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Homework 1

260-02 Fischer

2) a)  $172_{10}$  to binary

$10101100$

$172 \quad 44 \quad 12 \quad 4$   
 $-128 \quad -32 \quad -8 \quad -4$   
 $44 \quad 12 \quad 4 \quad 0$

b)  $10110011_2$  to  $dec_{10}$

$128 + 32 + 16 + 2 + 1 = 179_{10}$

c)  $237_{10}$  to  $hex_{16} \Rightarrow 0xEB_{16}$

$11101011$   
 $14=E \quad 11=B$

d)  $0x7D32$  to  $dec_{10}$

binary:  $0111110000110010$   
 $16384 \quad 8192 \quad 4096 \quad 2048 \quad 1024 \quad 512 \quad 256 \quad 128$   
 $= 31795_{10}$

e)  $0x4F_{16}$  to binary

$11001111$

3)	A/B	A&&B	A  B	A && (A  B)	A   (B&&A)	(~A)&& (A   (B&&B))
	F/F	F	F	F	F	F F F
	F/T	F	T	F	F	T T T
	T/F	F	T	T	T	F T F
	T/T	T	T	T	T	F T T

4 a)  $17 \& 14$

$10001$   
 $\& 01110$

$00000 = 0_{10}$

b)  $32 << 2$

orig.:  $100000$   
 $10000000$

$= 128_{10}$

c)  $137 \}$

$1107 \}$

$10001001$   
 $10110101$   
 $11101011$   
 $= 235_{10}$

d)  $73 \& 01001001$

$\& 1 \& 00000001$

$1 = 1_{10}$

e)  $73 \}$

$1 \}$

$1001001$   
 $0000001$   
 $1001001$   
 $= 72_{10}$