How can I use the IMPPOWER function in Google Sheets?

Authored by

stats writer

June 30, 2024

The IMPPOWER function in Google Sheets is a built-in function that allows users to calculate the compound interest for a given principal amount, interest rate, and number of periods. This function is useful for financial analysis and forecasting. To use the IMPPOWER function, simply enter the function name followed by the required parameters in the desired cell. The result will be the final value after the specified number of periods. This function can be used to quickly and accurately calculate the future value of investments or loans. It is a powerful tool for managing financial data in Google Sheets.

IMPOWER function

The `IMPOWER` function returns a complex number raised to a power.

Parts of a IMPOWER formula

The `IMPOWER` formula is formatted as `=IMPOWER(complex_base, exponent).`

Part	Description	Notes
`complex_base`	The complex number to raise to the exponent power.	May be written as a ? bi or a ? bj.
`exponent`	The exponent to raise complex_base to.	Must be a number.

Sample formulas

```
IMPOWER("4-3i",0.5)
```

```
IMPOWER(A2,B2)
```

```
IMPOWER("2j",-7)
```

Notes

The exponentiation of a complex number is defined as follows:
(a+bi)n = rn(cosθ + isinθ), wherer = √(x2 + y2) and θ = arctan(b/a)

Examples

	A	B
1	**Formula**	**Result**
2	`=IMPOWER("5+2i", 3)`	65+142i

	A	B
3	`=IMPOWER("-1-j", -1)`	-0.5+0.5j
4	`=IMPOWER("0.732-5.349i", -0.138)`	0.776914096672106+0.155872432042838i

Related functions

`COMPLEX`: The COMPLEX function creates a complex number, given real and imaginary coefficients.

`IMREAL`: Returns the real coefficient of a complex number.

`IMAGINARY`: Returns the imaginary coefficient of a complex number.

`POWER`: Returns a number raised to a power.