**Tutorial 3: Binary Logic**

Choose the correct answer:

1. The decimal number 76 is equivalent to:
2. 1010100
3. 1001100
4. 1001010
5. 1001000
6. What is 10112 in decimal?
7. 10
8. 11
9. 12
10. 13
11. The decimal number 18.25 is equivalent to:
12. 10010.01
13. 10010.011
14. 10010.1
15. 10010.11
16. What is 100.0112 in decimal?
17. 2.375
18. 4.125
19. 4.3125
20. 4.375
21. The decimal number 193 is equivalent to:
22. 10100001
23. 11000000
24. 11000001
25. 11000010
26. Convert the decimal number 10.375 to binary.
27. 1010.101
28. 1010.0101
29. 1010.01
30. 1010.011
31. Convert the decimal number 55.6875 to binary.
32. 101111.1011
33. 110111.1001
34. 110111.1011
35. 110111.1101
36. What is 11.12 in decimal?
37. 2.5
38. 3.25
39. 3.5
40. 4.5
41. Which is equivalent to 1010011.00112 in decimal?
42. 83.0625
43. 83.1875
44. 83.3125
45. 83.375
46. What is 11100112 in decimal?
47. 115
48. 117
49. 121
50. 123
51. Convert the decimal number 81 to a hexadecimal number
52. 47
53. 51
54. 5B
55. 129
56. Convert the hexadecimal number 11C to a decimal number
57. 188
58. 284
59. 286
60. 288
61. What does the hexadecimal number FACE represent as a decimal number?
62. 60,111
63. 61,932
64. 64,206
65. 68,302

**TRY BY YOURSELF**

1. **Convert the following numbers into decimal numbers**
   * (01)2, (111)2, (10011.11)2, (11010.101)2
   * (756)8, (1110.01)8, (6632.45)8,
   * (A)16, (1101)16, (FFB23.CD)16
2. **Convert the following decimal numbers into the following bases:**
   * Binary base 0, 10, 56, 1999
   * Octal base 111, 965, 14569
   * Hex. Base 01, 111, 56, 965
3. **Draw a logic diagram for each of the following Boolean functions:**
   * F(a,b,c)=abc+a’bc+abc’
   * F(a,b,c) = ab’c + ab
4. **Write the truth table for each of the following functions:**
   * F(a,b,c)=ab’c+a’b’c+abc’
   * F(a,b,c) = abc + ab’+ac
5. **Find the output of the following logic circuit:**