Solutions to Problems Marked with a * in
Logic and Computer Design Fundamentals, 3rd Edition
Chapter 10
(Updated 9/21/06) © 2004 Pearson Education, Inc.

10-2.*

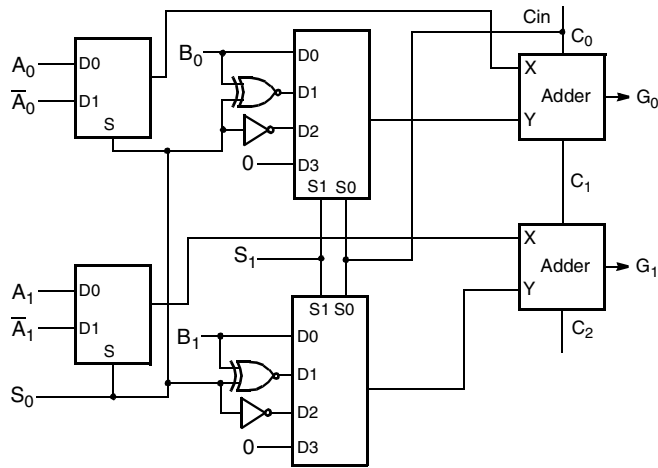$$C = C_8$$
$$V = C_8 \oplus C_7$$
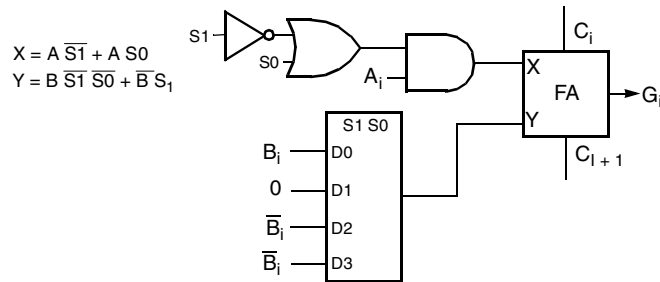$$Z = \overline{F_7 + F_6 + F_5 + F_4 + F_3 + F_2 + F_1 + F_0}$$
$$N = F_7$$

10-3.*

$$X = S_0\overline{A} + \overline{S}_0A$$

$$Y = \overline{S}_1 \overline{C}_{in} B + \overline{S}_1S_0 B + \overline{S}_1\overline{S}_0\overline{B} + S_1\overline{S}_0\overline{C}_{in}$$

10-4.*

$$X = A \overline{S1} + A S0$$
$$Y = B \overline{S1}\ \overline{S0} + \overline{B} S_1$$

10-6.*(Updated 9/21/06)

a) XOR = 00,   NAND = 01,   NOR = 10   XNOR = 11

Out = $S_1 \overline{A}\ \overline{B} + \overline{S}_1A\overline{B} + \overline{S}_1\overline{A}B + S_1S_0AB$ + (one of $S0\ \overline{A}\ \overline{B}$ or $\overline{S}_1S_0\overline{A}$)

b) The above is a simplest result.

10-8.*

(a) 0101   (b) 0110   (c)1010   (d) 0110

10-10.*

(a)	$R5 \leftarrow R4 \wedge \overline{R5}$	R5 = 0000 0100	(d)	$R5 \leftarrow R0$	R5 = 0000 0000
(b)	$R6 \leftarrow R2 + \overline{R4} + 1$	R6 = 1111 1110	(e)	$R4 \leftarrow sr\text{Constant}$	R4 = 0000 0011
(c)	$R5 \leftarrow R0$	R5 = 0000 0000	(f)	$R3 \leftarrow \text{Data in}$	R3 = 0001 1011

10-14.*

a) Opcode = 7 bits   b) 20 bits   c) 1,048,576   d) –524288 to +524287