Octal into Binary

Use Table

Binary into Octal

HexaDecimal into Binary

Use Table

Binary into Hexadecimal

Octal into Hexadecimal

Octal → Binary → Hex

Hexadecimal into Octal

Hex → Binary → Octal

Decimal into other bases

Whole number

Floating point number

Decimal → Binary

Decimal → Octal

Decimal → Hexadecimal

Decimal into other bases   Whole number

Decimal ➡ **Binary**

Divide the given number by 2

Decimal ➡ **Octal**

Divide the given number by 8

Decimal ➡ **Hexadecimal**

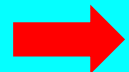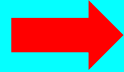**Divide the given number by 16**

Octal into Binary

Use Table

Binary into Octal

HexaDecimal into Binary
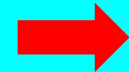
Use Table

Binary into Hexadecimal
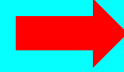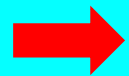
Octal into Hexadecimal

Octal ➡ Binary ➡ Hex

Hexadecimal into Octal

Hex ➡ Binary ➡ Octal

Decimal into other bases

Whole number

Decimal ➡ Binary

Decimal ➡ Octal

Decimal ➡ Hexadecimal

Decimal into Binary

Convert $(198)_{10}$ = (**11000110**)$_2$

$$\begin{array}{r|l} 2 & 198 \\ \hline 2 & \text{-} \\ \hline 2 & \text{-} \\ \hline 2 & \text{-} \\ \hline 2 & \text{-} \\ \hline 2 & \text{-} \\ \hline 2 & \text{-} \\ \hline 2 & \text{-} \\ \hline 2 & \text{-} \end{array}$$

Quotient	99	49	24	12	6	3	1
Remainder	0	1	1	0	0	0	1

Answer

$(11000110)_2$

Octal into Binary

Use Table

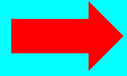**Binary into Octal**

HexaDecimal into Binary

Use Table

Binary into Hexadecimal

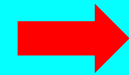**Octal into Hexadecimal**

Octal ➡ Binary ➡ Hex
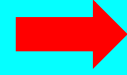
Hexadecimal into Octal

Hex ➡ Binary ➡ Octal

Decimal into other bases

Whole number

Decimal ➡ Binary

Decimal ➡ Octal

Decimal ➡ Hexadecimal

Convert $(798)_{10}$ = (**1436**) $_8$

$$
\begin{array}{c|l}
8 & 798 \\
\hline
8 & - \\
\hline
8 & - \\
\hline
 & - \\
\end{array}
$$

Quotient	99	12	1
Remainder	6	3	4

Answer

$(1436)_8$

Octal into Binary

Use Table

Binary into Octal

HexaDecimal into Binary

Use Table

Binary into Hexadecimal

Octal into Hexadecimal

Octal → Binary → Hex

Hexadecimal into Octal

Hex → Binary → Octal

Decimal into other bases

Whole number

Decimal → Binary

Decimal → Octal

Decimal → Hexadecimal

Convert $(798)_{10}$ **= (** **31E** **)** $_{16}$

16 | 798

16 | -

16 | -

Quotient 49 3

Remainder E 1

Answer

$(31E)_{16}$

Octal into Binary

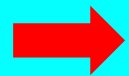Use Table

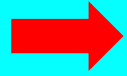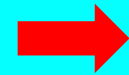**Binary into Octal**

HexaDecimal into Binary

Use Table

Binary into Hexadecimal

Octal into Hexadecimal

Octal → Binary → Hex

Hexadecimal into Octal

Hex → Binary → Octal

Decimal into other bases

Floating point number

Decimal → Binary

Decimal → Octal

Decimal → Hexadecimal

Floating point number

Convert $(.625)_{10} = ($ .101 $)_2$

Is the Fractional Part = 0

					Integer Part	Fractional Part
.625	*	2	=	1.25	1	.25
	*	2	=	0.5	0	0.5
	*	2	=	1.0	1	0

Ans

Now the fractional part = 0   So,   **STOP**

Answer

$(.625)_{10} = ($ .101 $)_2$

Octal into Binary
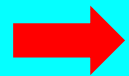
Use Table

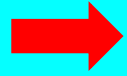**Binary into Octal**

HexaDecimal into Binary

Use Table

Binary into Hexadecimal

Octal into Hexadecimal
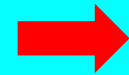
Octal ➡ Binary ➡ Hex

Hexadecimal into Octal

Hex ➡ Binary ➡ Octal

Decimal into other bases

Floating point number

Decimal ➡ Binary

Decimal ➡ Octal

Decimal ➡ Hexadecimal

Floating point number

Convert $(0.015625)_{10}$ = (.01) $_8$

Is the Fractional Part = 0

Ans

				Integer Part	Fractional Part
.015625	*	8	= 0.125	0	.125
	*	8	= 1.000	1	0.0

Now the fractional part = 0   So,   **STOP**

Answer

$(.015625)_{10}$ = (0.01) $_8$

Octal into Binary
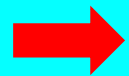
Use Table

Binary into Octal
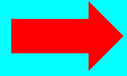
HexaDecimal into Binary

Use Table

Binary into Hexadecimal

Octal into Hexadecimal
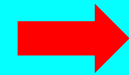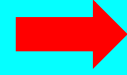
Octal ➡ Binary ➡ Hex

Hexadecimal into Octal
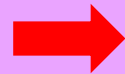
Hex ➡ Binary ➡ Octal

Decimal into other bases

Floating point number

Decimal ➡ Binary

Decimal ➡ Octal

Decimal ➡ Hexadecimal

Is the Fractional Part = 0

Convert $(.93)_{10}$ = (   )$_{16}$

Ans

				Integer Part	Fractional Part
.93	*	16	= 14.88	14 **(E)**	.88
	*	16	= 14.08	14 **(E)**	0.08
	*	16	= 1.28	1	.28
	*	16	= 4.48	4	0.48
	*	16	= 7.68	7	0.48

Now the fractional part not ending.. So,   **STOP**

Doing it five times is enough if it is not ending (You can do it more if you want)

Answer

$(.93)_{10}$ = (.EE147)$_{16}$

Decimal into other bases

What if we are given with the number that has integer part as well as fractional part ?? How will we solve it ?

- e.g $(198.625)_{10}$ into $(\quad)_2$

- **Solution**

- the integral part (198) using **Prime factorization method**

- & the fractional part (0.625) using the conversion method of **decimal into other bases for floating point numbers**

- & then Combine both answers to get final answer

Decimal into Binary

Convert $(198.625)_{10}$ = ( )$_2$

Decimal into Binary

Convert $(198)_{10}$ = (**11000110**)$_2$

Whole number

```
2 | 198
2 |  99  - 0
2 |  49  - 1
2 |  24  - 1
2 |  12  - 0
2 |   6  - 0
2 |   3  - 0
2 |   1  - 1
```

Quotient

Remainder

Answer
(11000110)$_2$

Floating point number

Decimal into Binary

Convert $(.625)_{10}$ = (.101)$_2$

Is the Fractional Part = 0

Integer Part | **Fractional Part**

Ans

				Integer Part	Fractional Part
.625	*	2	= 1.25	1	
.25	*	2	= 0.5	0	
0.5	*	2	= 1.0	1	0

Now the fractional part = 0   So,   **STOP**

Answer

$(.625)_{10}$ = (.101)$_2$

Final Answer

$(198.625)_{10}$ = (11000110.101)$_2$

Decimal into Octal

Convert $(798.015625)_{10} = ($ $)_8$

Decimal into Octal

Convert $(798)_{10} = ($ **1436** $)_8$

Whole number

```
8 | 798
8 | 99  - 6
8 | 12  - 3
  | 1   - 4
```

Quotient

Remainder

Answer

$(1436)_8$

Floating point number

Decimal into Octal

Convert $(0.015625)_{10} = ($ .01 $)_8$

Is the Fractional Part = 0

Ans

				Integer Part	Fractional Part
.015625	*	8	= 0.125	0	
.125	*	8	= 1.000	1	0.0

Now the fractional part = 0   So,   **STOP**

Answer

$(.015625)_{10} = ($ 0.01 $)_8$

Final Answer

$(798.015625)_{10} = ($ **1436.01** $)_8$

Decimal into Hexadecimal

Convert (798.93)$_{10}$ = (   )$_{16}$

Decimal into Hexadecimal

Convert (798)$_{10}$ = (**31E**)$_{16}$

Whole number

```
16 | 798
16 | 49  - E
16 | 3  - 1
```

Quotient

Remainder

Answer

(31E)$_{16}$

Floating point number | Decimal into Hexadecimal Conversion

Convert (.93)$_{10}$ = (   )$_{16}$

Is the Fractional Part = 0

Ans

				Integer Part	Fractional Part
.93	*	16	=	14.88	14 (E)
.88	*	16	=	14.08	14 (E)
0.08	*	16	=	1.28	1
.28	*	16	=	4.48	4
0.48	*	16	=	7.68	7

0.48

Now the fractional part not ending.. So,   **STOP**

Doing it five times is enough if it is not ending (You can do it more if you want)

Answer

(.93)$_{10}$ = (.EE147)$_{16}$

Final Answer

(798.93)$_{10}$ = (31E.EE147)$_{16}$