Chapter 3

3-4.*

The longest path is from input C or $\overline{D}$.

0.078 ns + 0.078 ns + 0.052 ns + 0.078 ns = 0.286 ns

3-9.*

				P-Logic				N-Logic			
X	Y	NAND	NOR	X	Y	NAND	NOR	X	Y	NAND	NOR
L	L	H	H	0	0	1	1	1	1	0	0
L	H	H	L	0	1	1	0	1	0	0	1
H	L	H	L	1	0	1	0	0	1	0	1
H	H	L	L	1	1	0	0	0	0	1	1

3-11.*

$F = AB + AC$
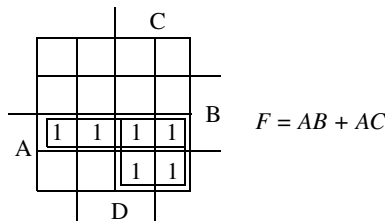
3-24.* (Errata: Replace equations with F = $\overline{W}$ and G = $\overline{W}\,\overline{Y}$ + WZ. See Fig. 4-10 for decoder diagram/table.)

$$F = \overline{\overline{D_{0U}} \cdot \overline{D_{1U}} \cdot \overline{D_{2U}} \cdot \overline{D_{3U}}} = D_{0U} + D_{1U} + D_{2U} + D_{3U} = \overline{W}(\overline{X}\overline{Y} + \overline{X}Y + X\overline{Y} + XY) = \overline{W}$$

$$G = \overline{\overline{D_{0U}} \cdot \overline{D_{2U}} \cdot \overline{D_{1L}} \cdot \overline{D_{2L}}} = D_{0U} + D_{2U} + D_{1L} + D_{3L} = \overline{W}(\overline{X}\overline{Y} + X\overline{Y}) + W(\overline{X}Z + XZ)$$

$$= \overline{W}\overline{Y} + WZ$$