Name : _____ Date : _____

A+ Computer Science - Number Systems Worksheet 1

BASE 2 to BASE 10 conversions

8 4 2 1
$1\ 0\ 0\ 1_2$ = (8*1+4*0+2*0+1*1) = 9 in base 10

16 8 4 2 1
$1\ 1\ 0\ 0\ 1_2$ = (16*1+8*1+4*0+2*0+1*1) = 25 in base 10

64 32 16 8 4 2 1
$0\ 1\ 1\ 0\ 1\ 0\ 1_2$ = 53 in base 10

DIRECTIONS : Convert the following numbers to base 10.

1. 1111 base 2 to base 10 _____
2. 1001 base 2 to base 10 _____
3. 1010 1001 base 2 to base 10 _____
4. 0001 0001 base 2 to base 10 _____
5. 0101 1001 base 2 to base 10 _____

BASE X to BASE 10 conversions

X^5 X^4 X^3 X^2 X^1 X^0 if X is 2
32 16 8 4 2 1
if X is 3
243 81 27 9 3 1

DIRECTIONS : Convert the following numbers to base 10.

6. 321 base 4 to base 10 _____
7. 102 base 3 to base 10 _____
8. 34 base 5 to base 10 _____
9. 76 base 8 to base 10 _____
10. 2134 base 6 to base 10 _____