Tax Rates

Chapter

Lookup & Reference Functions

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Tax Rates
Offset
Left Lookup
Two-way Lookup
Locate Maximum Value
Indirect

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tax-rates.xls

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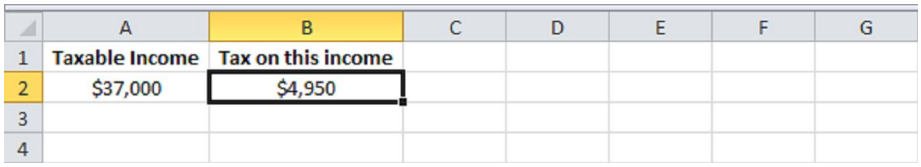
Sometimes you are not looking for an exact match when you use the VLOOKUP function. For example, when you want to calculate the tax on an income.

The following tax rates apply to individuals who are residents of Australia.

Taxable income	Tax on this income
0 - $6,000	Nil
$6,001 - $35,000	15c for each $1 over $6,000
$35,001 - $80,000	$4,350 plus 30c for each $1 over $35,000
$80,001 - $180,000	$17,850 plus 38c for each $1 over $80,000
$180,001 and over	$55,850 plus 45c for each $1 over $180,000

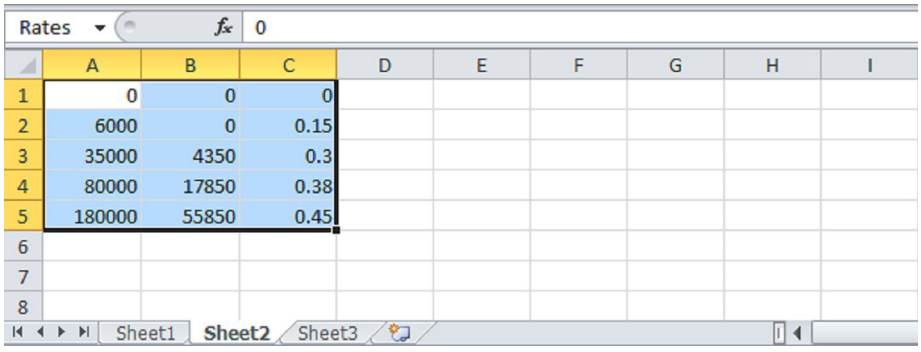
Example: if income is 37000, tax equals 4350 + 0.3 * (37000 - 35000) = 4350 + 600 = $4950



	A	B	C	D	E	F	G
1	Taxable Income	Tax on this income					
2	$37,000	$4,950					
3							
4							

To automatically calculate the tax on an income, execute the following steps.

1. On the second sheet, create the following range and name it Rates.

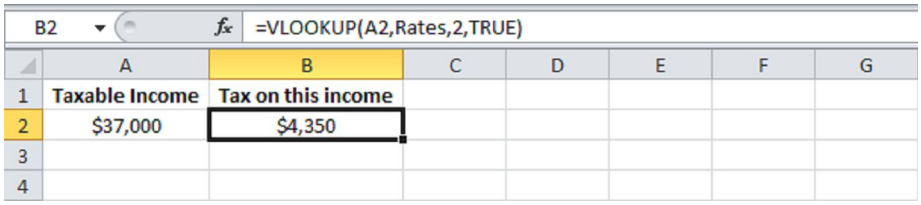


Rates | fx 0

	A	B	C	D	E	F	G	H	I
1	0	0	0						
2	6000	0	0.15						
3	35000	4350	0.3						
4	80000	17850	0.38						
5	180000	55850	0.45						
6									
7									
8									

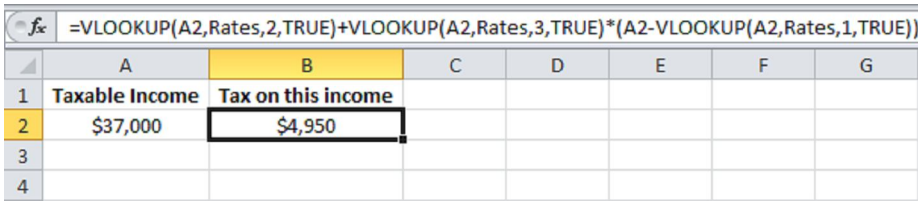
Sheet1 Sheet2 Sheet3

2. We already know how the VLOOKUP function can return an exact match or a #N/A error if not found, by setting the fourth argument to FALSE. However, when you set this argument to TRUE, it returns an exact match or if not found, it returns the largest value smaller than lookup_value (A2). That's exactly what we want!



Explanation: Excel cannot find 37000 in the first column of Rates. However, it can find 35000 (the largest value smaller than 37000). As a result, it returns 4350 (col_index_num, the third argument, is set to 2).

3. Now, what's left is the remainder of the equation, + 0.3 * (37000 - 35000). This is easy. We can return 0.3 by setting col_index_num to 3 and return 35000 by setting col_index_num to 1. The complete formula below does the trick.



Note: when you set the fourth argument of the VLOOKUP function to TRUE, the first column of the table must be sorted in ascending order.

Learn more about lookup & reference, use the side menu >>

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