



Closest Match in Excel

To find the closest match to a target value in a data column, use INDEX, MATCH, ABS and MIN in Excel. Use the [VLOOKUP function](#) in Excel to find an approximate match.

1. The ABS function in Excel returns the [absolute value](#) of a number.

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Explanation: C3-F2 equals -39. The ABS function removes the minus sign (-) from a negative number, making it positive. The ABS function has no effect on 0 (zero) or positive numbers.

2. To calculate the differences between the target value and the values in the data column, replace C3 with C3:C9.

COUNTIF : =ABS(C3:C9-F2)

	A	B	C	D	E	F	G	H	I	J
1										
2	Name	Data			Target	720				
3	Emily	681			Match	=ABS(C3:C9-F2)				
4	James	734								
5	Mia	683								
6	John	704								
7	Jessica	698								
8	Mark	736								
9	Richard	703								
10										

Explanation: the range (array constant) created by the ABS function is stored in Excel's memory, not in a range. The array constant looks as follows:

{39;14;37;16;22;16;17}

3. To find the closest match, add the MIN function and finish by pressing CTRL + SHIFT + ENTER.

F3	▼	:	X	✓	f _x	{=MIN(ABS(C3:C9-F2))}				
	A	B	C	D	E	F	G	H	I	J
1										
2	Name	Data			Target	720				
3	Emily	681			Match	14				
4	James	734								
5	Mia	683								
6	John	704								
7	Jessica	698								
8	Mark	736								
9	Richard	703								
10										

Note: the formula bar indicates that this is an [array formula](#) by enclosing it in curly braces {}. Do not type these yourself. The array constant is used as an argument for the MIN function, giving a result of 14.

4. All we need is a function that finds the position of the value 14 in the array constant. MATCH function to the rescue! Finish by pressing CTRL + SHIFT + ENTER.

F3	▼	:	X	✓	f _x	{=MATCH(MIN(ABS(C3:C9-F2)),ABS(C3:C9-F2),0)}				
	A	B	C	D	E	F	G	H	I	J
1										
2	Name	Data			Target	720				
3	Emily	681			Match	2				
4	James	734								
5	Mia	683								
6	John	704								
7	Jessica	698								

8	Mark	736							
9	Richard	703							
10									

Explanation: 14 (first argument) found at position 2 in the array constant (second argument). In this example, we use the MATCH function to return an exact match so we set the third argument to 0.

5. Use the INDEX function (two arguments) to return a specific value in a one-dimensional range. In this example, the name at position 2 (second argument) in the range B3:B9 (first argument).

COUNTIF		:=INDEX(B3:B9,MATCH(MIN(ABS(C3:C9-F2)),ABS(C3:C9-F2),0))							
A	B	C	D	E	F	G	H	I	J
1									
2	Name	Data		Target	720				
3	Emily	681		Match	=INDEX(B				
4	James	734							
5	Mia	683							
6	John	704							
7	Jessica	698							
8	Mark	736							
9	Richard	703							
10									

6. Finish by pressing CTRL + SHIFT + ENTER.

F3		{=INDEX(B3:B9,MATCH(MIN(ABS(C3:C9-F2)),ABS(C3:C9-F2),0))}							
A	B	C	D	E	F	G	H	I	J
1									
2	Name	Data		Target	720				
3	Emily	681		Match	James				
4	James	734							
5	Mia	683							
6	John	704							
7	Jessica	698							
8	Mark	736							
9	Richard	703							
10									

Note: in Excel 365 or Excel 2021, finish by simply pressing Enter. You won't see curly braces.

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