

Navigating calculations with **OFFSET** and ranges

ADVANCED EXCEL FUNCTIONS



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Navigating Excel cells

	A	B	C
1	cell A1		
2			
3			

	A	B	C
1			
2			
3			

C1 is
rows **0** ↓
cols **2** →
from **A1**

Absolute referencing:

- A1, C1 for individual cells
- A1:C1 for ranges

Relative referencing:

- x rows **down, up**
- y columns **right, left**

When to use relative referencing?

Some practical applications:

- New rows / columns are added to the dataset
- Anchoring data relative to a (dynamically) selected data point
- Reformatting nested data inputs into proper tables

	A	B	C	D	E	F
1		Week 7	Week 8	Week 9	Week 10	
2	Monday	\$123	\$153	\$876		
3	Tuesday	\$54	\$122	\$345		
4	Wednesday	\$15	\$54	\$46		
5	Thursday	\$25	\$5			

	A	B	C	D	E	F	G
1	Starting Week	Week 5	▼	→	Week 5	W+1	W+2
2		Week 6		Day 1	\$123	\$153	\$876
3		Week 7		Day 2	\$54	\$122	\$345
4				Day 3	\$15	\$54	\$46

Weeks	Week 1	Sales	Profit	Week 1	Week 2
		\$125	\$56		
				\$123	\$153
				\$54	\$122
	Week 2	Sales	Profit		
		\$65	\$34		

OFFSET() in practice

Syntax:

OFFSET (**reference**, rows, columns, [height],[width])

	A	B	C	D	E	F	G	H	I
1				Revenue	APR	MAY	JUN		
2				Sales	\$123	\$153	\$876		
3				Profit	\$51	\$122	\$345		
4									
5									

The diagram illustrates the use of the OFFSET function. A red box highlights cell A1. A red arrow labeled '2' points down to cell D3, indicating the 'rows' parameter. A red arrow labeled '6' points right from cell D3 to cell G3, indicating the 'columns' parameter. The cell G3 is also highlighted with a red box.

OFFSET (**A1**, 2, 6)

OFFSET() in practice

Syntax:

OFFSET (**reference**, rows, columns, [height],[width])

	A	B	C	D	E	F	G	H	I
1					APR	MAY	JUN		
2				Sales	\$123	\$153	\$876		
3				Profit	\$54	\$122	\$345		
4									
5									

Diagram illustrating the OFFSET function. The formula `OFFSET(I5, -2, -2)` is shown, indicating a reference to the cell at row 3, column 2 (cell G3) from the current cell I5. Red arrows and boxes highlight the movement: a vertical arrow pointing up from I5 to G3 labeled **-2**, and a horizontal arrow pointing left from I5 to G3 labeled **-2**.

OFFSET (**I5**, **-2**, **-2**)

Wrapping OFFSET() in other functions

Examples:

SUM(OFFSET (reference, rows, columns) : OFFSET (reference, rows, columns))

	A	B	C	D	E	F	G
1	SUM?				APR	MAY	JUN
2				Sales	\$123	\$153	\$876
3				Profit	\$54	\$122	\$345

SUM(OFFSET (A1, 1, 4) : OFFSET (A1, 2, 6))

Going dynamic!

	A	B	C	D	E	F	G	H
1	Starting Week	Week 2	▼		Week 2	W+1	W+2	
2		Week 2			???	???	???	
3		Week 3			???	???	???	
4								
5		Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
6	Sales	\$ 84	\$ 24	\$ 34	\$ 28	\$ 34	\$ 46	\$ 138
7	Profit	\$ 50	\$ 12	\$ 20	\$ 25	\$ 20	\$ 41	\$ 110

Going dynamic!

	A	B	C	D	E	F	G	H
1	Starting Week	Week 2			Week 2	W+1	W+2	
2		Week 2		Sales	\$ 24	\$ 34	\$ 28	
3		Week 3		Profit	\$ 12	\$ 20	\$ 25	
4								
5		Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
6	Sales	\$ 84	\$ 24	\$ 34	\$ 28	\$ 34	\$ 46	\$ 138
7	Profit	\$ 50	\$ 12	\$ 20	\$ 25	\$ 20	\$ 41	\$ 110

OFFSET () and MATCH () combination

Sales of Week 2 (cell E2) = `OFFSET (A5, 1 , MATCH(B1, Weeks, 0))`

Going dynamic... with charts!

Starting Week	Week 1

	Week 1	Week 2	Week 3
Sales	\$ 84	\$ 24	\$ 34
Profit	\$ 50	\$ 12	\$ 20

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
Sales	\$ 84	\$ 24	\$ 34	\$ 28	\$ 34	\$ 46	\$ 138
Profit	\$ 50	\$ 12	\$ 20	\$ 25	\$ 20	\$ 41	\$ 110

Sales vs Profit as of Week 1



- **OFFSET ()** and **MATCH ()** combination with charts
- Visualizing dynamically selected data

Let's practice!

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