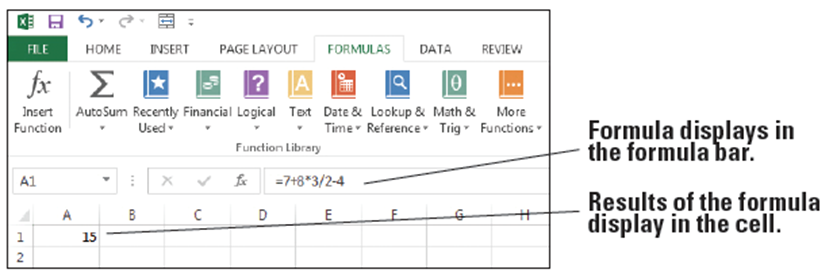
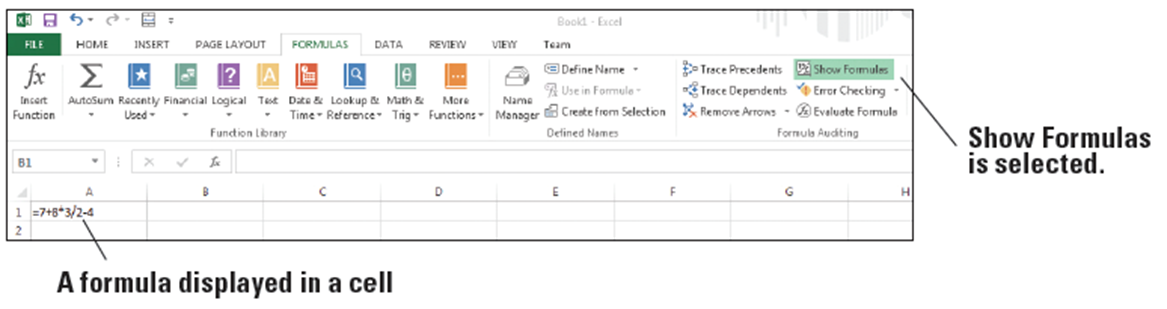
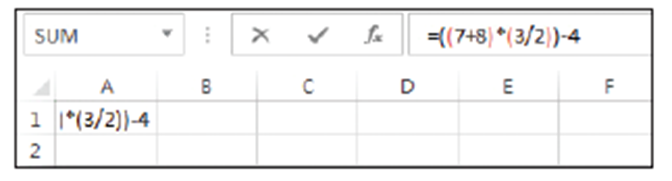
Step by Step 1: Display Formulas

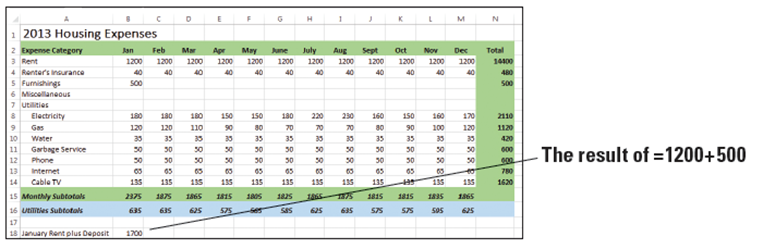
* **GET READY.** Before you begin these steps, **LAUNCH** Microsoft Excel and **OPEN** a new blank workbook.
  1. Click cell **A1**.
  2. Type **=7+8\*3/2-4** and press **Enter**. You just entered a formula.
  3. Click cell **A1**. Notice that the result of the formula displays in the cell, but the formula itself appears in the formula bar (below).
  4. Double-click cell **A1**. The formula appears in both the active cell and the formula bar. You can edit the formula in this mode.
  5. Press **Enter**.
  6. On the FORMULAS tab, in the Formula Auditing group, click **Show Formulas**. The formula in cell A1 displays (below).
  7. Click **Show Formulas** again to turn off formula display.
  8. **SAVE** the workbook as *04 Formula Practice Solution*.
* **PAUSE. LEAVE** the workbook open to use in the next exercise.

Step by Step 2: Understand Order of Operations

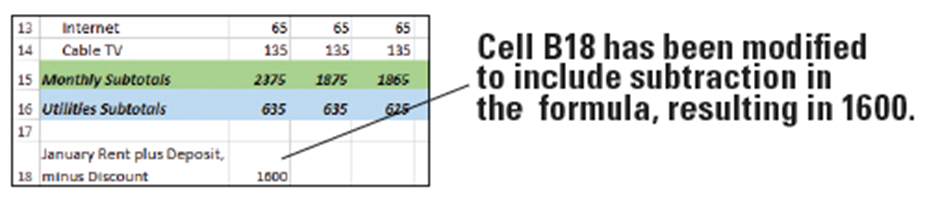
* **GET READY. USE** the worksheet from the previous exercise.
  1. Click cell **A1** to make it the active cell.
  2. Click in the formula bar.
  3. Insert parentheses around **7 + 8**.
  4. Insert parentheses around **3 / 2**.
  5. Insert parentheses around **(7 + 8) \* (3 / 2)**, as shown below. Press **Enter**. The result in A1 changes to *18.5*.
  6. **SAVE** the workbook as *04 Order of Operations Solution* and **CLOSE** it.
* **PAUSE. LEAVE** Excel open to use in the next exercise.

Step by Step 3: Create a Formula that Performs Addition

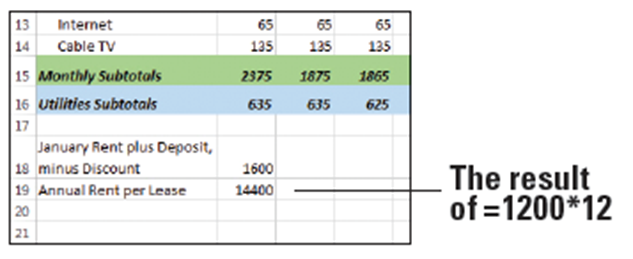
* **GET READY. LAUNCH** Microsoft Excel if it is not already open.
  1. **OPEN** the ***04 Budget Start*** data file for this lesson.
  2. In cell A18, type **January Rent plus Deposit** and press **Enter**.
  3. In cell B18, type the equal (**=**) sign, type **1200+500**, and press **Enter**. This is the simplest way to enter an addition formula. Excel adds the values and displays the result, *1700*, which is your first month’s rent plus a $500 deposit (below).
  4. **SAVE** the workbook as ***04 Budget Basic Formulas***.
* **PAUSE. LEAVE** the workbook open to use in the next exercise.



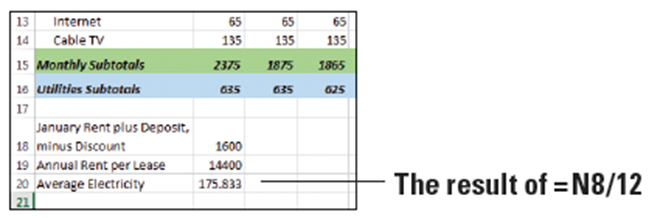
Step by Step 4: Create a Formula that Performs Subtraction

* **GET READY. USE** the worksheet you modified in the previous exercise.
  1. Double-click cell **A18**.
  2. Click after the word “Deposit,” type **, minus Discount**, and press **Enter**.
  3. Right-click cell **A18**, select **Format Cells**, click the **Alignment** tab, select the **Wrap text** check box, and click **OK**. Now you can see all of the new text added to A18.
  4. Click cell **B18** to make it the active cell.
  5. Click in the formula bar.
  6. Position the cursor immediately after **=1200+500**, type **-100**, and press **Enter**.Your landlord gave you a $100 discount for moving into your rental home early, so you are subtracting $100 from your first month’s rent. The value in cell B18 changes to *1600* (below).
  7. **SAVE** the workbook.
* **PAUSE. LEAVE** the workbook open to use in the next exercise.

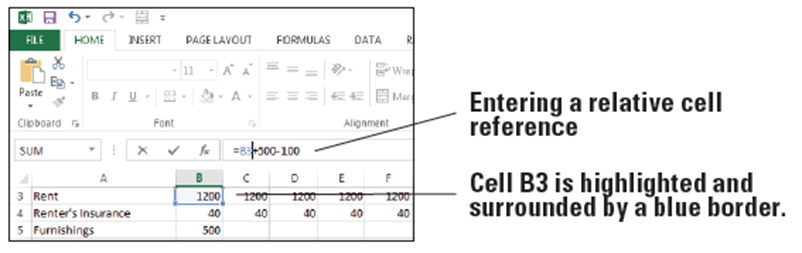
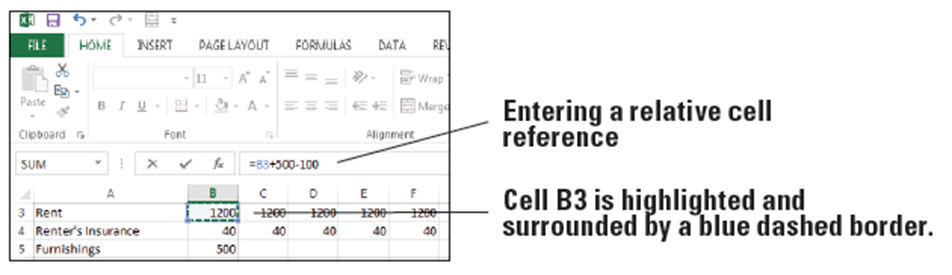
Step by Step 5: Create a Formula that Performs Multiplication

* **GET READY. USE** the worksheet you modified in the previous exercise.
  1. In cell A19, type **Annual Rent per Lease**and press **Enter**.
  2. In cell B19, type **=1200\*12** and press **Enter**. The result displays in cell B19, which is the total amount of rent you will pay in one year (below).
  3. **SAVE** the workbook.
* **PAUSE. LEAVE** the work-  
  book open to use in the   
  next exercise.

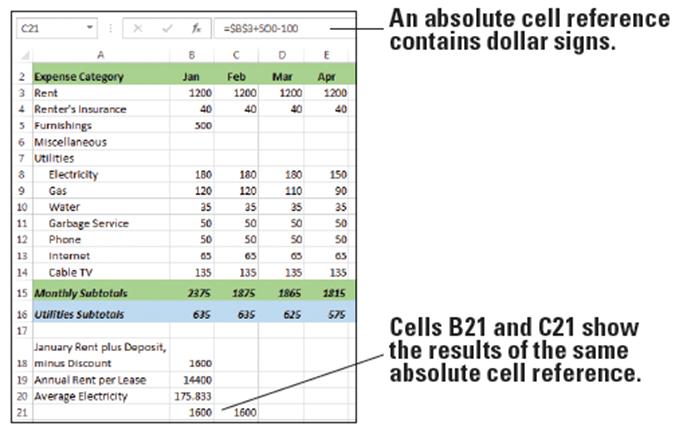
Step by Step 6: Create a Formula that Performs Division

* **GET READY. USE** the worksheet you modified in the previous exercise.
  1. In cell A20, type **Average Electricity**and press **Enter**.
  2. In cell B20, type **=N8/12** and press **Enter**. The result displays in cell B20, which is the average amount of money you will pay for electricity in one year (below).
  3. **SAVE** the workbook   
     as *04 Budget Basic   
     Formulas Solution* and   
     **CLOSE** it.
* **PAUSE. LEAVE** Excel open to use in the next exercise.

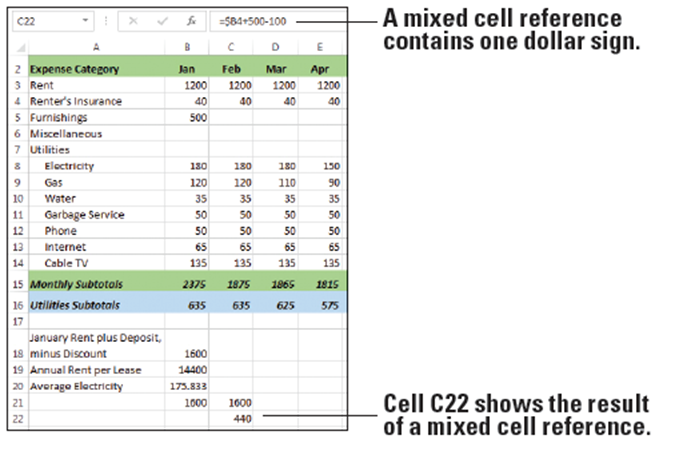
Step by Step 7: Use Relative Cell References in a Formula

* **GET READY. USE** the workbook named *04 Budget Cell References*.
  1. Click cell **B18**.
  2. Click in the formula bar and replace 1200 with cell **B3**. Notice that cell B3 is highlighted and surrounded by a blue border while you’re modifying the formula (below).
  3. Press **Enter**. The formula in cell B18 now uses a relative cell reference to cell B3.
  4. Copy cell **B18** to cell **B21**. The displayed result changes to *400*.
  5. Notice in the formula bar that the formula in cell B21 is =B6+500-100, but the formula you copied is =B3+500-100. That’s because the original cell reference of cell B3 changed to cell B6 when you copied the formula down three cells, and cell B6 is blank. The cell reference is adjusted relative to its position in the worksheet.
  6. An alternate way to use a cell reference is to click the cell being referenced while creating or modifying a formula. With cell B21 still active, click in the formula bar and select cell **B6**.
  7. Click cell **B3**. Cell B3 becomes highlighted and surrounded by a blue dashed border, and cell B3 appears in the formula bar rather than cell B6 below). Press **Enter**.
  8. **SAVE** the workbook.
* **PAUSE. LEAVE** the workbook open to use in the next exercise.

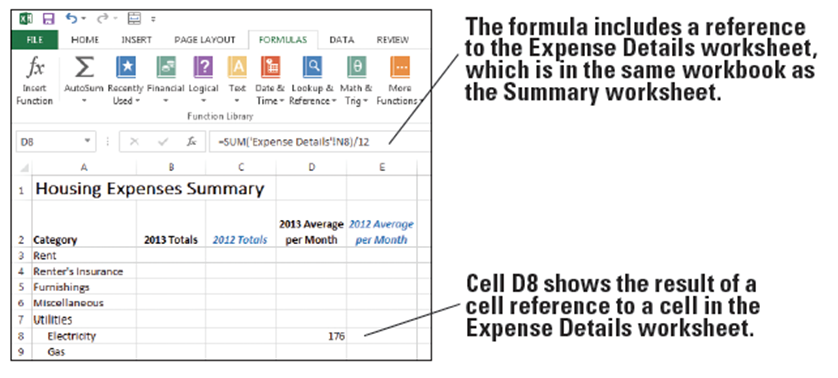
Step by Step 8: Use an Absolute Cell Reference in a Formula

* **GET READY. USE** the worksheet you modified in the previous exercise.
  1. Click cell **B18**.
  2. Click in the formula bar and insert dollar signs in the B3 cell reference so it looks like **$B$3**.
  3. Press **Enter**. The formula in cell B18 now uses an absolute cell reference to cell B3.
  4. Copy cell **B18** to cell **B21**. The displayed result is *1600*, which matches B18.
  5. Copy cell **B21** to cell **C21**. The displayed result is still *1600*.
  6. Notice in the formula bar that the formulas in cells B21 and C21 are both =$B$3+500-100. The figure below shows the formula for cell C21. Regardless of where you copy the formula in the worksheet, the formula still refers to cell B3.
  7. **SAVE** the workbook.
* **PAUSE. LEAVE** the workbook open to use in the next exercise.

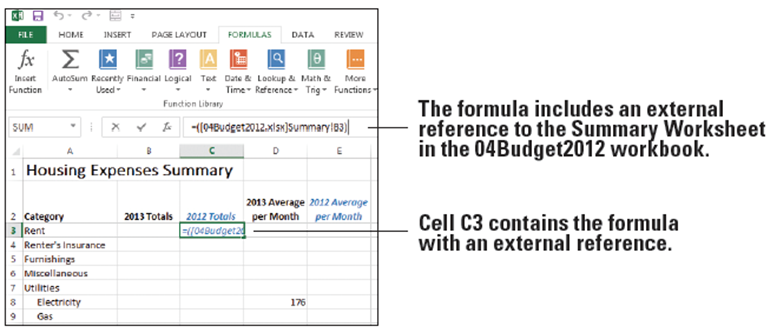
Step by Step 9: Use a Mixed Cell Reference in a Formula

* **GET READY. USE** the worksheet you modified in the previous exercise.
  1. Click cell **B21**.
  2. Click in the formula bar and delete the dollar sign before **3** in the formula so it looks like **$B3**.
  3. Press **Enter**. The formula in cell B21 now uses a mixed cell reference.
  4. Copy cell **B21** to cell **C22**. The displayed result is *440*, which is different from the result in B21. That’s because the formula in C22 references cell B4 (see below). The dollar sign before the B in the formula is absolute, but the row number is relative.
  5. Delete the contents of cell **B21**, cell **C21**, and cell **C22**.
  6. **SAVE** the workbook.
* **PAUSE. LEAVE** the workbook open to use in the next exercise.

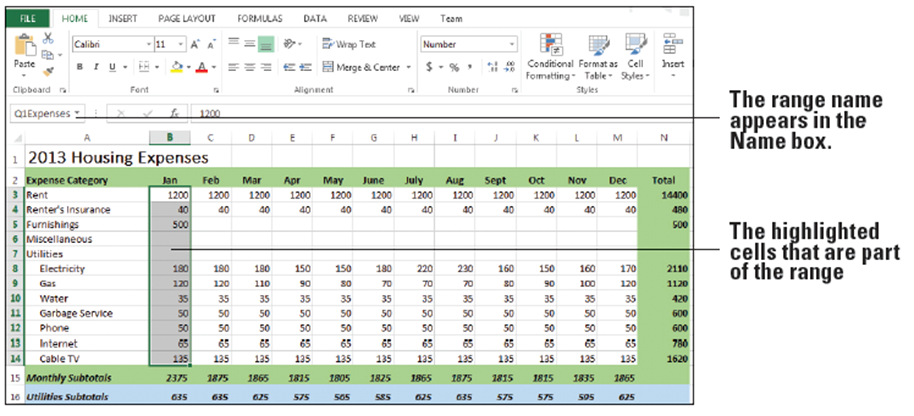
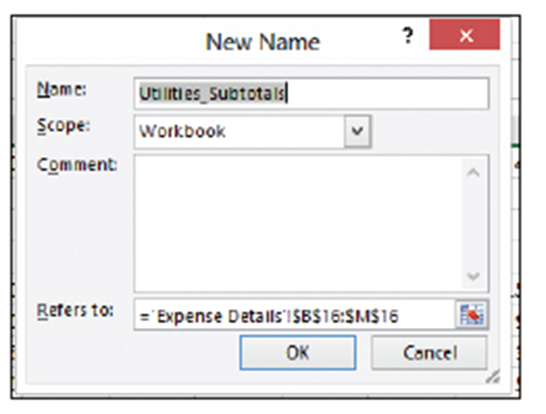
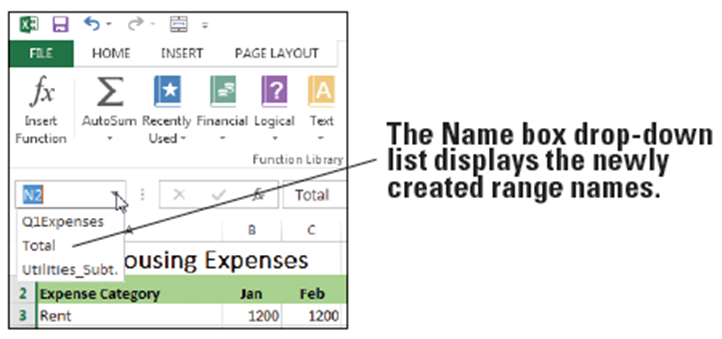
Step by Step 10: Refer to Data in Another Worksheet

* **GET READY. USE** the worksheet you modified in the previous exercise.
  1. Click the **Summary** sheet tab in the ***04 Budget Cell References*** workbook.
  2. Click cell **D8**. You want the average payment for electricity to appear in this cell, similar to the content that appears in B20 in the Expense Details worksheet. However, your formula must reference the Expense Details worksheet to gather the data.
  3. Type **=SUM('Expense Details'!N8)/12** and press **Enter**. This formula divides the value of cell N8 in the Expense Details worksheet by 12. The result is *176*, rounded due to cell formatting applied to the worksheet (see below).
  4. **SAVE** the workbook.
* **PAUSE. LEAVE** the workbook open to use in the next exercise.

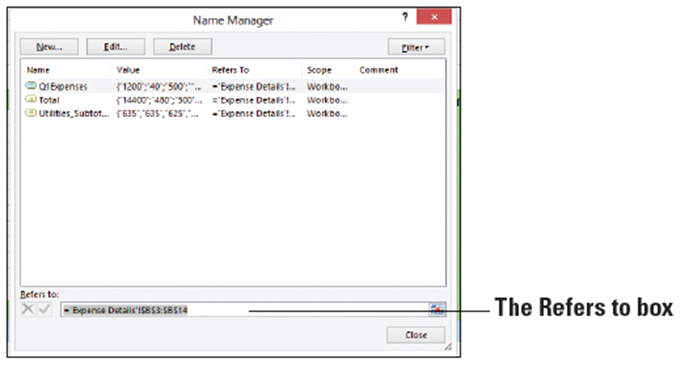
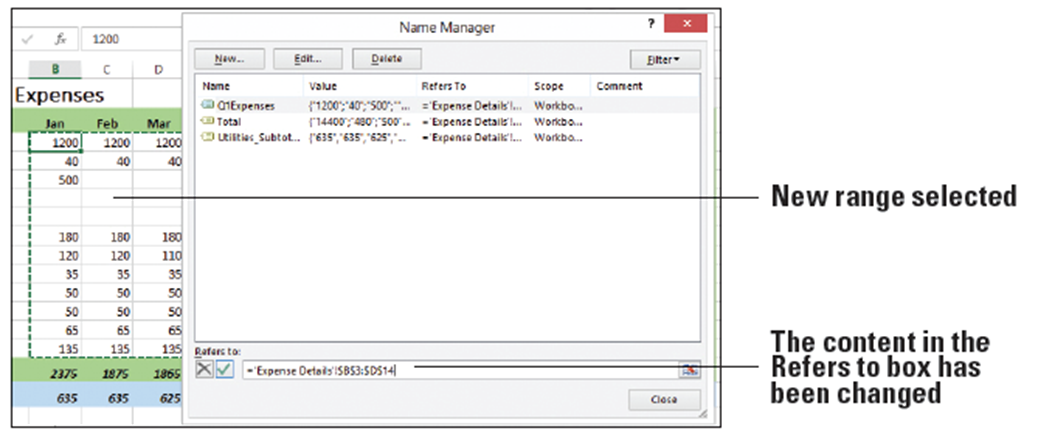
Step by Step 11: Reference Data in Another Workbook

* **GET READY. USE** the worksheet you modified in the previous exercise.
  1. Open a second   
     workbook file   
     named   
     ***04Budget2012***.
  2. In *04 Budget Cell   
     References*, on the   
     Summary sheet, click cell **C3**.
  3. Type **=([04Budget2012.xlsx]Summary!B3)**, as shown in Figure 4-14, and press **Enter**. The formula links to cell B3 on the Summary sheet in the workbook named *04Budget2012*.
  4. **SAVE** the workbook as *04 Budget Cell References Solution* and **CLOSE** it.
  5. **CLOSE** *04Budget2012*.
* **PAUSE. LEAVE** Excel open to use in the next exercise.

Step by Step 12: Name a Range of Cells

* **USE** the workbook named ***04 Budget Ranges***.
  1. Click the **Expense Details** sheet tab.
  2. Select **B3:B14**. These are the cells to be named.
  3. Click in the **Name** box, to the left of the formula bar.
  4. Type a one-word name for the list, such as **Q1Expenses**, and press **Enter**. The range name appears in the Name box (see below). Excel saves this name and uses it in any subsequent reference to this range. (Don’t worry about the apparent misnaming of the range. You modify this range to include additional months in an exercise later in this lesson.)
  5. An alternative way to name a range is to use the New Name dialog box. Select **B16:M16**.
  6. On the FORMULAS tab, in the Defined Names group, click **Define Name**. The New Name dialog box appears (right).
  7. Excel uses the row heading as the range name, shown in the Name text box. You can change the name if you like. For this exercise, leave the default name.
  8. Select B16:M16, FORMULAS tab, in the defined Names group, Click Define Name.
  9. The name *Utilities\_Subtotals* is in the name box for the range B16:M16. Click OK.
  10. Select **N2:N14**. On the FORMULAS tab, in the Defined Names group, click **Define Name**. The name is Total.
  11. Click **OK**. The range is saved with the name *Total*.
  12. Open the Name box drop-down list (below). You have three named ranges from which to select.
  13. **SAVE** the workbook.
* **PAUSE. LEAVE** the workbook open to use in the next exercise.

Step by Step 13: Change the Size of a Range

* **USE** the worksheet you modified in the previous exercise.
  1. Click the **Expense Details** sheet, if it’s not already active.
  2. On the FORMULAS tab, in the Defined Names group, click **Name Manager**.
  3. Select **Q1Expenses**   
     in the list.
  4. Highlight everything   
     in the Refers to box   
     at the bottom of the   
     dialog box (right).
  5. In the Expenses Details worksheet, select **B3:D14**. The content in the Refers to box in the Name Manager dialog box reflects the new range (below).
  6. Click **Close**, and then click **Yes** when asked if you want to save your changes.
  7. **SAVE** the workbook.
* **PAUSE. LEAVE** the workbook open to use in the next exercise.

Step by Step 14: Create a Formula that Operates on a Named Range

* **USE** the worksheet you modified in the previous exercise.
  1. In the Expense Details sheet, click **A21**.
  2. Type **First Quarter Expenses** and press **Enter**.
  3. In B21, type **=SUM(**.
  4. On the FORMULAS tab, in the Defined Names group, click **Use in Formula**.
  5. Select **Q1Expenses** from the list (see below), type **)** to close the equation, and press **Enter**. The total amount of expenses for January through March appears in B21.
  6. **SAVE** the workbook.
* **PAUSE. LEAVE** the workbook open to use in the next exercise.

