Create a Complex Formula

A **complex formula** is one that uses more than one arithmetic operator. You might, for example, need to create a formula that uses addition and multiplication. In formulas containing more than one arithmetic operator, Excel uses the standard **order of precedence** rules to determine which operation to perform first. You can change the order of precedence in a formula by using parentheses around the part you want to calculate first. For example, the formula =4+2*5 equals 14, because the order of precedence dictates that multiplication is performed before addition. However, the formula =(4+2)*5 equals 30, because the parentheses cause 4+2 to be calculated first. **CASE** *You want to create a formula that calculates a 20% increase in tour expenses.*

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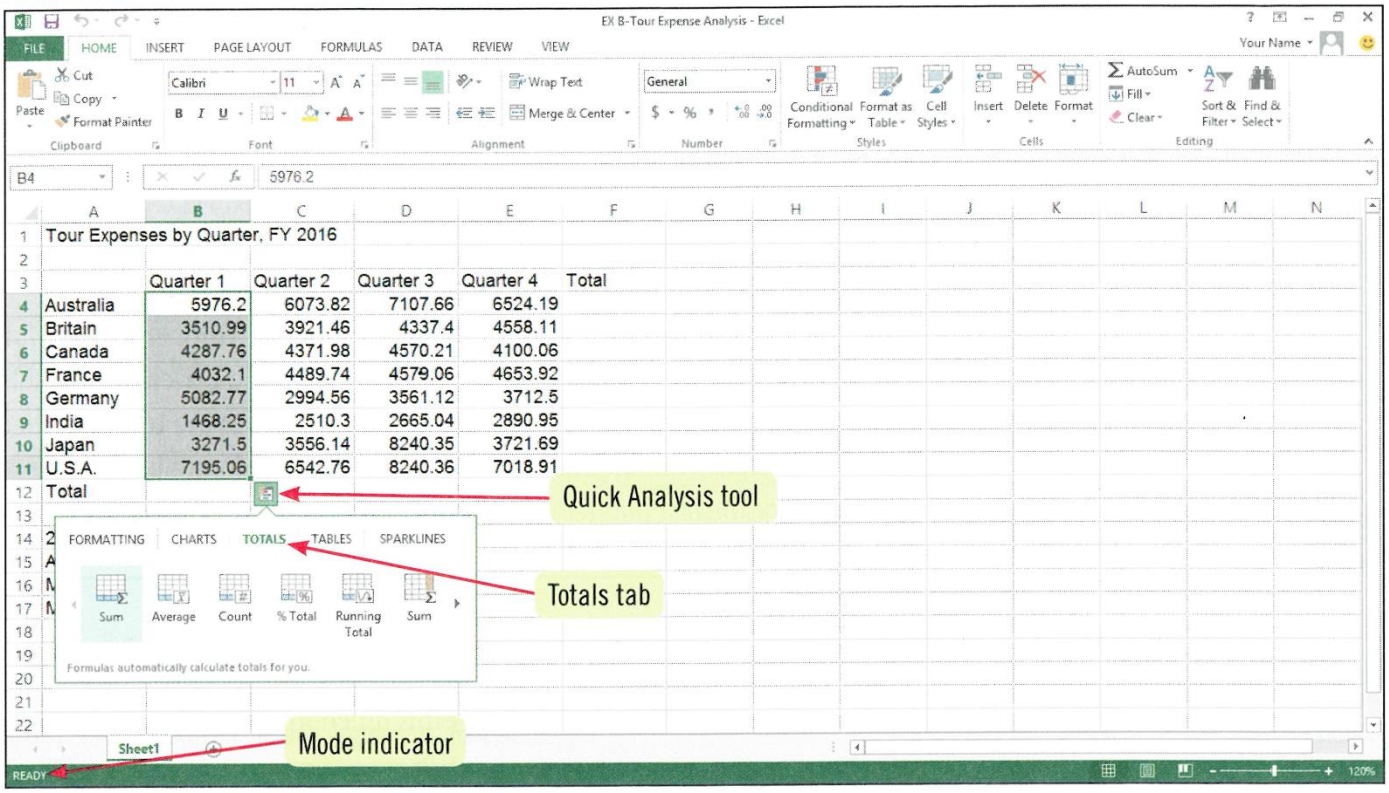
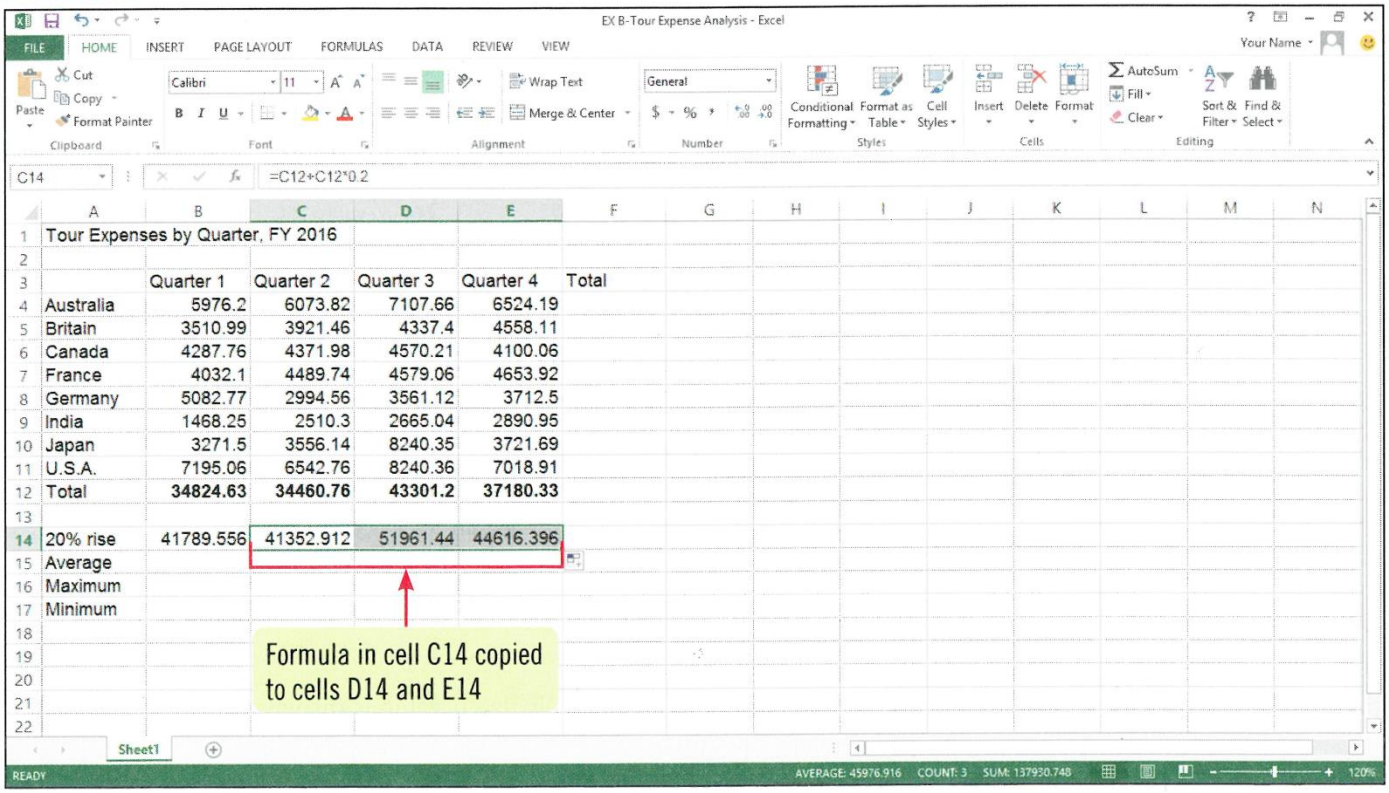
1. **Start Excel, open the file EX B-1.xlsx from the location where you store your Data Files, then save it as EX B-Tour Expense Analysis**
2. **Select the range B4:B11, click the Quick Analysis tool, then click the Totals tab**
   The Totals tab in the Quick Analysis tool displays commonly used functions, as seen in **FIGURE B-1**.
3. **Click the AutoSum button in the Quick Analysis tool**
   The newly calculated value displays in cell B12 and has a darker appearance than the figures in the selected range.
4. **Click cell B12, then drag the fill handle to cell E12**
   The formula in cell B12 is copied to cells C12:E12. The copied cells have the same dark appearance as that of cell B12.
5. **Click cell B14, type =, click cell B12, then type +**
   In this first part of the formula, you are using a reference to the total expenses for Quarter 1.
6. **Click cell B12, then type *.2**
   The second part of this formula adds a 20% increase (B12*.2) to the original value of the cell (the total expenses for Quarter 1).
7. **Click the Enter button on the formula bar**
   The result, 41789.556, appears in cell B14.
8. **Press [Tab], type =, click cell C12, type +, click cell C12, type *.2, then click**
   The result, 41352.912, appears in cell C14.
9. **Drag the fill handle from cell C14 to cell E14**
   The calculated values appear in the selected range, as shown in **FIGURE B-2**. Dragging the fill handle on a cell copies the cell's contents or continues a series of data (such as Quarter 1, Quarter 2, etc.) into adjacent cells. This option is called **Auto Fill**.
10. **Save your work**

FIGURE B-1: Totals tab in the Quick Analysis tool



	A	B	C	D	E	F
1	Tour Expenses by Quarter, FY 2016					
2						
3		Quarter 1	Quarter 2	Quarter 3	Quarter 4	Total
4	Australia	5976.2	6073.82	7107.66	6524.19	
5	Britain	3510.99	3921.46	4337.4	4558.11	
6	Canada	4287.76	4371.98	4570.21	4100.06	
7	France	4032.1	4489.74	4579.06	4653.92	
8	Germany	5082.77	2994.56	3561.12	3712.5	
9	India	1468.25	2510.3	2665.04	2890.95	
10	Japan	3271.5	3556.14	8240.35	3721.69	
11	U.S.A.	7195.06	6542.76	8240.36	7018.91	
12	Total					

FIGURE B-2: Complex formulas in worksheet



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11	U.S.A.	7195.06	6542.76	8240.36	7018.91	
12	Total	**34824.63**	**34460.76**	**43301.2**	**37180.33**	
13						
14	20% rise	41789.556	41352.912	51961.44	44616.396	
15	Average					
16	Maximum					
17	Minimum					