OCTAL TO DECIMAL NUMBER

The weight of the digit position in an octal numbers is as follows

8^3	8^2	8^1	8^0	8^{-1}	8^{-2}	8^{-3}

To convert from octal to decimal, multiply each octal digit by its weight and add the resulting products.

Example

1. Convert the octal number $(23)_8$ into decimal number,

$= 2\ [8^1] + 3\ [8^0]$

$= 2\ [8] + 3\ [1] = 16 + 3$

$= 19$

$(23)_8 = (19)_{10}$

2. Convert the octal number 23.52 into decimal number

$(23.52)_8$

$= 2\ [8^1] + 3\ [8^0]\ .\ 5\ [8^{-1}] + 2[8^{-2}]$

$= 2\ [8] + 3\ [1]\ .\ 5\ [0.125] + 2\ [0.015625] = 16 + 3.0625 + 0.03125$

$= 19.65625$

$(23.52)_8 = (19.65625)_{10}$