

## CHAPTER 5

## InFocus

# PROTECTING DATA

Data in worksheets can be protected, for instance, to prevent accidental erasure or modification of key values or complex formulas, or even to prevent users from entering data anywhere else in the worksheet or workbook other than specific input cells.

Protection is most often applied to worksheets that are used frequently or by multiple users, such as timesheets or expense reports.

**In this session you will:**

- ✓ understand data protection
- ✓ learn how to provide access to cells
- ✓ learn how to protect a worksheet
- ✓ learn how to work with a protected worksheet
- ✓ learn how to disable worksheet protection
- ✓ learn how to provide restricted access to cells with passwords
- ✓ learn how to password protect a workbook
- ✓ learn how to open a password protected workbook
- ✓ learn how to remove passwords from a workbook.

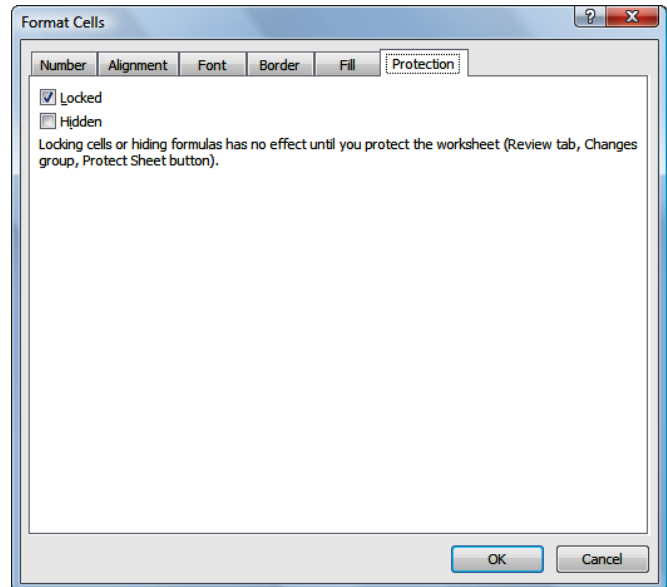
# UNDERSTANDING DATA PROTECTION

All cells in an Excel worksheet are, by default, **locked**. However the worksheet is also **unprotected** by default and so the cells remain accessible. By unlocking cells and then applying

protection to a worksheet, you are able to limit a user's access to only the unlocked cells. You can also apply passwords when protecting a worksheet or a workbook.

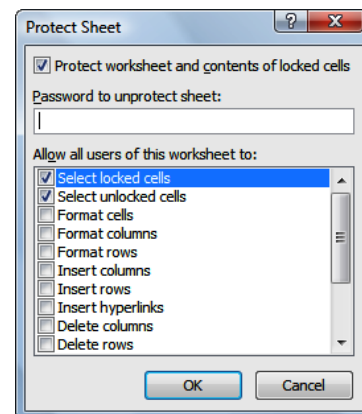
## 1 Unlocking Cells

All cells in an Excel worksheet are locked. Prior to applying protection to the worksheet, these cells can still be edited. Once protection is applied, the cells will become locked. You have the option of unlocking some cells prior to applying protection, so that these cells will remain accessible to, and able to be edited by, users. To indicate whether a cell will be locked or unlocked, you simply select an option in the **Format Cells** dialog box.



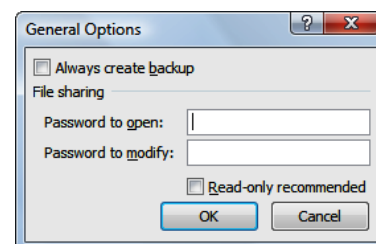
## 2 Protecting a Worksheet

Having decided which cells are to be locked or unlocked, you then need to protect the worksheet. You have the ability to apply a password to further protect a worksheet and this also enables you to provide restricted access to selected users. When you are protecting a worksheet, you are able to select from a range of actions that users can access, such as formatting, deleting or inserting rows and the like. By ticking the options, you enable the users to apply these features.



## 3 Protecting a Workbook

Alternatively you can apply passwords to protect the workbook as a whole. Via the **Save As** dialog box, you can access password options to further restrict user access. There are two passwords that you can apply: one for *opening* the workbook and one for *modifying* the workbook. If the user has the **open** password but not the **modify** password, the workbook will open as **Read-Only**. You can also set workbook protection, using options on the **Review** tab of the ribbon.



# PROVIDING TOTAL ACCESS TO CELLS

All cells in an Excel worksheet are, by default, **locked**. However, the worksheet is also by default, **unprotected** and so the cells remain accessible. It sounds a little back to front, but the

first task in protecting cells is to unlock the ones that you want the user to be able to change. Then, when the worksheet is protected, you will have **total access** to only the **unlocked cells**.

## Try This Yourself:

Open  
File

Before starting this exercise you **MUST** open the file **E835 Protection\_1.xlsx...**

1


Click on cell **F6**

This cell contains a formula that references data in cells **E6** and **C6**. We want to be able to access the data in these two columns...

2

Select the range **C6:C22**

3

On the **Home** tab of the **Ribbon**, click on **Format**  in the **Cells** group, then select **Format Cells** to display the **Format Cells** dialog box

4

Click on the **Protection** tab

Notice that the **Locked** setting is ticked...

5

Click on **Locked** until it appears without a tick, then click on **[OK]**

Nothing appears to have happened, but these cells will now be accessible even if you protect the worksheet...

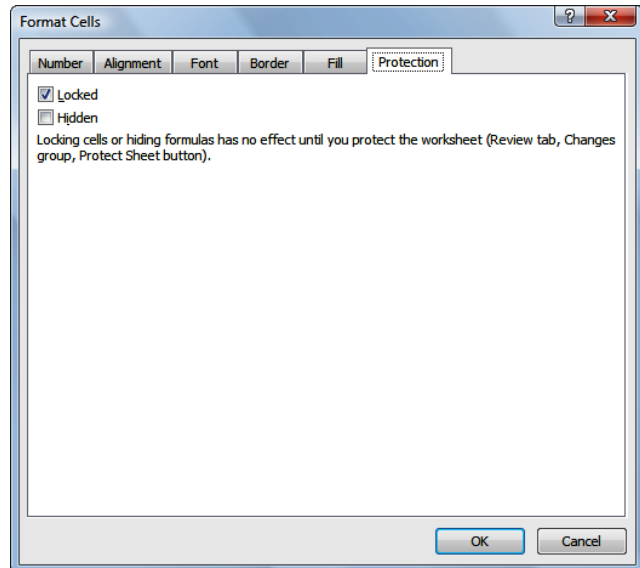
6

Repeat steps 2 to 5 for the range **E6:E22**

	A	B	C	D	E	F
1	<b>Yearly Souvenir Stationery Sales</b>					
2						
3						
4		Revenue		Costs		
5	Product	Forecast	Actual	Forecast	Actual	% - Actual
6	Fountain Pens	65,400	54,300	19,224	13,784	25%
7	Luxury Ball-point Pens	130,800	140,500	32,608	-	0%
8	Ball-point Pens	119,900	99,520	31,391	28,590	29%
9	Rulers	119,900	92,450	26,094	19,691	21%
10	Highlighter Pens	81,750	20,000	25,925	23,652	118%
11	Telephone Message books	76,500	78,375	23,204	-	0%
12	Postcard Notepads	76,500	67,250	23,204	-	0%
13	Postcards	146,250	152,630	53,655	54,852	36%
14	Erasers	109,000	105,870	26,090	23,894	23%
15	Luxury Pencils	51,000	62,320	16,104	17,963	29%
16	Pencils	109,000	112,450	24,210	23,416	21%
17	Giant Pencils	37,500	41,860	15,425	13,987	33%
18	Executive Diaries	37,500	39,780	15,425	18,947	48%
19	Professional Diaries	29,091	25,988	21,291	21,691	83%
20	Mail Openers	29,091	19,431	23,841	21,060	108%
21	Paper Weights	47,273	55,550	23,937	25,963	47%
22	Pen Tidies	29,091	23,650	22,114	20,050	85%
23	<b>TOTAL</b>	<b>1,295,546</b>	<b>1,191,924</b>	<b>423,742</b>	<b>327,540</b>	<b>27%</b>
24						


1

4




## For Your Reference...

To **unlock cells**:

1. Select the range that you want unlocked
2. On the **Home** tab, click on **Format**  and select **Format Cells**
3. Click on the **Protection** tab, then click on **Locked** to remove the tick and click on **[OK]**

## Handy to Know...

- You can unlock several non-contiguous ranges of cells simultaneously by selecting them while holding down **[Ctrl]**.
- Alternatively, to change the lock/unlock nature of cells, select the cell(s) then click on **Format**  on the **Home** tab and click on **Lock Cell**.

# PROTECTING A WORKSHEET


Once the relevant cells have been unlocked (if necessary), you can then apply worksheet or workbook protection. **Worksheet protection** applies only to the worksheet that is active. Once

the protection is applied, you can only change the cells that have been previously unlocked. However, formulas in locked cells will update if you change the data upon which they are dependent.

## Try This Yourself:

Same  
File

Continue using the previous file with this exercise, or open the file E835 Protection\_2.xlsx...

**1** On the **Home** tab of the **Ribbon**, click on **Format**  in the **Cells** group, then select **Protect Sheet** to display the **Protect Sheet** dialog box

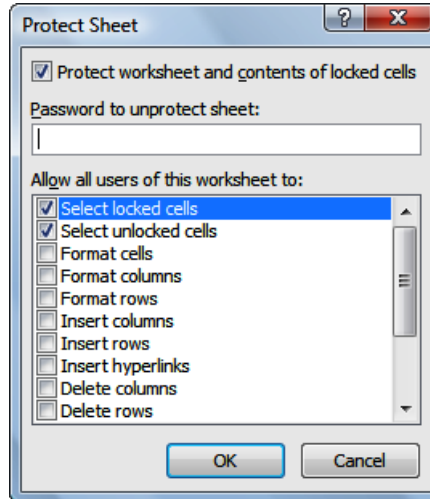
**2** Spend a moment scrolling through the list of options that you can allow or disallow a user access to

**3** Click on **Select locked cells** until it appears without a tick

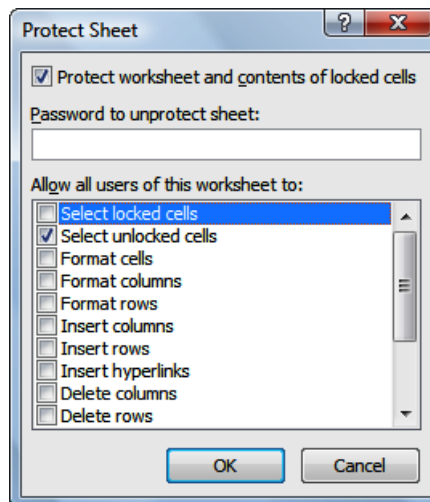
**4** Click on **[OK]**

*No obvious changes will occur on the screen, although you might notice that more Ribbon options are unable to be selected, than usual*

**1**




**3**



## For Your Reference...

To **protect** a **worksheet**:

1. On the **Home** tab, click on **Format**  then select **Protect Sheet**
2. Select the options you wish to allow (tick) or disallow (no tick)
3. Click on **[OK]**

## Handy to Know...

- You can control 15 different aspects of worksheet editing, such as inserting and deleting rows and columns, sorting and formatting cells. For users providing workbooks for data entry, these features are particularly useful.

# WORKING WITH A PROTECTED WORKSHEET

**Protected worksheets** work slightly differently to your average unprotected worksheet. While you are used to having full control with most worksheets, protected worksheets will ignore

your requests to make modifications unless you are trying to enter data in unprotected (that is, unlocked) cells.

## Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file E835 Protection\_3.xlsx...

1

Click on **B6**

Excel will not allow you to click on a locked cell of a protected worksheet.

Let's try an unlocked cell...

2

Click on **C10**

As you can see, the cell is selected and the value of the cell is displayed in the formula bar...

3

Type **90000** and press  to change the value

This time the edit is allowed, as it was made to a cell that was unlocked prior to protecting the worksheet. In addition, cells F10, C23 and F23 will be updated even though they are locked, as they contain formulas that reference the edited cell

	A	B	C	D	E	F
1	Yearly Souvenir Stationery Sales					
2						
3						
4		Revenue		Costs		
5	Product	Forecast	Actual	Forecast	Actual	% - Actual
6	Fountain Pens	65,400	54,300	19,224	13,784	25%
7	Luxury Ball-point Pens	130,800	140,500	32,608	-	0%
8	Ball-point Pens	119,900	99,520	31,391	28,590	29%
9	Rulers	119,900	92,450	26,094	19,691	21%
10	Highlighter Pens	81,750	20,000	25,925	23,652	118%
11	Telephone Message books	76,500	78,375	23,204	-	0%

1

When you click on B6 (which is locked) the active cell (which is unlocked) does not change...

	A	B	C	D	E	F
1	Yearly Souvenir Stationery Sales					
2						
3						
4		Revenue		Costs		
5	Product	Forecast	Actual	Forecast	Actual	% - Actual
6	Fountain Pens	65,400	54,300	19,224	13,784	25%
7	Luxury Ball-point Pens	130,800	140,500	32,608	-	0%
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21	Paper Weights	47,273	55,550	23,937	25,963	47%
22	Pen Tidies	29,091	23,650	22,114	20,050	85%
23	TOTAL	1,295,546	1,261,924	423,742	327,540	26%
24						

3

## For Your Reference...

To **work** with a **protected worksheet**:

1. Click on the unlocked cell that you want to change
2. Type the new data
3. Press

## Handy to Know...

- Keep in mind that reversing the locked nature of the worksheet is not rocket science – most users would be able to locate the option and remove this level of protection. Password protection offers a tighter level of security.

# DISABLING WORKSHEET PROTECTION

Worksheet protection is easily removed, which can seem to defeat the purpose of applying it in the first place. However, it is still useful for avoiding the inadvertent modification of cell data,

especially for yourself or less experienced users. To **disable worksheet protection** that is not password protected, you use the same command as the one you used to apply it.

## Try This Yourself:

Same  
File

Continue using the previous file with this exercise, or open the file E835 Protection\_4.xlsx...

1

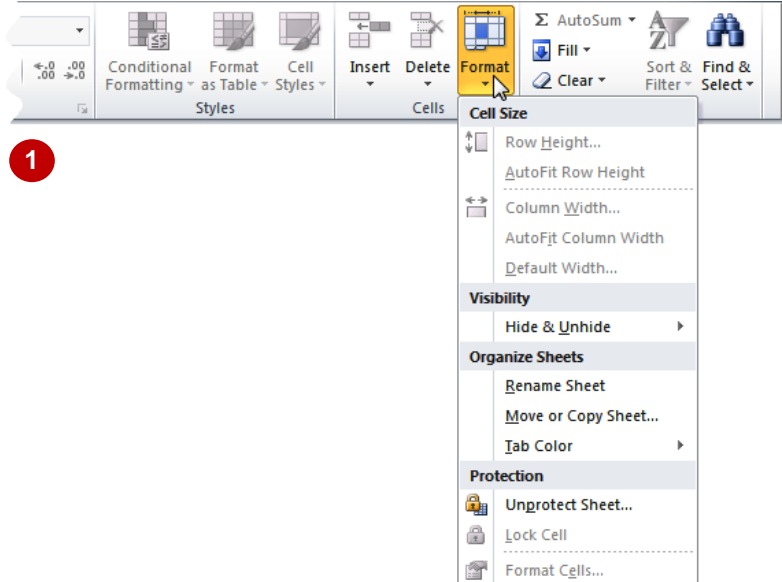
On the **Home** tab of the **Ribbon**, click on **Format** in the **Cells** group to display the menu

As the worksheet is protected, the **Protect Sheet** option has changed to **Unprotect Sheet...**

2

Select **Unprotect Sheet**

You will now be able to modify any cell in the worksheet once more. Notice also that all of the options on the ribbon are available again



2



## For Your Reference...

To **unprotect** a **worksheet**:

1. On the **Home** tab, click on **Format** in the **Cells** group
2. Select **Unprotect Sheet**

## Handy to Know...

- Remember that protection applies to each worksheet individually. If you don't see the correct command in the **Format** menu, check that you have the correct worksheet selected.



# PROVIDING RESTRICTED ACCESS TO CELLS



If you protect a worksheet without applying a password, anyone with a working knowledge of the protection process can simply disable the protection. They then have access to modify or

delete the data and/or the formulas. However, some users might need access to the data to edit it, so to **provide access to restricted users**, you can apply a password.

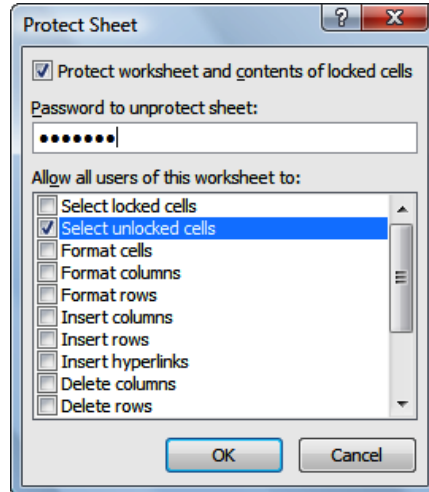
## Try This Yourself:

**Same File**

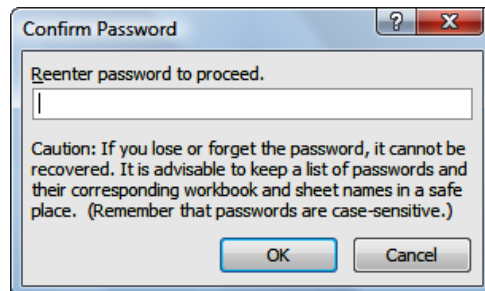
Continue using the previous file with this exercise, or open the file *E835 Protection\_5.xlsx*...

- 1 On the **Home** tab of the **Ribbon**, click on **Format** , then select **Protect Sheet** to display the **Protect Sheet** dialog box
- 2 Click in **Password to unprotect sheet** and type **protect**  
*Your password will be disguised as a series of dots...*
- 3 Click on **[OK]** to display the **Confirm Password** dialog box
- 4 Type **protect** again and click on **[OK]**  
*The sheet is protected again and some of the Ribbon options are unavailable. Let's try to unprotect the sheet...*
- 5 On the **Home** tab, click on **Format** , then select **Unprotect Sheet**  
*The password is required to unprotect the sheet...*
- 6 Type **protect** and click on **[OK]**  
*Protection is removed and you can now edit any cell*

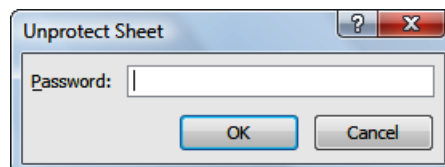
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3




5



## For Your Reference...

To **password protect** a **worksheet**:

1. On the **Home** tab, click on **Format**  then select **Protect Sheet**
2. Type a **Password** and click on **[OK]**
3. Retype the password and click on **[OK]**

## Handy to Know...

- You can also apply workbook-level passwords, but be very careful to create passwords that you can recall, because without them you will not be able to access the workbook again!

# PASSWORD PROTECTING A WORKBOOK


There are three ways to protect a workbook using a password. You can prevent users from **opening** the workbook without a password, prevent them from **editing** the workbook without

a password and you can prevent users from inserting, unhiding or deleting worksheets without a password. Your settings will depend entirely on your requirements.

## Try This Yourself:

Same  
File

Continue using the previous file with this exercise, or open the file E835 Protection\_6.xlsx...

1 On the **Review** tab of the **Ribbon**, click on **Protect Workbook**  in the **Changes** group, to display the **Protect Structure and Windows** dialog box


2 Ensure that both **Structure** and **Windows** appear with ticks

3 Click in **Password** and type **Elements**, then click on [OK]

You will be asked to confirm the password...

4 Type **Elements** again and click on [OK]

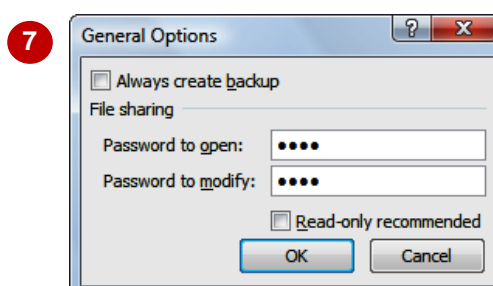
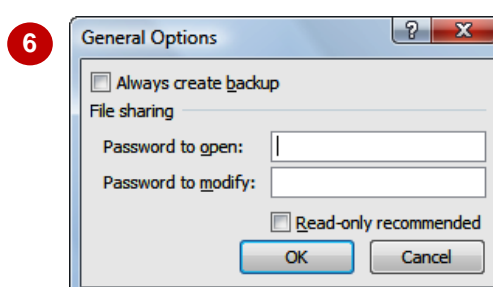
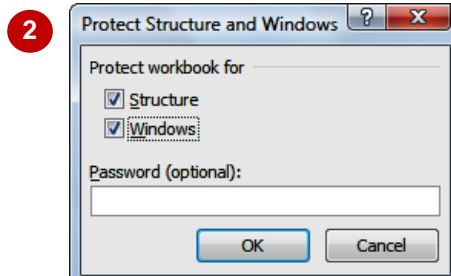
5 Click on the **File** tab and select **Save As** to display the **Save As** dialog box

6 Click on **Tools**  and select **General Options**

7 Type **Open** as the **Password to open**, press **Tab** and type **Edit** as the **Password to modify**


8 Click on [OK] and type **Open**, then click on [OK] and type **Edit** to reconfirm the passwords

9 Click on [OK], click on [Save] then click on [Yes] to replace the existing file




## For Your Reference...

To **password protect** a **workbook** against structural and window changes:

1. On the **Review** tab, click on **Protect Workbook** 
2. Ensure that both **Structure** and **Windows** appear with ticks, type and confirm the **Passwords** and click on [OK]

## For Your Reference...

To **password protect** a **workbook** against opening or editing changes:

1. Click on the **File** tab, select **Save As**, click on **Tools**  and select **General Options**
2. Type and confirm passwords for **Open** and/or **Modify** then save the workbook



# OPENING A PASSWORD PROTECTED WORKBOOK

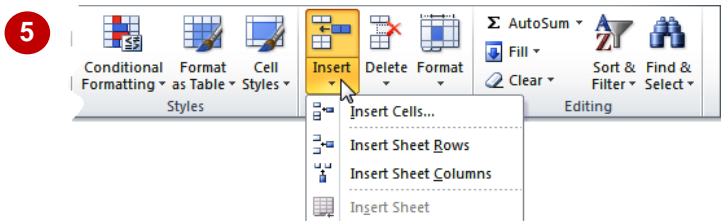
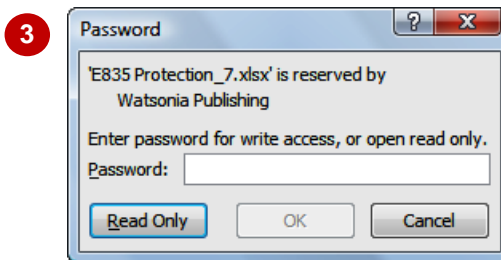
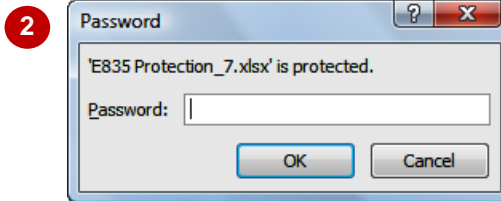
You can **open password protected workbooks** as long as you know the passwords, of which there may be two required to open a workbook. The first password ensures that you have access

to the workbook and without it, the workbook will remain closed. The second password can be used to control who has edit access to a workbook and can enable read-only access.

## Try This Yourself:

*Before starting this exercise you MUST ensure that Excel has started and that all workbooks are closed...*

- 1 Click on the **File** tab of the **Ribbon** and select **Open** to display the **Open** dialog box
- 2 In the course files folder, locate and click on **E835 Protection\_7.xlsx**, then click on **[Open]**  
*You will be prompted for a password to open the workbook...*
- 3 Type **Open** and click on **[OK]**  
*You will now be prompted for a password to edit the workbook...*
- 4 Type **Edit** and click on **[OK]**  
*The workbook will open...*
- 5 On the **Home** tab, click on the drop arrow for **Insert** in the **Cells** group, to display the menu  
*The menu option "Insert Sheet" is currently unavailable. This is because the workbook structure is also password protected...*
- 6 Click on the drop arrow for **Insert** in the **Cells** group, to close the menu



## For Your Reference...

To **open a password protected workbook**:

1. Click on the **File** tab and select **Open**
2. Locate and click on the workbook and click on **[Open]**
3. Type the password(s) and click on **[OK]**

## Handy to Know...

- If a user only has the **Open** password they can open the workbook in read-only mode. If they also have the **Edit** password, they will be able to open and edit the workbook.

# REMOVING A PASSWORD FROM A WORKBOOK

Passwords can be **removed from workbooks** as long as you know what the passwords are to begin with. You can protect workbooks using passwords in two ways. You can prevent them

from being opened and/or being modified and you can prevent changes to the structure and window size. Therefore you must use two different commands to **remove passwords**.

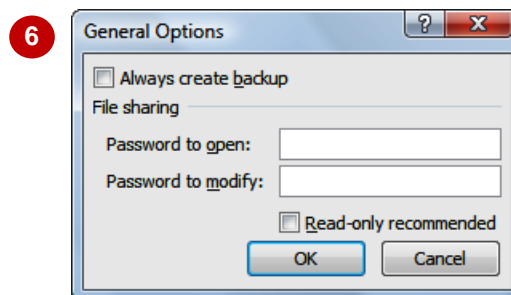
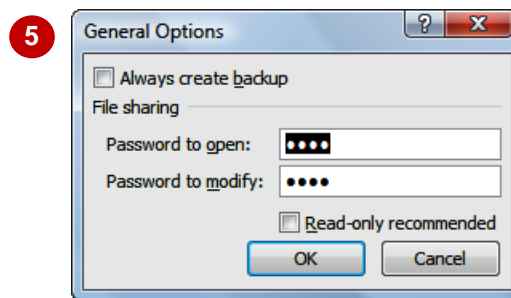
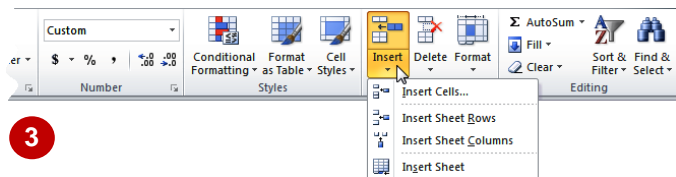
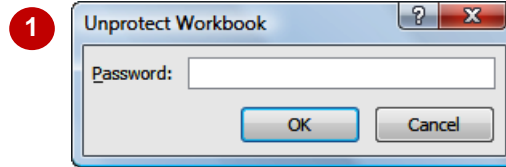
## Try This Yourself:

Same File

Continue using the previous file with this exercise, or open the file *E835 Protection\_8.xlsx* with the passwords *Open* and *Edit*...

- 1 Click on the **Review** tab of the **Ribbon**, then click on **Protect Workbook** in the **Changes** group, to display the **Unprotect Workbook** dialog box
- 2 Type **Elements** in **Password** and click on [OK]
- 3 Click on the **Home** tab, then click on the bottom half of **Insert** in the **Cells** group, to display the menu
 

*Notice that Insert Sheet is available again. The password has been removed as long as you save the workbook...*
- 4 Press [Esc] to hide the menu
- 5 Click on the **File** tab, select **Save As**, then click on **Tools** and select **General Options** to display the **Save Options** dialog box
- 6 Press [Del] to delete the password for **open** then select the password for **modify** and press [Del]
- 7 Click on [OK] then click on [Save] and click on [Yes] to replace the existing file



## For Your Reference...

To **remove a password** for structural and window changes:

1. Click on the **Review** tab then click on **Protect Workbook**
2. Type the password and click on [OK]

## For Your Reference...

To **remove a password** for opening or editing:

1. Click on the **File** tab, select **Save As** then click on **Tools** and select **General Options**
2. Delete the passwords and click on [OK]
3. Click on [Save]