

HW 12

1) a) 0

b) false

c)  $\sim B = \{b, d, e, f, 1, 3, 5, 7, 8, 9\}$

d)  $A \cap B = \{a\}$

e)  $(\cup - B) \cup C = \{b, d, e, f, 1, 2, 3, 4, 5, 7, 8, 9\}$

f) False

2) a)  $A \times B = \{(a, a), (a, c), (a, 2), (a, f), (a, 6), (b, a), (b, c), (b, 2), (b, f), (b, 6)\}$

b)  $A \times C = \{(a, f), (b, f)\}$

c) 40

d) True

HW 15

1) a)  $2^{|A|} = 8$

b)  $2^A = 8$

c)  $2^C = 1 \{\emptyset\}$

d)  $2^D = 2 \{\emptyset, \{\emptyset\}\}$

e)  $|2^E| = 4$

f)  $2^F = 1024$

~~$\{ \emptyset, \{ \emptyset \} \}$~~  =  ~~$\{ \emptyset, \{ \emptyset, \emptyset \} \}$~~

2) a)  $G = \langle 1101111100 \rangle$

b)  $H = \langle 0101010101 \rangle$

c)  $G \cap H = \{w, r, y, i\}$

$\langle 0101010100 \rangle$

d)  $G \cup H = \{e, w, r, t, y, u, i, p\}$

$\langle 1101111101 \rangle$

e)  $G - (\sim H)$   $(\sim H) = \{e, c, t, u, o\}$

$G - (\sim H) = \{w, r, y, i\}$

$\langle 0101010100 \rangle$