR only → OR-AND $\overline{x+y} = \bar{x}\bar{y}$

Wednesday, February 18, 2009
11:43 AM



9 NORgates

Show problem 4.22.