

$$2-3a) \quad w = \overline{A \oplus B}$$

$$x = \overline{AC}$$

$$y = w \oplus x = (\overline{A \oplus B}) \oplus \overline{AC}$$

A	B	C	w	x	y
0	0	0	1	1	0
0	0	1	1	1	0
0	1	0	0	1	1
0	1	1	0	1	1
1	0	0	0	1	1
1	0	1	0	0	0
1	1	0	1	1	0
1	1	1	1	0	1

$$b) \quad y = w \oplus x = w\bar{x} + \bar{w}x =$$

$$= (\overline{A \oplus B}) \overline{AC} + (A \oplus B) AC =$$

$$= (\overline{AB + \bar{A}\bar{B}}) \overline{AC} + (AB + \bar{A}\bar{B}) AC =$$

$$= \overline{AB} \overline{AC} + \overline{\bar{A}\bar{B}} AC + AB AC + \bar{A}\bar{B} AC =$$

$$= \overline{AB} \overline{AC} + AC + AB AC + \bar{A}\bar{B} AC =$$

$$= \overline{AB} \overline{AC} + AC + ABC + \bar{A}\bar{B} AC =$$

$$= \overline{AB} \overline{AC} + AC + ABC + \bar{A}\bar{B} AC =$$

$$= \overline{AB} \overline{AC} + AC + ABC + \bar{A}\bar{B} AC =$$

$$c)$$

		BC			
		00	01	11	10
A	0	0	0	1	1
	1	1	0	1	0

$$\Rightarrow y = BC + \overline{AB} + A\bar{B}\bar{C}$$