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Excel stores and calculates floating point numbers. Sometimes, the result of a formula is a very close approximation.

1. For example, take a look at the formulas below. At first glance, everything looks alright.

	A	B	C	D	E	F	G	H
1	1.9	1.7	0.2					
2	1.3	1.2	0.1					
3	8.9	5.7	3.2					
4	8.5	1.6	6.9					
5	7.6	5.5	2.1					
6	4.1	2.5	1.6					
7	6.8	3.7	3.1					
8	1.2	1.1	0.1					
9								
10								

2. However, if we show 16 decimal places, we can see that one result is a very close approximation.

	A	B	C	D	E	F	G	H
1	1.9	1.7	0.2000000000000000					
2	1.3	1.2	0.1000000000000000					
3	8.9	5.7	3.2000000000000000					
4	8.5	1.6	6.9000000000000000					
5	7.6	5.5	2.1000000000000000					
6	4.1	2.5	1.6000000000000000					
7	6.8	3.7	3.1000000000000000					
8	1.2	1.1	0.0999999999999999					
9								
10								

You don't have to worry about floating point errors. They are rare. Even if your worksheet contains a floating point error, in most cases, this causes no problems.

3. However, if you compare the value in cell C8 with another value, this can happen.

D8	fx		=IF(C8>=0.1,"Yes","No")						
	A	B	C	D	E	F	G	H	
1	1.9	1.7	0.2	Yes					
2	1.3	1.2	0.1	Yes					
3	8.9	5.7	3.2	Yes					
4	8.5	1.6	6.9	Yes					
5	7.6	5.5	2.1	Yes					
6	4.1	2.5	1.6	Yes					
7	6.8	3.7	3.1	Yes					
8	1.2	1.1	0.1	No					
9									
10									

4. Use the ROUND function to fix this.

D8	fx		=IF(ROUND(C8,1)>=0.1,"Yes","No")						
	A	B	C	D	E	F	G	H	
1	1.9	1.7	0.2	Yes					
2	1.3	1.2	0.1	Yes					
3	8.9	5.7	3.2	Yes					
4	8.5	1.6	6.9	Yes					
5	7.6	5.5	2.1	Yes					
6	4.1	2.5	1.6	Yes					
7	6.8	3.7	3.1	Yes					
8	1.2	1.1	0.1	Yes					
9									
10									

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