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Computer Arch.

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HW 1

Problem Set:

Ch. 1; 4, 5, 9, 10, 12, 13, 14

4) 16-bit register can store  
 $2^{16}$  bit patterns

• The largest number you could store on 2's compl. would be  $2^{15}-1$

• The smallest would be  $-2^{15}$

• The largest unsigned would be 65536

5) 2) 1001 1100 1110 1110

To hex:

0x 9 C E E

To signed decimal:

0110	0011	0001	0001
0110	0011	0001	0010

-25362

ii) 1111 1111 1111 1111

To hex: 0xF F F F

To signed decimal:

0000	0000	0000	0000
0000	0000	0000	0001
-1			

iii) 0000 0000 1111 1111

to hex: 0x0 0 F F

to dec:

1111	1111	0000	0000
1111	1111	0000	0001
65281			

iv) 0100 1000 1000 0100

to hex: 0x4 8 8 4

to dec. 18564

9)  $0x\ 46\ 72\ 65\ 64 = \text{Fred}$

10)  $0x\ 45\ 61\ 73\ 79 = \text{E a S Y}$

12) It will not work because  
the software was written  
on an pentium compiler that  
uses its own assembly language.

13) It will work on most  
any machine.

14) They are slow!