

## HW1

Adel Fallatah

### Q6

- a-  $1110 = 14$
- b-  $1010 = 10$
- c-  $11100 = 28$
- d-  $10000 = 16$
- e-  $10101 = 21$
- f-  $11101 = 29$
- g-  $10111 = 23$
- h-  $11111 = 31$

### Q8

- a-  $2=3$
- b-  $3=7$
- c-  $4=15$
- d-  $5=31$
- e-  $6=63$
- f-  $7=127$
- g-  $8=255$
- h-  $9=511$
- i-  $10=1023$
- j-  $11=2047$

### Q10

- a- 0 through 7
  - $1=1$
  - $2=10$
  - $3=11$
  - $4=100$
  - $5=101$
  - $6=110$
  - $7=111$
- 8 through 15
  - $8=1000$
  - $9=1001$
  - $10=1010$
  - $11=1011$
  - $12=1100$
  - $13=1101$
  - $14=1110$
  - $15=1111$

16 through 31

16 = 10000

17 = 10001

18 = 10010

19 = 10011

20 = 10100

21 = 10101

22 = 10110

23 = 10111

24 = 11000

25 = 11001

26 = 11010

27 = 11011

28 = 11100

29 = 11101

30 = 11110

31 = 11111 32 through 63

32 = 100000

33 = 100001

34 = 100010

35 = 100011

36 = 100100

37 = 100101

38 = 100110

39 = 100111

40 = 101000

41 = 101001

42 = 101010

43 = 101011

44 = 101100

45 = 101101

46 = 101110

47 = 101111

48 = 110000

49 = 110001

50 = 110010

51 = 110011

52 = 110100

53 = 110101

54 = 110110

55 = 110111

56 = 111000

57 = 111001

58 = 111010

59=111011  
60=111100  
61=111101  
62=111110  
63=111111  
64through75  
64=1000000  
65=1000001  
66=1000010  
67=1000011  
68=1000100  
69=1000101  
70=1000110  
71=1000111  
72=1001000  
73=1001001  
74=1001010  
75=1001011

Q13

- a- 15 = 1111
- b- 21 = 10101
- c- 28 = 11100
- d- 34 = 100010
- e- 40 = 101000
- f- 59 = 111011
- g- 65 = 1000001
- h- 73 = 1001001

Q15

- a- 11+01 =100
- b- 10+10 = 100
- c- 101+11 = 1000
- d- 111+110= 01101
- e- 1001+101 = 01110
- f- 1101+1011=011000

Q19 = 00000000

Q28

- a- 10011001 = -103
- b- 01110100 = 116

c-  $10111111 = -65$

Q29

a-  $011110000101011 = 1543$

b-  $100110000011000 = -13288$