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In [2]: #Name: Mohith Dande
1. Convert 101011 (binary) → decimal & hex
To Decimal:
Just add up the powers of 2 where there's a 1:

 $1 \times 2^5 + 0 \times 2^4 + 1 \times 2^3 + 0 \times 2^2 + 1 \times 2^1 + 1 \times 2^0$ 
=  $32 + 0 + 8 + 0 + 2 + 1 = 43$ 

To Hex:
Group into 4 bits from right: 0010 1011
0010 = 2
1011 = B
So: 101011 = 2B (hex)
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In [1]: 2. Convert 93 (decimal) → binary & hex
To Binary:
Keep dividing by 2 and write the remainders:

 $93 \div 2 = 46$  R1
 $46 \div 2 = 23$  R0
 $23 \div 2 = 11$  R1
 $11 \div 2 = 5$  R1
 $5 \div 2 = 2$  R1
 $2 \div 2 = 1$  R0
 $1 \div 2 = 0$  R1

Write the remainders from bottom to top:
93 = 1011101 (binary)

To Hex:
Divide by 16:
 $93 \div 16 = 5$  remainder 13 → 13 is D in hex
So: 93 = 5D (hex)
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