

FINDING AND CORRECTING ERRORS IN CALCULATIONS

Excel identifies errors in a worksheet in several ways. The first way is to fill the cell holding the formula generating the error with an error code. The table below lists the most common error codes. To correct one of these errors, click in the cell and modify the formula or function in the **Formula Bar**.

Error Code	Description
#####	The column isn't wide enough to display the value.
#NAME?	The formula contains text that Excel doesn't recognize (such as an unknown named range).
#VALUE!	The formula has the wrong type of argument (such as text where a TRUE or FALSE value is required).
#REF!	The formula refers to a cell that doesn't exist (which can happen whenever cells are deleted).
#DIV/0!	The formula attempts to divide by zero.





Trace Precedents









Another way you can find the source of formula error is to ensure that the appropriate cells are providing values for the formula. To identify this type of error, have Excel trace a cell's precedents, which are the cells with values used in the active cell's formula. To do this:

- ❖ Open the **Find Errors** workbook from the area where it was stored when it was downloaded from the Excel Web page.
- ❖ Click **Tools** on the **Menu Bar**.
- ❖ Choose **Formula Auditing** from the list of options.
- ❖ Select the option to **Show Formula Auditing Toolbar**.

Formula Auditing Toolbar

This toolbar is used to Trace Errors in a worksheet. The table below describes the buttons that are available on the Formula Auditing Toolbar.

Button	Description
Error Checking 	This button is used to resolve formula errors in a worksheet. It is used to review each cell marked with a green triangle. As these cells are reviewed, several options will be presented for resolving the error.
Trace Precedents 	This button is used to trace cells in a worksheet whose cell is referred to in a formula. This helps to understand the relationships between the cells in a workbook. Excel identifies a cell's precedence by drawing a blue tracer arrow from the precedent to the active cell.
Remove Precedent Arrows 	To remove the blue tracer arrows in the worksheet, use this button.
Trace Dependents 	This button is used to trace cells in a worksheet whose value changes are based on the value of some other cell. A blue arrow will be drawn from the active cell to those cells that have calculations based on that value.

Button	Description
Remove Dependent Arrows 	To remove the blue arrows from the worksheet, click this button.
Remove All Arrows 	This option is used to remove both the dependent and precedent arrows from the worksheet.
Trace Errors 	To trace and correct errors in a worksheet, such as those shown in the previous table, use this button. When this option is chosen, the precedent and dependent arrows will be displayed in the worksheet, allowing you to view the location of the errors in the formula.
New Comment 	To add a comment to a worksheet cell, click this button. A comment flag will appear in the cell and a comment box will appear next to the cell.
Circle Invalid Data 	This button is used to circle all data that does not meet the validation rule. Validation is used to specify what data may be entered into a cell.
Clear Validation Circles 	To remove the circles around the invalid data, click this button.
Show Watch Window 	This button is used to display the Watch Window. This window is used to watch the results of formula changes as worksheet data is adjusted.
Evaluate Data 	This button makes it possible to step through the calculation process of a formula to determine the point where the formula is miscalculating.

- ❖ Click in cell **D8**.
- ❖ Do one of the following:
 - Click **Tools** on the **Menu Bar**, select **Formula Auditing**, and then select **Trace Precedents**.
 - Click the second button on the **Formula Auditing** toolbar; **Trace Precedents**.
 - A blue arrow appears between cell D8 and the group of cells from C2 to C6.
 - This indicates that cells in the C2:C6 range are precedents of the value in cell D8.
- ❖ To remove the arrows, click the **Remove Precedent Arrows** (third one from left) on the **Formula Auditing** toolbar.

Trace Dependents

It is also possible to Audit the worksheet by identifying cells with formulas that use a value from a given cell. Cells that use another cell's value in their calculations are known as dependents, meaning that they depend on the value in the other cell to derive their own value.

- ❖ While still in the **Find Errors** workbook, click in cell **C2**.
- ❖ Do one of the following:
 - Click the fourth button on the **Formula Auditing** toolbar; **Trace Dependents**.
 - Click **Tools** on the **Menu Bar**, select **Formula Auditing**, and then select **Trace Dependents**.
- ❖ A blue arrow points to cell D8.
- ❖ This indicates that the formula in cell D8 is dependent on the value in cell C2.

- ❖ To remove the arrows, click the **Remove Dependent Arrows** (fifth from left) button on the **Auditing** toolbar.
- ❖ If arrows are displayed for both **Precedents** and **Dependents**, then click the **Remove All Arrows** button to stop the arrows from displaying.

Trace Errors

The Trace Error feature draws arrows to indicate the precedent and dependent cells used in the formula. To trace the errors in a document:

- ❖ Click in **D20**.
- ❖ Do one of the following:
 - Click the **Trace Errors** button on the **Auditing** toolbar.
 - Click **Tools** on the **Menu Bar**, select **Formula Auditing**, and then select **Trace Errors**.
- ❖ Blue arrows point to cell **D20** from cells **D7** and **D15**.
- ❖ These arrows indicate that using the values (or lack of values, in this case) in the indicated cells is generating the error in cell **D20**.
- ❖ On the **Formula Auditing** toolbar, click the **Remove All Arrows** button to remove the arrows from the worksheet.
- ❖ Click in cell **D20**.
- ❖ Do one of the following:
 - In the **Formula Bar**, delete the existing formula. In place of this formula, input **=Average(D8,D16)**.
 - In the **Formula Bar**, edit the formula by changing the number **7** to a number **8** and changing the number **15** to the number **16**.
- ❖ When the information has been changed, do one of the following:
 - Press the **Enter** button on the keyboard.
 - Click the **Enter** button on the Formula Bar.
- ❖ The value **\$149.08** should appear in cell **D20**.