

1. Convert base8 to base2
  - 723 =111 010 011
  - 1234567 =001 010 011 100 101 110 111
  - 345 =011 100 101
  - 235626 =010 011 101 110 010 110
  - 77665544332211 =111 111 110 110 101 101 100 100 011 011 010 010 001
2. How many bits with base8
  - 702 =9bits
  - 7001 =12bits
  - 67545 =15bits
  - 777666=18bits
  - 3344 =12bits
3. Can you explain in the numbers bellow If they are base8
  - 881234 =no base8
  - 1976 =no base8
  - 7654 =yes base8
  - 124567 =yes base8
  - 654ABCDEF =no base8
4. Convert base8 to base10
  - 777666 =111 111 111 110 110 110
  - 56765 =101 110 111 110 101=5DF5
  - 0001001=001 000 000 001=201
  - 012345001=001 010 011 100 101 000 000 001=29DA01
  - 7000000001 =111 000 001=E0000001
5. Convert base8 to base16
  - 77662233 = 111 111 110 110 010 010 011 011=FF649C
  - 33441122 =011 011 100 100 001 001 010 010 =6E4252
  - 0011001100 =001 001 000 000 001 001 00 00 =90090
  - 1100220033=001 001 000 000 010 010 000 000 011 011=901201D
  - 1122334455667700 =2525E4D76FC0
6. How many bytes with the number bellow (base8)
  - 71100777 =111 001 001 000 000 111 111
  - 6000 =110 000 000 000 =12\*8=96bytes
  - 3000 =011 000 000 000 =12\*8= 96bytes
  - 7654321 =111 110 101 100 011 010 001=21\*8=168bytes
  - 6760000 =110 111 110 000 000 000 000 = 21\*8=168bytes
7. We continue with 6 (1,2,3,4,5)
  - How many Kilobytes =1/8kilobytes
  - How many Megabytes =1/1024megabytes
  - How many Gigabytes =1/1024megabytes
  - How many Gigabytes=1/1024megabyes

8. Convert base2 to base8
  - 00000111100000 =740
  - 11111111111111=37777
  - 10101010101010=25252
  - 10000000000000 =20000
  - 00000000000001 =1
9. How many bits with base2
  - 1000000000000001 =15bits
  - 0000000000000000 =15bits
  - 101010101010101=15bits
  - 000000111111000 =15bits
  - 0110011001000100 =16bits
10. Can you explain in the numbers bellow If they are base2
  - 0001112222
  - ABC10DFE
  - 11111111
  - 00000000
  - 787665543210
11. Convert base2 to base10
  - 777666
  - 56765
  - 0001001
  - 012345001
  - 7000000001
12. Convert base2 to base16
  - 00010001000010010010011111
  - 111111111111111111111111
  - 101000100001001000010001000
  - 0000000000000000000000000001
  - 1000000000000000000000000000
13. How many bytes with the number bellow (base2)
  - 1000000000000000000000
  - 11111111111111111111
  - 0000000000000000000001
  - 0000.....0000(length of number0 = 1024)
  - 1111.....1111 (length of number1 = 1024/8)
14. We continue with 13 (1,2,3,4,5)
  - How many Kilobytes
  - How many Megabytes
  - How many Gigabytes
  - How many Gigabytes

15. Convert base10 to base2

- 33
- 129
- 140
- 678
- 999

16. How many bits with base10

- 33
- 129
- 140
- 678
- 999

17. Can you explain in the numbers bellow If they are base10

- AB00011
- D0
- 0011
- 000
- F10A

18. Convert base10 to base8

- 777666
- 56765
- 0001001
- 012345001
- 7000000001

19. Convert base10 to base16

- 100
- 200
- 35
- 77
- 777

20. How many bytes with the number bellow (base10)

- 100
- 200
- 90
- 77
- 777

21. We continue with 20(1,2,3,4,5)

- How many Kilobytes
- How many Megabytes
- How many Gigabytes
- How many Gigabytes

22. Convert base16 to base2

- ABCDEF
- 129
- 140
- 678
- 999

23. How many bits with base16

- D001
- E002
- C003
- F0B
- E0A

24. Can you explain in the numbers bellow If they are base10

- ABG
- DH
- 0011
- 000
- F10A

25. Convert base16 to base8

- 00011000
- ABC002
- 0001001
- 012345001
- 7000000001

26. Convert base16 to base10

- 100
- 200
- 35
- 10B
- ACDEFB

27. How many bytes with the number bellow (base16)

- 100
- 200
- 90
- 77F200
- ACB10F

28. We continue with 27 (1,2,3,4,5)

- How many Kilobytes
- How many Megabytes
- How many Gigabytes
- How many Gigabytes

## 29. Operation on binary

- $1111111+1111111$
- $1111111+0001111+1111111$
- $0011001+1100011+111100+0101011$
- $1000011011+10001110011+100011011+10001111$
- $111111111+0011111111+11111111+111111+11111$
- $111+111+111+111+111+11+111+111+1111+111+111+111+111+111+111$
- $1111-001$
- $111111-111-111$
- $111111-0011-1111-1111-1111-1111$
- $01111-00101-00011$
- $11111-01011-00101-00001$
- $11111111111111-11-11-11-11-11-11-11-11-11-11-11$
- $1111111111111-001-001-001-001-001$
- $10000000000000000-11-11-111-1111-11111-111111111$

## 30. Bits and Bytes

- 1000bits = bytes?
- 1000000bits = kilobytes?
- $1024 \times 1024$ bytes = megabyte?
- 1gigabyte = megabyte? = kilobyte? = byte? = bits?
- Terabyte = gigabyte? = megabyte? = kilobyte? = byte? = bits?

## 31. Convert base16 to base8

- 10000000001
- 010101010100
- 123456789ABCDEF
- 1111111111111111
- 998877665544332211
- 1A2B3C4D5E6F789A

## 32. Convert base8 to base16

- 1111111111111111
- 10000000000000000
- 000000000000000011
- 02222333344445556677
- 1234567654321

## 33. Convert base2 to base 16

- 1111.....111(length of number1=24)
- 10000.....000(length of number0 = 40)
- 111....111000...000(length of number 1 = 12 and number0 = 12)

## 34. Convert base2 to base 8

- 1111.....111(length of number1=24)
- 10000.....000(length of number0 = 30)
- 111....111000...000(length of number 1 = 12 and number0 = 12)