

Exercise 3: Basic Skills - Understanding Cell References



After completing this exercise you will be able to:

- understand the difference between relative and absolute cell references
- know when to use relative and absolute cell references in your worksheets.



The \$ sign in an absolute reference can be inserted before both the column letter and the row number. If only the \$ sign before the column letter is used then when copied the column will be fixed but the row number will change.

Relative and Absolute Cell References

1. Create a copy of the Ex-2 worksheet and rename it Ex-3
2. Enter a formula in cells C9:G9 which calculates the the total number of cases of wine sold in each quarter (Q) as a percentage of the total wine sales in 1999.
3. If you are not sure how to do this select cell C9, enter '=' then click on C8. Then enter '/' (the divide by symbol) and click on cell G8. Press enter. Zero should be displayed in the cell.
4. To convert this into a percentage, select cell C9 and click on the Percent Style button on the Formatting Toolbar . This converts the number to a percentage. Click on the Increase Decimal button on the Formatting Toolbar  to increase the number of decimal places (One decimal place is sufficient).
5. Select cell C9 and drag-and-drop the formula over to cell G9. Note you get an error message in cells D9 and G9.

% Total Sales	20.6%	12.3%	#DIV/0!	#DIV/0!
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This tells you that Excel is trying to divide a number by zero! What's gone wrong? Can you see what has happened? Look at the formulas in cells C9, D9, E9 a, F9 and G9. Notice anything untoward about them? If not ask your tutor!

6. What has happened is that in setting up our original formula we got our relative cell references in a twist. In fact each of the values in cells C9:G9 need to be divided by the same value - that in cell G8 (5,225). To do this we need to make the reference to cell G8 in our formula an absolute one!
7. Click on cell C9, enter '=' then click on C8. Enter divide by, '/', and click on cell G8. This time though with G8 still selected press Function key F4. Did you notice what happened? Excel automatically adds \$ signs which has the effect of converting a relative cell reference into an absolute one.
8. Press enter and then drag-and-drop to copy the formula in C9 over to G9. Notice the difference this time? The percentages should all work out ok!
9. Enter a formula in cells H4:H8 which expresses the quarterly number of cases of each wine sold as a percentage of the Total Sales by Type; enter an appropriate column label in cell G2; standard toolb(Note: the formula needs to contain both absolute and relative cell references); enter an appropriate row label in cell A9;

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Jan 2007

10. Your final table should look something like that shown below.

	A	B	C	D	E	F	G	H
1		Bacchus Wines, Quarterly Wine Sales (1999)						
2		Wine	1999 Quarterly Sales (Cases)				Total Sales	% Total Sales
3			Q1	Q2	Q3	Q4		
4		Red	300	350	325	550	1,525	29.2%
5		White	450	475	750	500	2,175	41.6%
6		Rose	200	175	225	250	850	16.3%
7		Sparkling	125	150	175	225	675	12.9%
8		Quarterly Total	1,075	1,150	1,475	1,525	5,225	100.0%
9		% Total Sales	20.6%	22.0%	28.2%	29.2%	100%	
10								