

Microsoft Excel

Module 25 - Use of Fact, Power, Quotient and Mod Function in MS-Excel



CBSE

In Excel, FACT calculates the factorial of a number, POWER raises a number to a specified power, QUOTIENT returns the integer portion of a division, and MOD returns the remainder after a division.



ICSE

The FACT, POWER, QUOTIENT, and MOD functions are all math-related functions that can help with different types of calculations. Here's a breakdown of each one with examples:



NTSE

You can find the FACT, POWER, QUOTIENT, and MOD functions in Microsoft Excel in a few different ways – here's how to locate and use them easily:



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Where to Find These Functions in Excel:

Method 1: Using the "Insert Function" Button

1. Click on any cell where you want the formula.
2. Click the fx button (just to the left of the formula bar).
3. In the **Insert Function** dialog box:
 - o Type the name of the function (e.g., FACT, POWER, etc.) in the search box.
 - o Select it from the list and click **OK**.
4. Excel will guide you through filling in the function's arguments.



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Method 2: From the Formulas Tab

1. Go to the **Formulas** tab on the Ribbon.
2. Click **Math & Trig** in the **Function Library** group.
3. Scroll through the list to find:
 - o FACT - for factorial
 - o POWER - to raise to a power
 - o QUOTIENT - for integer division
 - o MOD - to get the remainder



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- o They're listed in alphabetical order, so it's easy to find.



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Method 3: Typing Directly into a Cell

You can also just type them manually:



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Use of Fact, Power, Quotient and Mod Function in MS-Excel

- =FACT(5)
- =POWER(2,3)
- =QUOTIENT(10,3)
- =MOD(10,3)

Excel will auto-suggest the function as you type.

1. FACT(number)

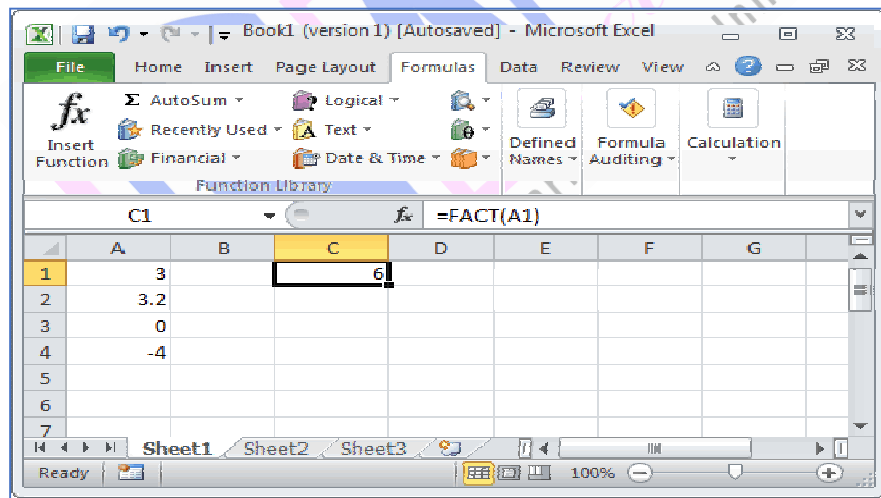
- **Purpose:** Returns the factorial of a number ($n! = n \times (n-1) \times \dots \times 1$).
- **Formula:** =FACT(number)
- **Example:** =FACT(5) returns 120 because $5! = 5 \times 4 \times 3 \times 2 \times 1 = 120$.

Why we use it:

- For **mathematical or statistical** calculations.
- Often used in **permutations and combinations** (e.g., calculating how many ways something can be arranged).

Example Use Case:

- In a school project calculating how many ways to arrange 5 books: =FACT(5)
- In probability: computing combinations like $nCr = \frac{\text{FACT}(n)}{(\text{FACT}(r) \times \text{FACT}(n-r))}$



2. POWER(number, power)

- **Purpose:** Returns the result of a number raised to a power.
- **Formula:** =POWER(number, power)

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Use of Fact, Power, Quotient and Mod Function in MS-Excel

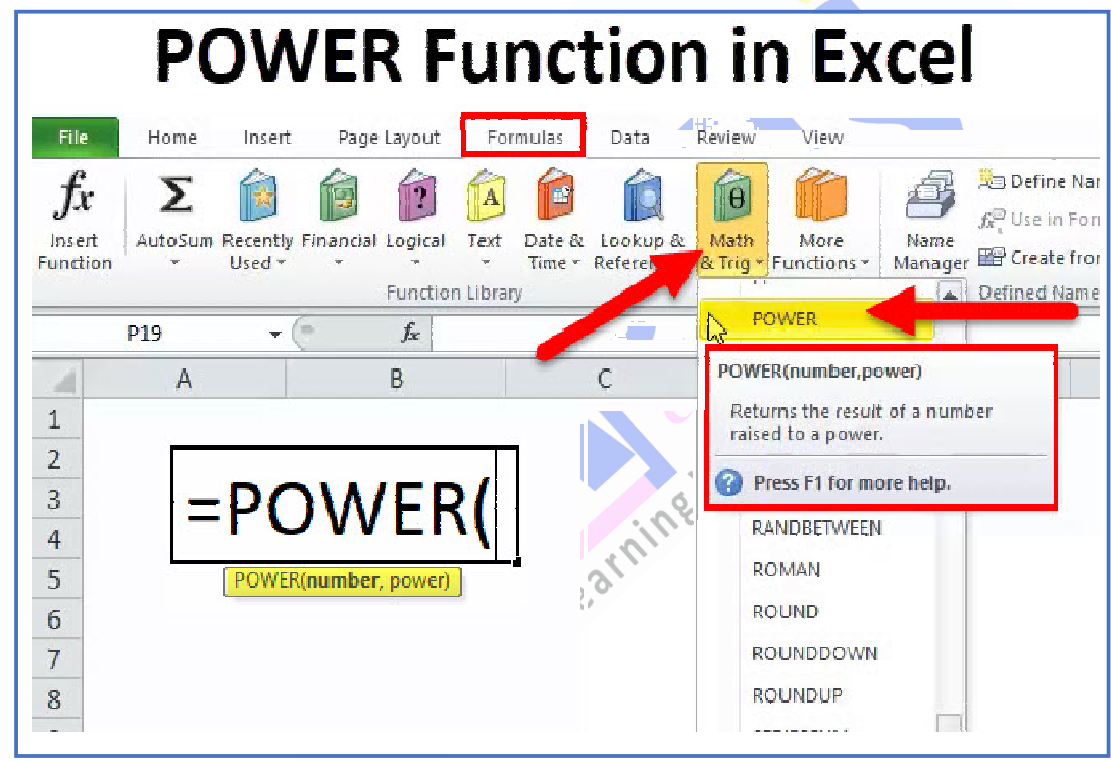
- Example: =POWER(2, 3) returns 8 because $2^3 = 8$.
- Tip: This is equivalent to using ^ – so =2^3 also gives 8.

Why we use it:

- For any calculation involving raising numbers to a power (exponents).
- Useful in compound interest, physics, growth formulas, etc.

Example Use Case:

- Calculating compound interest: =Principal * POWER(1 + rate, years)
- Population growth projections: =POWER(current_population, growth_rate)
- Population growth projections: =POWER(current_population, growth_rate)



POWER Function in Excel

File Home Insert Page Layout **Formulas** Data Review View

fx AutoSum Recently Used Financial Logical Text Date & Time Lookup & Reference Math & Trig More Functions Name Manager

Function Library

P19

A B C

1
2
3
4
5
6
7
8

=POWER(
POWER(number, power)

POWER
POWER(number, power)
Returns the result of a number raised to a power.
Press F1 for more help.

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ROUNDDOWN
ROUNDUP

3. QUOTIENT(numerator, denominator)

- Purpose: Returns only the integer portion of a division (ignores remainder).
- Syntax: =QUOTIENT(numerator, denominator)
- Example: =QUOTIENT(10, 3) returns 3.
- Note: To get the remainder, you'd use the MOD function (see below).

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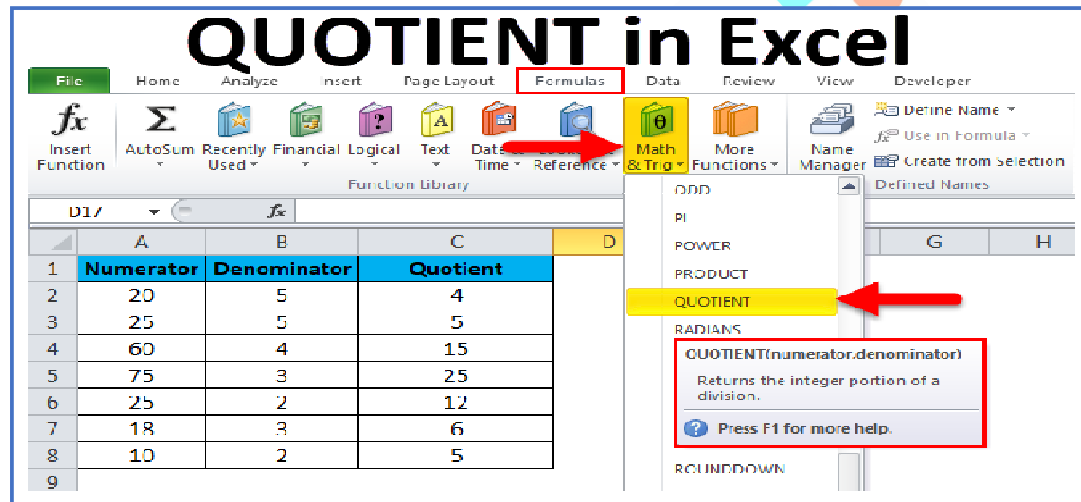
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Why we use it:

- When you need just the whole number part of a division (ignoring the decimal).
- Useful for **splitting things evenly**, like grouping or batching.

Example Use Case:

- You have 23 items and want to pack them into boxes that hold 5 each:
=QUOTIENT(23,5) → 4 full boxes.
- Useful in resource planning or inventory management.



QUOTIENT in Excel

	A	B	C
1	Numerator	Denominator	Quotient
2	20	5	4
3	25	5	5
4	60	4	15
5	75	3	25
6	25	2	12
7	18	3	6
8	10	2	5
9			

QUOTIENT(number, divisor)
Returns the integer portion of a division.
Press F1 for more help.

4. MOD(number, divisor)

- **Purpose:** Returns the remainder after division.
- **Syntax:** =MOD(number, divisor)
- **Example:** =MOD(10, 3) returns 1 because 10 ÷ 3 = 3 remainder 1.

Why we use it:

- To find the **remainder after division**.
- Very handy in **scheduling, cyclical patterns**, or figuring out **leftovers**.

Example Use Case:

- You're assigning 10 tasks to 3 people in a cycle, and want to see who gets which task: =MOD(task_number, 3)
- Determining if a number is **even or odd**: =MOD(number, 2) → 0 means even, 1 means odd.

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MOD Function in Excel

ASSIGNMENT

	A	B	C	D
1	Name	Physics	Math	Chemistry
2	Aaradhya	52	57	55
3	Aaryan	38	43	41
4	Aditya	60	65	63
5	Alok	40	45	43
6	Bhavika	82	87	85
7	Bhavika	73	78	76
8	Chaitanya	41	46	44
9	Chaitanya	92	97	95
10	Dhruv	93	98	96

Ques 1: Find the remainder using Mod function in the next column with number as Physics and Divisor = 5.
Ques 2: Use Power function in next column with number as Math marks and Power = 2.