

Step 1	21 / 2	10	1
Step 2	10 / 2	5	0
Step 3	5 / 2	2	1
Step 4	2 / 2	1	0
Step 5	1 / 2	0	1

Decimal Number : 21_{10} = Binary Number : 10101_2

Octal Number : 25_8 = Binary Number : 10101_2

Shortcut method - Binary to Octal

Steps

- **Step 1** - Divide the binary digits into groups of three *starting from the right*.
- **Step 2** - Convert each group of three binary digits to one octal digit.

Example

Binary Number : 10101_2

Calculating Octal Equivalent:

Step	Binary Number	Octal Number
Step 1	10101	010 101
Step 2	10101_2	$2_8 5_8$
Step 3	10101_2	25_8

Binary Number : 10101_2 = Octal Number : 25_8

Shortcut method - Octal to Binary

Steps

- **Step 1** - Convert each octal digit to a 3 digit binary number *the octal digits may be treated as decimal for this conversion*.
- **Step 2** - Combine all the resulting binary groups *of 3 digits each* into a single binary number.

Example

Octal Number : 25_8

Calculating Binary Equivalent:

Step	Octal Number	Binary Number
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