TEJ3M Binary Worksheet

Binary and Decimal Number Systems Worksheet

Name: Solutions Date: _____

Part 1: Convert the following Binary Numbers into Decimal

1. 101101 = 45
2. 11101 = 29
3. 101 = 5
4. 1000001 = 65
5. 11101001 = 233
6. 10011 = 19
7. 00010 = 2
8. 111 = 7

Part 3: Converting Decimal Numbers to Binary

1. 5 = 101
2. 12 = 1100
3. 23 = 10111
4. 34 = 100010
5. 125 = 1111101
6. 112 = 1110000
7. 223 = 11011111
8. 74 = 1001010

Part 2: Comparing Binary Numbers (Use <, >, or =)

1. 101 (5) < 110 (6)
2. 011 (3) < 100 (4)
3. 0110 (6) < 1011 (11)
4. 1010 (10) = 01010
5. 001 < 010

Part 4: Adding Binary Numbers

1. 1011 + 100 = 1111 ✓
2. 10111 + 1011 = 100010
3. 10111101 + 1001010 = 10000111 ✓
4. 11110111 + 1111101 = 101110100

Extension: Subtracting Binary - Try to use the logic of borrowing "10" in Decimal to borrow "2 = 10" in Binary.

1. 1101 - 1001 = 100
2. 11101 - 1011 = 10010
3. 11001011 - 10110011 = 00011000