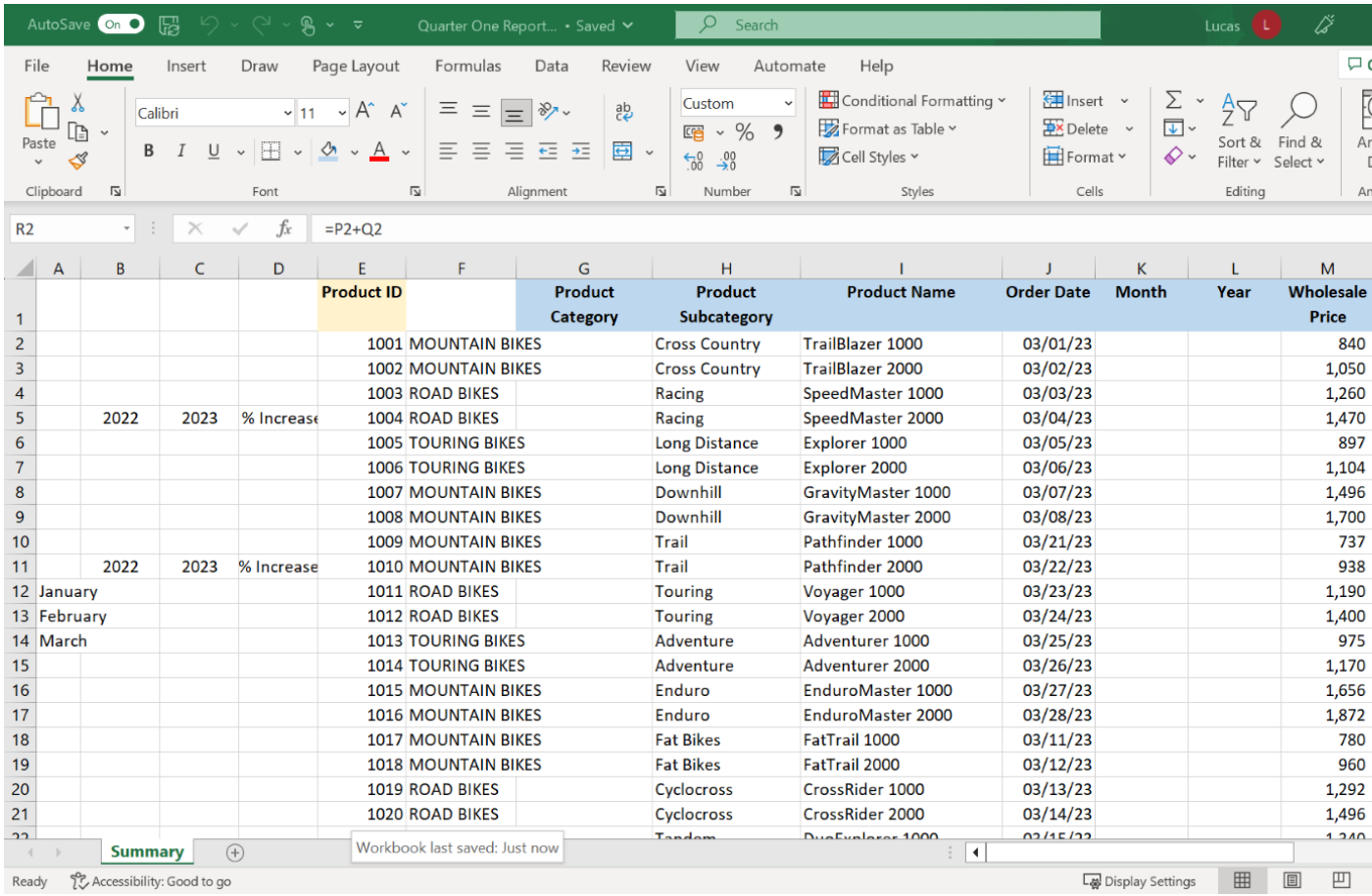
1. The sheet contained sales information for specific products spread over two years. It included wholesale and retail prices for each product and the numbers sold. You had to reformat information so that the worksheet showed only the required data and displayed it effectively.

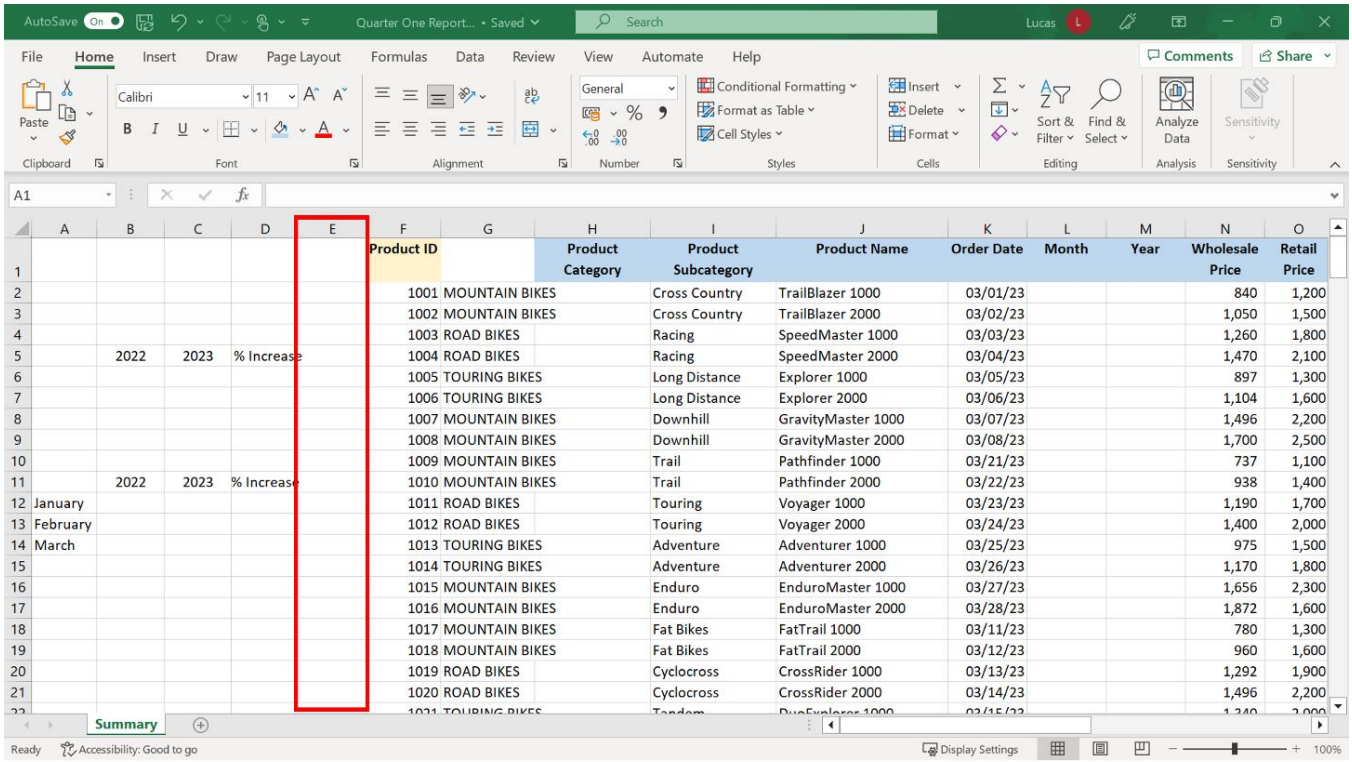


	A	B	C	D	E	F	G	H	I	J	K	L	M
1					Product ID		Product Category	Product Subcategory	Product Name	Order Date	Month	Year	Wholesale Price
2					1001	MOUNTAIN BIKES		Cross Country	TrailBlazer 1000	03/01/23			840
3					1002	MOUNTAIN BIKES		Cross Country	TrailBlazer 2000	03/02/23			1,050
4					1003	ROAD BIKES		Racing	SpeedMaster 1000	03/03/23			1,260
5		2022	2023	% Increase	1004	ROAD BIKES		Racing	SpeedMaster 2000	03/04/23			1,470
6					1005	TOURING BIKES		Long Distance	Explorer 1000	03/05/23			897
7					1006	TOURING BIKES		Long Distance	Explorer 2000	03/06/23			1,104
8					1007	MOUNTAIN BIKES		Downhill	GravityMaster 1000	03/07/23			1,496
9					1008	MOUNTAIN BIKES		Downhill	GravityMaster 2000	03/08/23			1,700
10					1009	MOUNTAIN BIKES		Trail	Pathfinder 1000	03/21/23			737
11		2022	2023	% Increase	1010	MOUNTAIN BIKES		Trail	Pathfinder 2000	03/22/23			938
12	January				1011	ROAD BIKES		Touring	Voyager 1000	03/23/23			1,190
13	February				1012	ROAD BIKES		Touring	Voyager 2000	03/24/23			1,400
14	March				1013	TOURING BIKES		Adventure	Adventurer 1000	03/25/23			975
15					1014	TOURING BIKES		Adventure	Adventurer 2000	03/26/23			1,170
16					1015	MOUNTAIN BIKES		Enduro	EnduroMaster 1000	03/27/23			1,656
17					1016	MOUNTAIN BIKES		Enduro	EnduroMaster 2000	03/28/23			1,872
18					1017	MOUNTAIN BIKES		Fat Bikes	FatTrail 1000	03/11/23			780
19					1018	MOUNTAIN BIKES		Fat Bikes	FatTrail 2000	03/12/23			960
20					1019	ROAD BIKES		Cyclocross	CrossRider 1000	03/13/23			1,292
21					1020	ROAD BIKES		Cyclocross	CrossRider 2000	03/14/23			1,496

Step 2: Add and format headings.

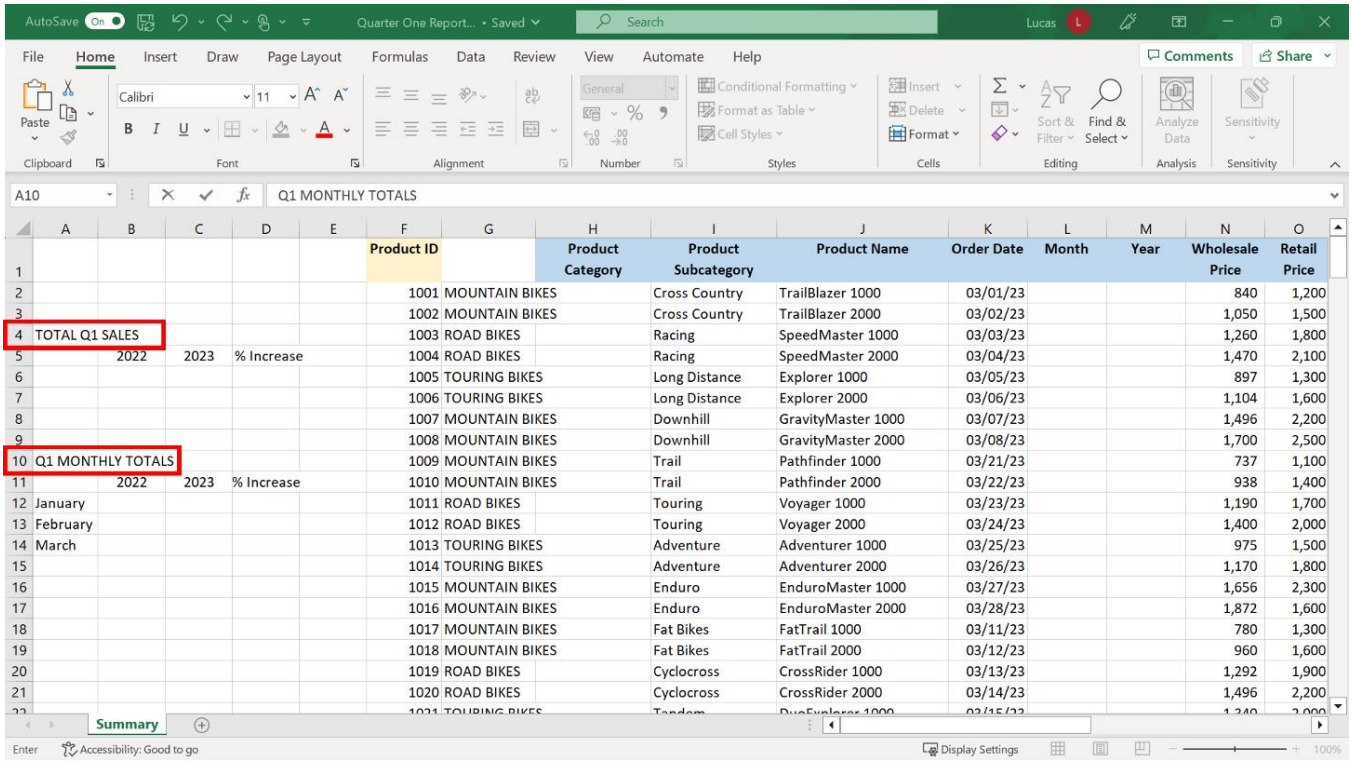
1. The first task was to widen column **A** as it was not wide enough to display the month names in cells **A12** to **A14** correctly. By dragging or double-clicking the vertical line between the initial letters identifying columns **A** and **B**, it was possible to resize the column.

   You then added a new blank column to the left of column **E**. Column **E** was titled **Product ID**. When inserting columns, it is important to remember that the new column is added to the left of the cursor position. You highlighted column **E** and then chose **Insert column** from the cells group on the **Home** ribbon or the right-click shortcut menu.



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1						Product ID		Product Category	Product Subcategory	Product Name	Order Date	Month	Year	Wholesale Price	Retail Price
2						1001	MOUNTAIN BIKES		Cross Country	TrailBlazer 1000	03/01/23			840	1,200
3						1002	MOUNTAIN BIKES		Cross Country	TrailBlazer 2000	03/02/23			1,050	1,500
4						1003	ROAD BIKES		Racing	SpeedMaster 1000	03/03/23			1,260	1,800
5		2022	2023	% Increase		1004	ROAD BIKES		Racing	SpeedMaster 2000	03/04/23			1,470	2,100
6						1005	TOURING BIKES		Long Distance	Explorer 1000	03/05/23			897	1,300
7						1006	TOURING BIKES		Long Distance	Explorer 2000	03/06/23			1,104	1,600
8						1007	MOUNTAIN BIKES		Downhill	GravityMaster 1000	03/07/23			1,496	2,200
9						1008	MOUNTAIN BIKES		Downhill	GravityMaster 2000	03/08/23			1,700	2,500
10						1009	MOUNTAIN BIKES		Trail	Pathfinder 1000	03/21/23			737	1,100
11		2022	2023	% Increase		1010	MOUNTAIN BIKES		Trail	Pathfinder 2000	03/22/23			938	1,400
12	January					1011	ROAD BIKES		Touring	Voyager 1000	03/23/23			1,190	1,700
13	February					1012	ROAD BIKES		Touring	Voyager 2000	03/24/23			1,400	2,000
14	March					1013	TOURING BIKES		Adventure	Adventurer 1000	03/25/23			975	1,500
15						1014	TOURING BIKES		Adventure	Adventurer 2000	03/26/23			1,170	1,800
16						1015	MOUNTAIN BIKES		Enduro	EnduroMaster 1000	03/27/23			1,656	2,300
17						1016	MOUNTAIN BIKES		Enduro	EnduroMaster 2000	03/28/23			1,872	1,600
18						1017	MOUNTAIN BIKES		Fat Bikes	FatTrail 1000	03/11/23			780	1,300
19						1018	MOUNTAIN BIKES		Fat Bikes	FatTrail 2000	03/12/23			960	1,600
20						1019	ROAD BIKES		Cyclocross	CrossRider 1000	03/13/23			1,292	1,900
21						1020	ROAD BIKES		Cyclocross	CrossRider 2000	03/14/23			1,496	2,200

1. Next, you selected cell **A4** and typed the heading **TOTAL Q1 SALES.** Then you selected cell **A10** and typed the heading **Q1 MONTHLY TOTALS.**



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1						Product ID		Product Category	Product Subcategory	Product Name	Order Date	Month	Year	Wholesale Price	Retail Price
2						1001	MOUNTAIN BIKES		Cross Country	TrailBlazer 1000	03/01/23			840	1,200
3						1002	MOUNTAIN BIKES		Cross Country	TrailBlazer 2000	03/02/23			1,050	1,500
4	TOTAL Q1 SALES					1003	ROAD BIKES		Racing	SpeedMaster 1000	03/03/23			1,260	1,800
5		2022	2023	% Increase		1004	ROAD BIKES		Racing	SpeedMaster 2000	03/04/23			1,470	2,100
6						1005	TOURING BIKES		Long Distance	Explorer 1000	03/05/23			897	1,300
7						1006	TOURING BIKES		Long Distance	Explorer 2000	03/06/23			1,104	1,600
8						1007	MOUNTAIN BIKES		Downhill	GravityMaster 1000	03/07/23			1,496	2,200
9						1008	MOUNTAIN BIKES		Downhill	GravityMaster 2000	03/08/23			1,700	2,500
10	Q1 MONTHLY TOTALS					1009	MOUNTAIN BIKES		Trail	Pathfinder 1000	03/21/23			737	1,100
11		2022	2023	% Increase		1010	MOUNTAIN BIKES		Trail	Pathfinder 2000	03/22/23			938	1,400
12	January					1011	ROAD BIKES		Touring	Voyager 1000	03/23/23			1,190	1,700
13	February					1012	ROAD BIKES		Touring	Voyager 2000	03/24/23			1,400	2,000
14	March					1013	TOURING BIKES		Adventure	Adventurer 1000	03/25/23			975	1,500
15						1014	TOURING BIKES		Adventure	Adventurer 2000	03/26/23			1,170	1,800
16						1015	MOUNTAIN BIKES		Enduro	EnduroMaster 1000	03/27/23			1,656	2,300
17						1016	MOUNTAIN BIKES		Enduro	EnduroMaster 2000	03/28/23			1,872	1,600
18						1017	MOUNTAIN BIKES		Fat Bikes	FatTrail 1000	03/11/23			780	1,300
19						1018	MOUNTAIN BIKES		Fat Bikes	FatTrail 2000	03/12/23			960	1,600
20						1019	ROAD BIKES		Cyclocross	CrossRider 1000	03/13/23			1,292	1,900
21						1020	ROAD BIKES		Cyclocross	CrossRider 2000	03/14/23			1,496	2,200

1. When the heading had been added to **A4** and **A10** you applied a range of formatting choices to ensure that the headings had impact. The quickest approach was to apply the formatting manually to cell **A4** and then use the **Format painter** feature to copy the same look to cell **A10**.

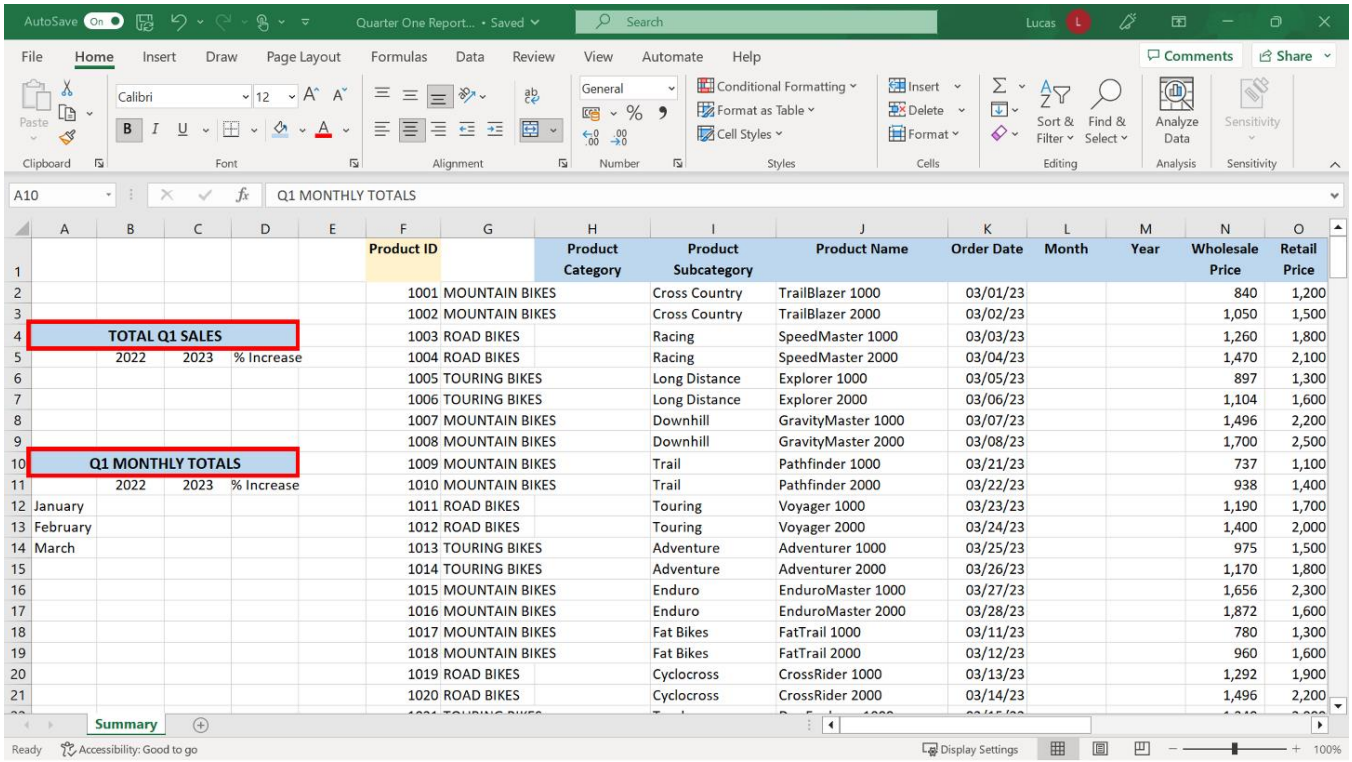
With the heading in **A4** selected, you used the **Font and Size** dropdown choices to adjust the appearance and size of the text. In the same **Font** section, you selected the **Bold** option to bold the text. Then you used the **Fill color** choice to change the background color of the cell.

The **Merge & Center** choice is in the **Alignment** section. This option helps to make headings appear professional by centering them above the table of information they relate to.

You began by typing headings in the cell at the left edge of the area that the heading had to be centered in. Then you highlighted from cell **A4** to the right edge. You selected the **Merge & center** button to merge the selected cells into one cell and display the heading in the center.

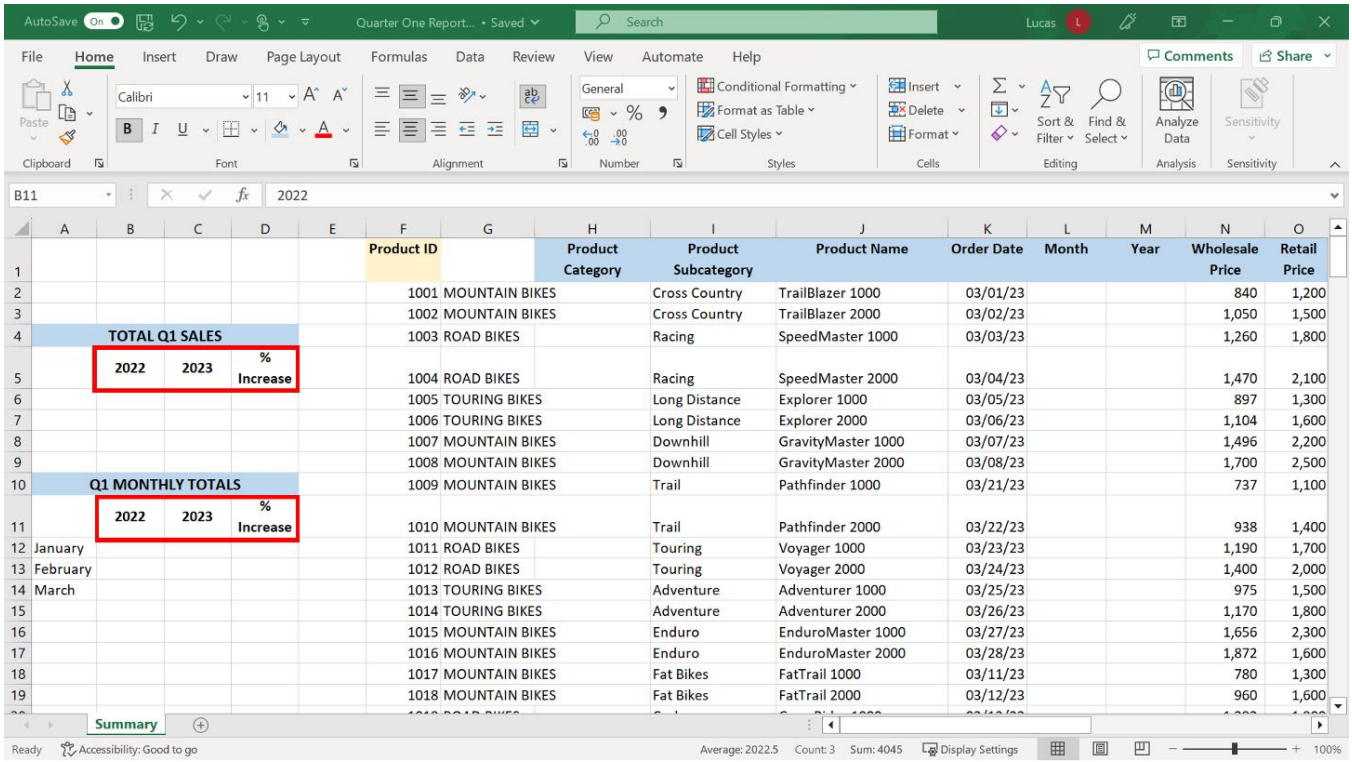
The **Format painter** feature is a useful tool to copy formats from one cell to another quickly. It copies the font, color, and **Merge & center** settings.

You positioned the cursor on cell **A4**, which was the cell that had the formatting you wished to copy. Then you selected the **Format painter** button. When the mouse pointer assumed a paintbrush shape, you selected cell **A10** to copy the formatting.



	Product ID	Product Category	Product Subcategory	Product Name	Order Date	Month	Year	Wholesale Price	Retail Price
2	1001	MOUNTAIN BIKES	Cross Country	TrailBlazer 1000	03/01/23			840	1,200
3	1002	MOUNTAIN BIKES	Cross Country	TrailBlazer 2000	03/02/23			1,050	1,500
5	1003	ROAD BIKES	Racing	SpeedMaster 1000	03/03/23			1,260	1,800
6	1004	ROAD BIKES	Racing	SpeedMaster 2000	03/04/23			1,470	2,100
7	1005	TOURING BIKES	Long Distance	Explorer 1000	03/05/23			897	1,300
8	1006	TOURING BIKES	Long Distance	Explorer 2000	03/06/23			1,104	1,600
9	1007	MOUNTAIN BIKES	Downhill	GravityMaster 1000	03/07/23			1,496	2,200
10	1008	MOUNTAIN BIKES	Downhill	GravityMaster 2000	03/08/23			1,700	2,500
11	1009	MOUNTAIN BIKES	Trail	Pathfinder 1000	03/21/23			737	1,100
12	1010	MOUNTAIN BIKES	Trail	Pathfinder 2000	03/22/23			938	1,400
13	1011	ROAD BIKES	Touring	Voyager 1000	03/23/23			1,190	1,700
14	1012	ROAD BIKES	Touring	Voyager 2000	03/24/23			1,400	2,000
15	1013	TOURING BIKES	Adventure	Adventurer 1000	03/25/23			975	1,500
16	1014	TOURING BIKES	Adventure	Adventurer 2000	03/26/23			1,170	1,800
17	1015	MOUNTAIN BIKES	Enduro	EnduroMaster 1000	03/27/23			1,656	2,300
18	1016	MOUNTAIN BIKES	Enduro	EnduroMaster 2000	03/28/23			1,872	1,600
19	1017	MOUNTAIN BIKES	Fat Bikes	FatTrail 1000	03/11/23			780	1,300
20	1018	MOUNTAIN BIKES	Fat Bikes	FatTrail 2000	03/12/23			960	1,600
21	1019	ROAD BIKES	Cyclocross	CrossRider 1000	03/13/23			1,292	1,900
22	1020	ROAD BIKES	Cyclocross	CrossRider 2000	03/14/23			1,496	2,200

1. The headings in **B5**, **C5** and **D5** also needed to stand out from other content. You selected these cells and then applied **Bold** formatting and selected the **Wrap Text** choice to position the headings correctly in the cells. You then used the **Format painter** to apply the same formatting to **B11**, **C11** and **D11**.

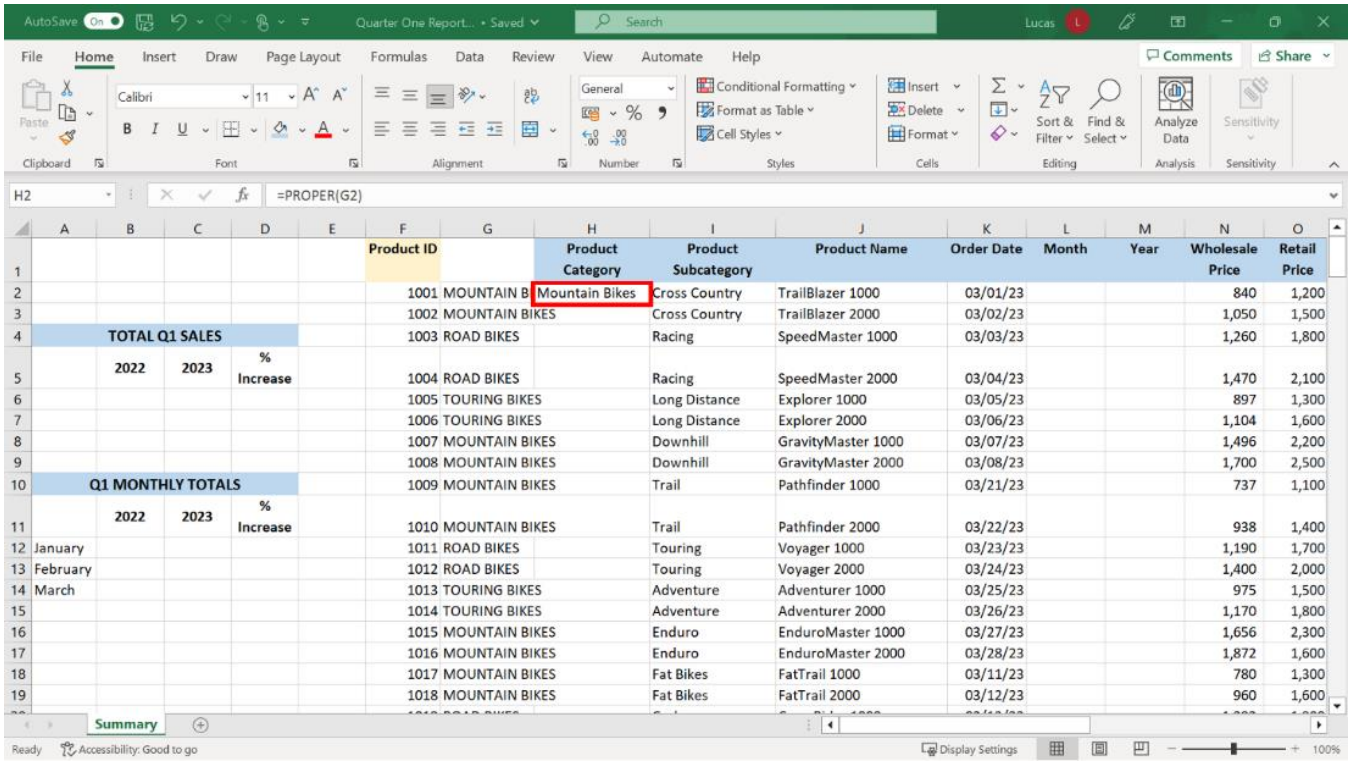


	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1						Product ID		Product Category	Product Subcategory	Product Name	Order Date	Month	Year	Wholesale Price	Retail Price
2						1001	MOUNTAIN BIKES		Cross Country	TrailBlazer 1000	03/01/23			840	1,200
3						1002	MOUNTAIN BIKES		Cross Country	TrailBlazer 2000	03/02/23			1,050	1,500
4		TOTAL Q1 SALES				1003	ROAD BIKES		Racing	SpeedMaster 1000	03/03/23			1,260	1,800
5		2022	2023	% Increase		1004	ROAD BIKES		Racing	SpeedMaster 2000	03/04/23			1,470	2,100
6						1005	TOURING BIKES		Long Distance	Explorer 1000	03/05/23			897	1,300
7						1006	TOURING BIKES		Long Distance	Explorer 2000	03/06/23			1,104	1,600
8						1007	MOUNTAIN BIKES		Downhill	GravityMaster 1000	03/07/23			1,496	2,200
9						1008	MOUNTAIN BIKES		Downhill	GravityMaster 2000	03/08/23			1,700	2,500
10		Q1 MONTHLY TOTALS				1009	MOUNTAIN BIKES		Trail	Pathfinder 1000	03/21/23			737	1,100
11		2022	2023	% Increase		1010	MOUNTAIN BIKES		Trail	Pathfinder 2000	03/22/23			938	1,400
12	January					1011	ROAD BIKES		Touring	Voyager 1000	03/23/23			1,190	1,700
13	February					1012	ROAD BIKES		Touring	Voyager 2000	03/24/23			1,400	2,000
14	March					1013	TOURING BIKES		Adventure	Adventurer 1000	03/25/23			975	1,500
15						1014	TOURING BIKES		Adventure	Adventurer 2000	03/26/23			1,170	1,800
16						1015	MOUNTAIN BIKES		Enduro	EnduroMaster 1000	03/27/23			1,656	2,300
17						1016	MOUNTAIN BIKES		Enduro	EnduroMaster 2000	03/28/23			1,872	1,600
18						1017	MOUNTAIN BIKES		Fat Bikes	FatTrail 1000	03/11/23			780	1,300
19						1018	MOUNTAIN BIKES		Fat Bikes	FatTrail 2000	03/12/23			960	1,600

Step 3: Customize and reorganize how the data is displayed.

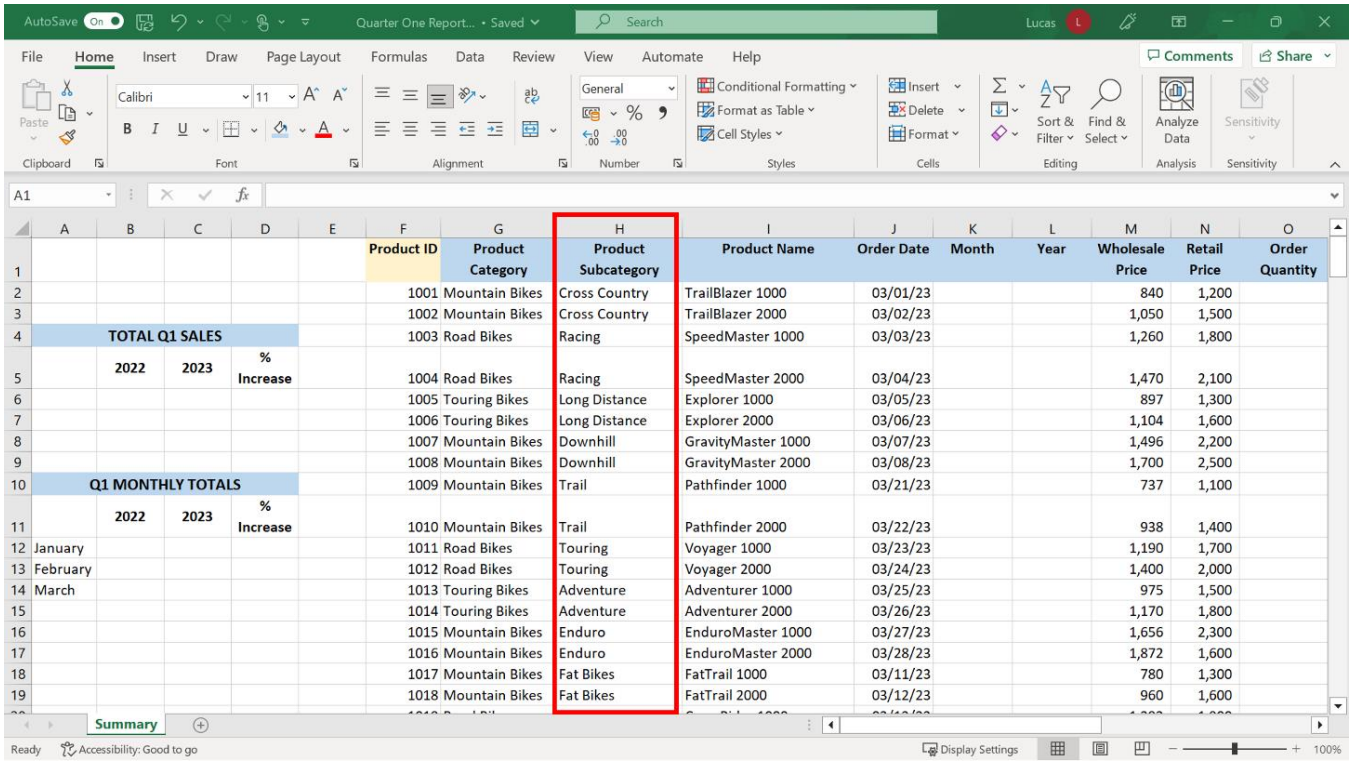
1. The entries in column **G** were in block capitals but you were asked to change the case. In cell **H2**, you created a formula using the **PROPER** function to copy the product name in cell **G2** The **PROPER** function is one of a collection of functions that can be used to change the case of text. It will format text as lowercase with a capital at the beginning of each word. In this worksheet, the correct syntax for this formula is:

   `=PROPER(G2)` When this formula was applied, the result in cell **H2** was Mountain Bikes.



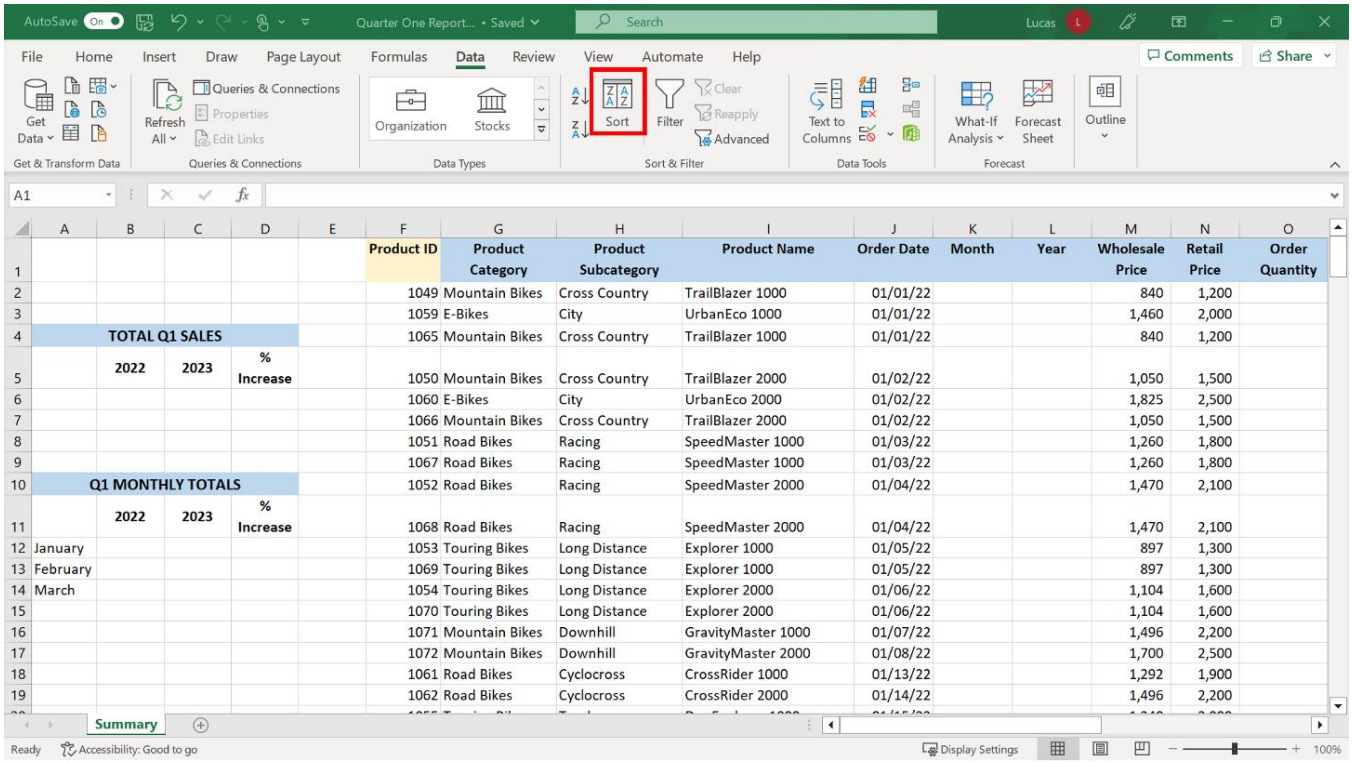
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1						Product ID		Product Category	Product Subcategory	Product Name	Order Date	Month	Year	Wholesale Price	Retail Price
2						1001	MOUNTAIN B	Mountain Bikes	Cross Country	TrailBlazer 1000	03/01/23			840	1,200
3						1002	MOUNTAIN BIKES		Cross Country	TrailBlazer 2000	03/02/23			1,050	1,500
4		TOTAL Q1 SALES				1003	ROAD BIKES		Racing	SpeedMaster 1000	03/03/23			1,260	1,800
5		2022	2023	% Increase		1004	ROAD BIKES		Racing	SpeedMaster 2000	03/04/23			1,470	2,100
6						1005	TOURING BIKES		Long Distance	Explorer 1000	03/05/23			897	1,300
7						1006	TOURING BIKES		Long Distance	Explorer 2000	03/06/23			1,104	1,600
8						1007	MOUNTAIN BIKES		Downhill	GravityMaster 1000	03/07/23			1,496	2,200
9						1008	MOUNTAIN BIKES		Downhill	GravityMaster 2000	03/08/23			1,700	2,500
10		Q1 MONTHLY TOTALS				1009	MOUNTAIN BIKES		Trail	Pathfinder 1000	03/21/23			737	1,100
11		2022	2023	% Increase		1010	MOUNTAIN BIKES		Trail	Pathfinder 2000	03/22/23			938	1,400
12	January					1011	ROAD BIKES		Touring	Voyager 1000	03/23/23			1,190	1,700
13	February					1012	ROAD BIKES		Touring	Voyager 2000	03/24/23			1,400	2,000
14	March					1013	TOURING BIKES		Adventure	Adventurer 1000	03/25/23			975	1,500
15						1014	TOURING BIKES		Adventure	Adventurer 2000	03/26/23			1,170	1,800
16						1015	MOUNTAIN BIKES		Enduro	EnduroMaster 1000	03/27/23			1,656	2,300
17						1016	MOUNTAIN BIKES		Enduro	EnduroMaster 2000	03/28/23			1,872	1,600
18						1017	MOUNTAIN BIKES		Fat Bikes	FatTrail 1000	03/11/23			780	1,300
19						1018	MOUNTAIN BIKES		Fat Bikes	FatTrail 2000	03/12/23			960	1,600

This formula had to be copied down column H using the **Autofill** feature. You first positioned the cursor on cell **H2**. There was a block of data to the left in column **G**, so you could use the double-click shortcut on the bottom right corner of the cursor to use the **Autofill** shortcut to copy the formula down column **H**. Once the formula was copied down column **H** and had generated results, the formulas were no longer necessary. You selected the block of results, chose **Copy** on the **Clipboard** section of the **Home** ribbon, and then selected **Paste Values** from the dropdown on the **Paste** button. These options would also have been available on the right-click shortcut menu. Once the formulas had been removed, you deleted column **G** by selecting the column and then choosing the **Delete** option from the cells section of the **Home** ribbon or from the shortcut right-click menu.



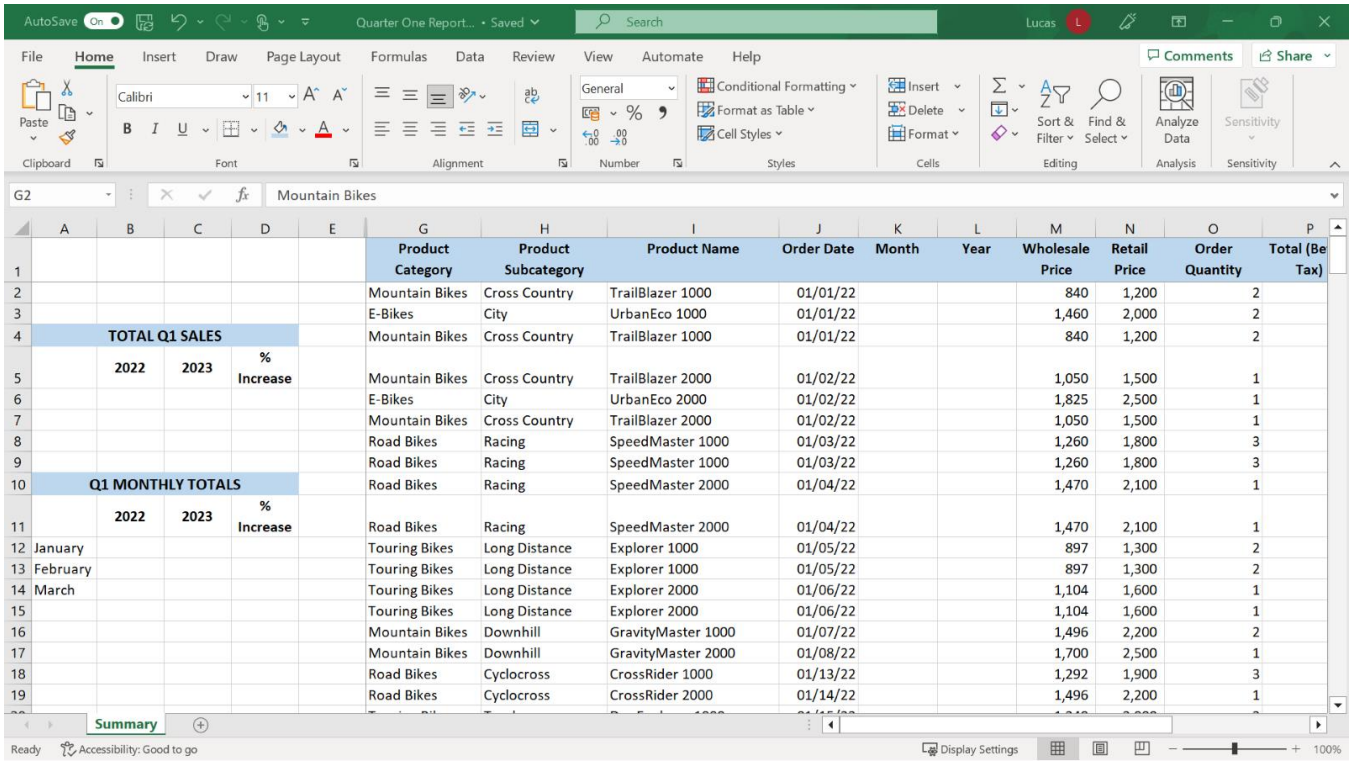
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1						Product ID	Product Category	Product Subcategory	Product Name	Order Date	Month	Year	Wholesale Price	Retail Price	Order Quantity
2						1001	Mountain Bikes	Cross Country	TrailBlazer 1000	03/01/23			840	1,200	
3						1002	Mountain Bikes	Cross Country	TrailBlazer 2000	03/02/23			1,050	1,500	
4		TOTAL Q1 SALES				1003	Road Bikes	Racing	SpeedMaster 1000	03/03/23			1,260	1,800	
5		2022	2023	% Increase		1004	Road Bikes	Racing	SpeedMaster 2000	03/04/23			1,470	2,100	
6						1005	Touring Bikes	Long Distance	Explorer 1000	03/05/23			897	1,300	
7						1006	Touring Bikes	Long Distance	Explorer 2000	03/06/23			1,104	1,600	
8						1007	Mountain Bikes	Downhill	GravityMaster 1000	03/07/23			1,496	2,200	
9						1008	Mountain Bikes	Downhill	GravityMaster 2000	03/08/23			1,700	2,500	
10		Q1 MONTHLY TOTALS				1009	Mountain Bikes	Trail	Pathfinder 1000	03/21/23			737	1,100	
11		2022	2023	% Increase		1010	Mountain Bikes	Trail	Pathfinder 2000	03/22/23			938	1,400	
12	January					1011	Road Bikes	Touring	Voyager 1000	03/23/23			1,190	1,700	
13	February					1012	Road Bikes	Touring	Voyager 2000	03/24/23			1,400	2,000	
14	March					1013	Touring Bikes	Adventure	Adventurer 1000	03/25/23			975	1,500	
15						1014	Touring Bikes	Adventure	Adventurer 2000	03/26/23			1,170	1,800	
16						1015	Mountain Bikes	Enduro	EnduroMaster 1000	03/27/23			1,656	2,300	
17						1016	Mountain Bikes	Enduro	EnduroMaster 2000	03/28/23			1,872	1,600	
18						1017	Mountain Bikes	Fat Bikes	FatTrail 1000	03/11/23			780	1,300	
19						1018	Mountain Bikes	Fat Bikes	FatTrail 2000	03/12/23			960	1,600	

1. The block of sales data had to be sorted so that the row order would be suitable for the monthly total calculations required in a later step. The block had to be sorted by date oldest to newest without sorting the data in columns **A** to **D**. The presence of a blank column, column **E**, would normally prevent this from happening if the data is sorted using the **Quick sort** shortcut choices in the **Data** ribbon. However, you ensured that Excel would sort the correct content by highlighting the data before sorting it. If you were using a standard keyboard, you could have positioned the cursor on cell **F2** and then used the **Ctrl+Shift+End key** combination to highlight the correct block of data quickly. You selected the **Sort** choice on the **Data** ribbon because the data was already highlighted. The **Sort** dialog should automatically have been aware that row one contained headings. In the **Sort By drop-down,** you selected **Order Date**, and in the **Order drop-down**, **Oldest to Newest.**



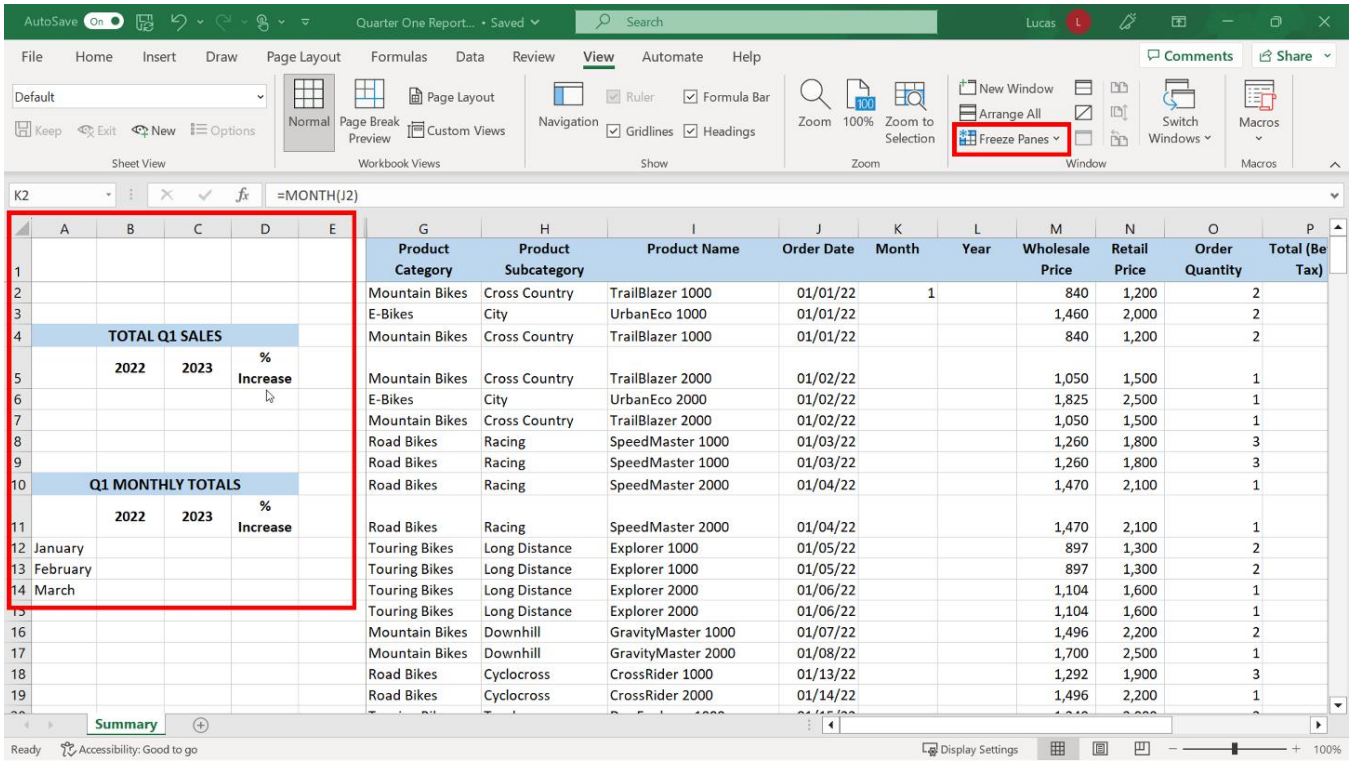
	Product ID	Product Category	Product Subcategory	Product Name	Order Date	Month	Year	Wholesale Price	Retail Price	Order Quantity
	1049	Mountain Bikes	Cross Country	TrailBlazer 1000	01/01/22			840	1,200	
	1059	E-Bikes	City	UrbanEco 1000	01/01/22			1,460	2,000	
	1065	Mountain Bikes	Cross Country	TrailBlazer 1000	01/01/22			840	1,200	
	1050	Mountain Bikes	Cross Country	TrailBlazer 2000	01/02/22			1,050	1,500	
	1060	E-Bikes	City	UrbanEco 2000	01/02/22			1,825	2,500	
	1066	Mountain Bikes	Cross Country	TrailBlazer 2000	01/02/22			1,050	1,500	
	1051	Road Bikes	Racing	SpeedMaster 1000	01/03/22			1,260	1,800	
	1067	Road Bikes	Racing	SpeedMaster 1000	01/03/22			1,260	1,800	
	1052	Road Bikes	Racing	SpeedMaster 2000	01/04/22			1,470	2,100	
	1068	Road Bikes	Racing	SpeedMaster 2000	01/04/22			1,470	2,100	
	1053	Touring Bikes	Long Distance	Explorer 1000	01/05/22			897	1,300	
	1069	Touring Bikes	Long Distance	Explorer 1000	01/05/22			897	1,300	
	1054	Touring Bikes	Long Distance	Explorer 2000	01/06/22			1,104	1,600	
	1070	Touring Bikes	Long Distance	Explorer 2000	01/06/22			1,104	1,600	
	1071	Mountain Bikes	Downhill	GravityMaster 1000	01/07/22			1,496	2,200	
	1072	Mountain Bikes	Downhill	GravityMaster 2000	01/08/22			1,700	2,500	
	1061	Road Bikes	Cyclocross	CrossRider 1000	01/13/22			1,292	1,900	
	1062	Road Bikes	Cyclocross	CrossRider 2000	01/14/22			1,496	2,200	

1. Some of the data was not relevant for the summary required so you highlighted column **F** and selected the **Hide and Unhide** choice on the **Format** dropdown in the **Font** section of the **Home** ribbon. Alternatively, you may have used the right-click shortcut menu to hide the column quickly. You repeated this process for columns **S** to **Y.** If there is data in a worksheet that does not need to be displayed, then hiding columns removes the content from view without deleting it. It is important that you remember that this is not a security measure, as the columns can easily be unhidden. However, it is a useful technique when screens are shared in presentations or meetings.



	A	B	C	D	E	G	H	I	J	K	L	M	N	O	P
1						Product Category	Product Subcategory	Product Name	Order Date	Month	Year	Wholesale Price	Retail Price	Order Quantity	Total (Be Tax)
2						Mountain Bikes	Cross Country	TrailBlazer 1000	01/01/22			840	1,200	2	
3						E-Bikes	City	UrbanEco 1000	01/01/22			1,460	2,000	2	
4		TOTAL Q1 SALES				Mountain Bikes	Cross Country	TrailBlazer 1000	01/01/22			840	1,200	2	
5		2022	2023	% Increase		Mountain Bikes	Cross Country	TrailBlazer 2000	01/02/22			1,050	1,500	1	
6						E-Bikes	City	UrbanEco 2000	01/02/22			1,825	2,500	1	
7						Mountain Bikes	Cross Country	TrailBlazer 2000	01/02/22			1,050	1,500	1	
8						Road Bikes	Racing	SpeedMaster 1000	01/03/22			1,260	1,800	3	
9						Road Bikes	Racing	SpeedMaster 1000	01/03/22			1,260	1,800	3	
10		Q1 MONTHLY TOTALS				Road Bikes	Racing	SpeedMaster 2000	01/04/22			1,470	2,100	1	
11		2022	2023	% Increase		Road Bikes	Racing	SpeedMaster 2000	01/04/22			1,470	2,100	1	
12	January					Touring Bikes	Long Distance	Explorer 1000	01/05/22			897	1,300	2	
13	February					Touring Bikes	Long Distance	Explorer 1000	01/05/22			897	1,300	2	
14	March					Touring Bikes	Long Distance	Explorer 2000	01/06/22			1,104	1,600	1	
15						Touring Bikes	Long Distance	Explorer 2000	01/06/22			1,104	1,600	1	
16						Mountain Bikes	Downhill	GravityMaster 1000	01/07/22			1,496	2,200	2	
17						Mountain Bikes	Downhill	GravityMaster 2000	01/08/22			1,700	2,500	1	
18						Road Bikes	Cyclocross	CrossRider 1000	01/13/22			1,292	1,900	3	
19						Road Bikes	Cyclocross	CrossRider 2000	01/14/22			1,496	2,200	1	

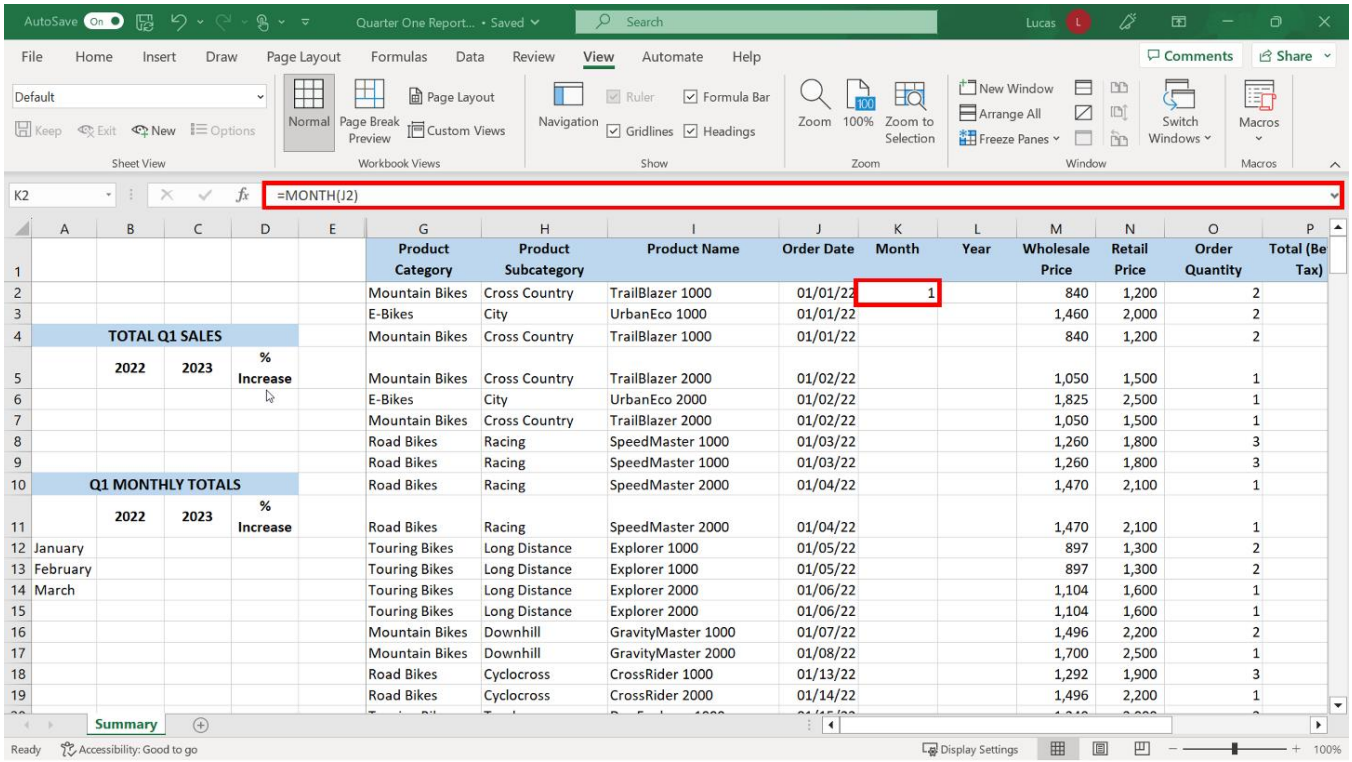
1. To make reading the data a smoother process, you were asked to freeze both rows and columns on the screen. You positioned the cursor on cell **G2** and selected the **View** tab to display the ribbon. You opened the **Freeze** dropdown and selected the **Freeze Panes** option. Columns **A** to **E** and row **1** which were above and to the left of the cursor, were now stay frozen on the screen. Remember that, with **Freeze Panes,** the position of the cursor is used to determine the areas of the screen that should remain static.



	G	H	I	J	K	L	M	N	O	P
1	Product Category	Product Subcategory	Product Name	Order Date	Month	Year	Wholesale Price	Retail Price	Order Quantity	Total (Be Tax)
2	Mountain Bikes	Cross Country	TrailBlazer 1000	01/01/22	1		840	1,200	2	
3	E-Bikes	City	UrbanEco 1000	01/01/22			1,460	2,000	2	
4	Mountain Bikes	Cross Country	TrailBlazer 1000	01/01/22			840	1,200	2	
5	Mountain Bikes	Cross Country	TrailBlazer 2000	01/02/22			1,050	1,500	1	
6	E-Bikes	City	UrbanEco 2000	01/02/22			1,825	2,500	1	
7	Mountain Bikes	Cross Country	TrailBlazer 2000	01/02/22			1,050	1,500	1	
8	Road Bikes	Racing	SpeedMaster 1000	01/03/22			1,260	1,800	3	
9	Road Bikes	Racing	SpeedMaster 1000	01/03/22			1,260	1,800	3	
10	Road Bikes	Racing	SpeedMaster 2000	01/04/22			1,470	2,100	1	
11	Road Bikes	Racing	SpeedMaster 2000	01/04/22			1,470	2,100	1	
12	Touring Bikes	Long Distance	Explorer 1000	01/05/22			897	1,300	2	
13	Touring Bikes	Long Distance	Explorer 1000	01/05/22			897	1,300	2	
14	Touring Bikes	Long Distance	Explorer 2000	01/06/22			1,104	1,600	1	
15	Touring Bikes	Long Distance	Explorer 2000	01/06/22			1,104	1,600	1	
16	Mountain Bikes	Downhill	GravityMaster 1000	01/07/22			1,496	2,200	2	
17	Mountain Bikes	Downhill	GravityMaster 2000	01/08/22			1,700	2,500	1	
18	Road Bikes	Cyclocross	CrossRider 1000	01/13/22			1,292	1,900	3	
19	Road Bikes	Cyclocross	CrossRider 2000	01/14/22			1,496	2,200	1	

Step 4: Use formulas to create new row information.

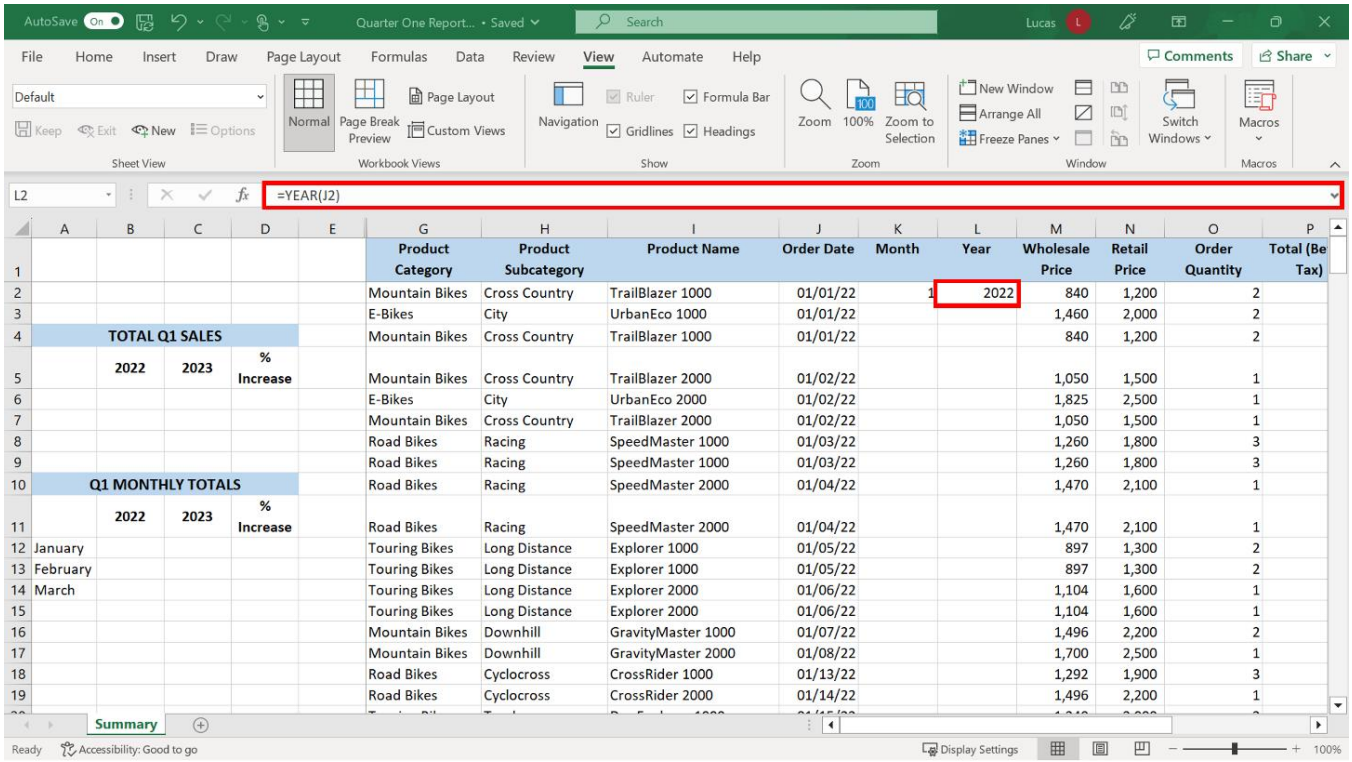
1. You were asked to create a formula in **K2** using **MONTH** and a formula in **L2** using **YEAR** to extract the two component parts of the date in **J2**. These formulas also needed to be copied down as far as row **246**. The **MONTH** and **YEAR** functions are in the **Date and Time** category of functions. It will extract the stated element from the cell entry in **J2**, which is formatted as a date. The syntax for the formula in **K2** was: `=MONTH(J2)` The result should be 1.



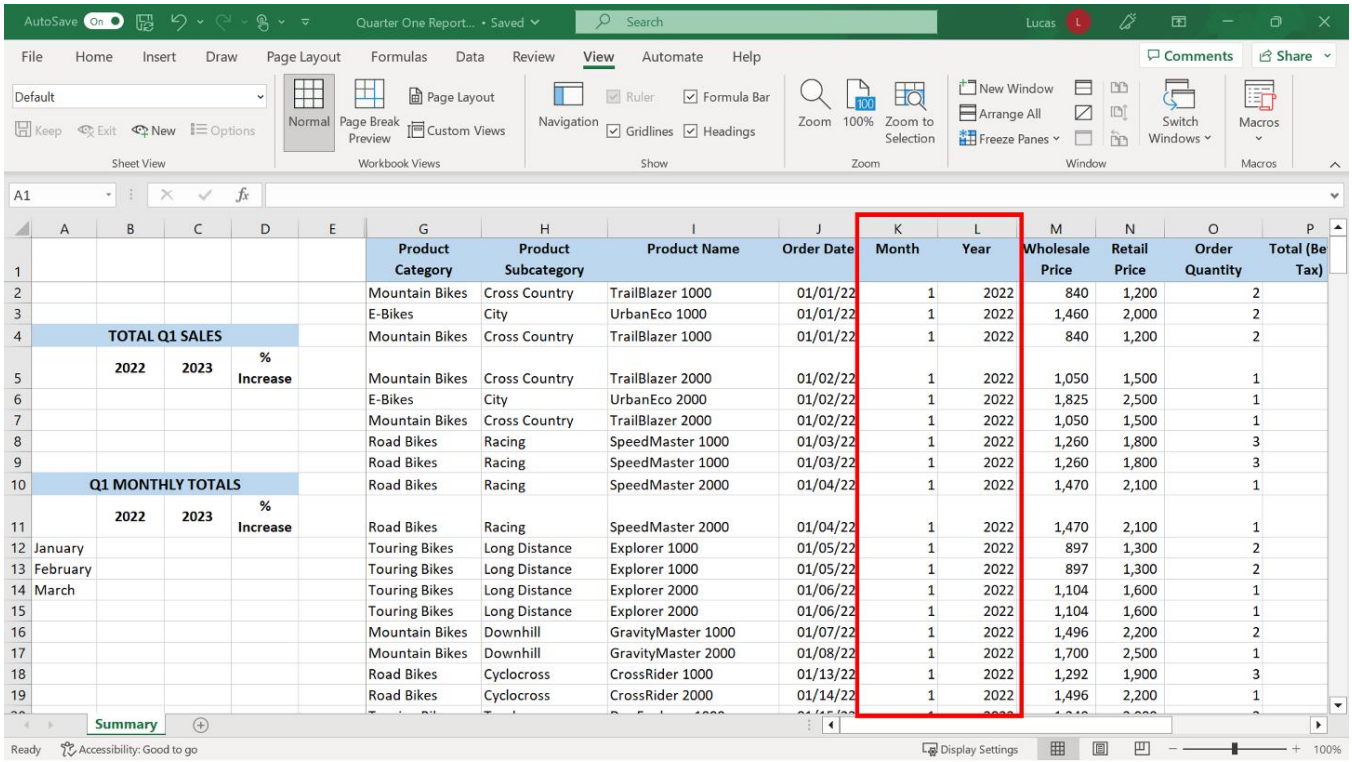
The syntax for the formula in **L2** should be:

=YEAR(J2)

The result should read 2022.

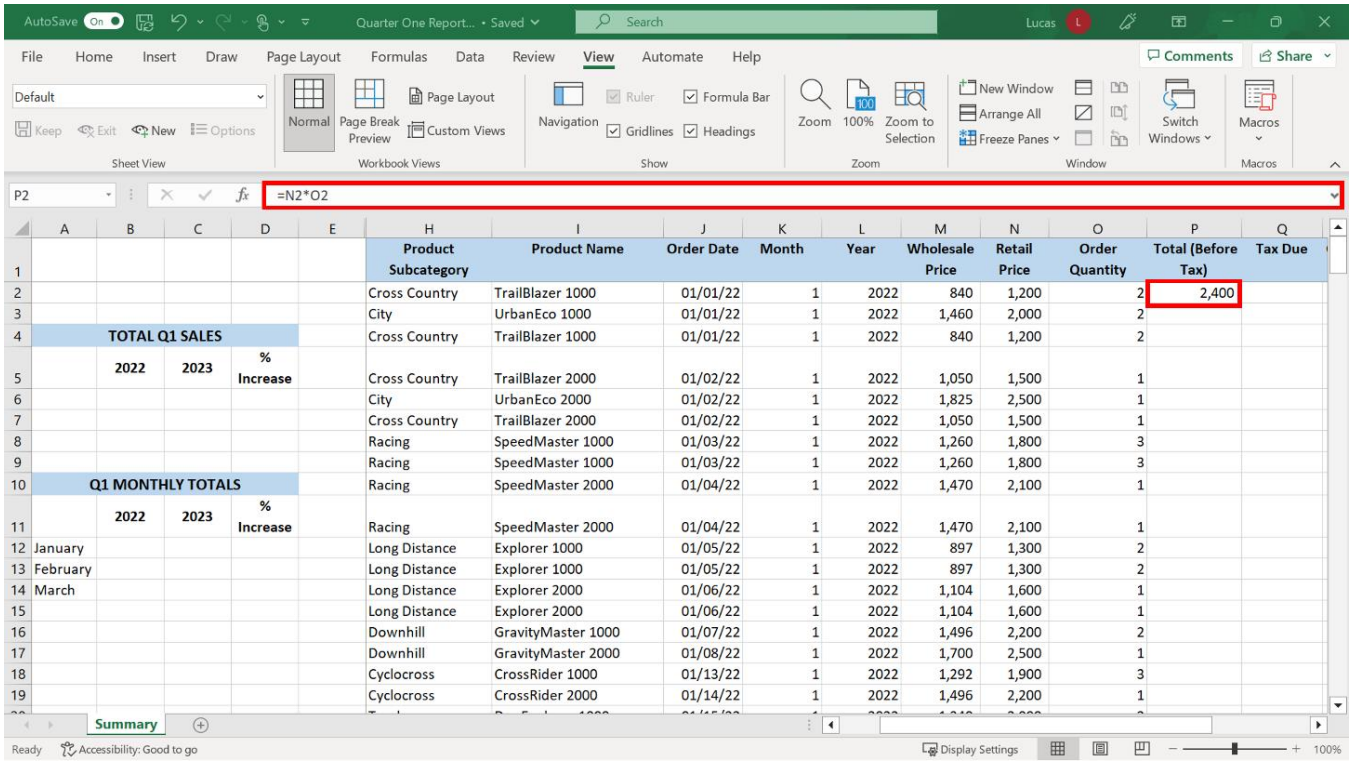


You then copied down the two formulas using the **Autofill** double-click shortcut or **Copy and paste.**



	A	B	C	D	E	G	H	I	J	K	L	M	N	O	P
1						Product Category	Product Subcategory	Product Name	Order Date	Month	Year	Wholesale Price	Retail Price	Order Quantity	Total (Be Tax)
2						Mountain Bikes	Cross Country	TrailBlazer 1000	01/01/22	1	2022	840	1,200	2	
3						E-Bikes	City	UrbanEco 1000	01/01/22	1	2022	1,460	2,000	2	
4		TOTAL Q1 SALES				Mountain Bikes	Cross Country	TrailBlazer 1000	01/01/22	1	2022	840	1,200	2	
5		2022	2023	% Increase		Mountain Bikes	Cross Country	TrailBlazer 2000	01/02/22	1	2022	1,050	1,500	1	
6						E-Bikes	City	UrbanEco 2000	01/02/22	1	2022	1,825	2,500	1	
7						Mountain Bikes	Cross Country	TrailBlazer 2000	01/02/22	1	2022	1,050	1,500	1	
8						Road Bikes	Racing	SpeedMaster 1000	01/03/22	1	2022	1,260	1,800	3	
9						Road Bikes	Racing	SpeedMaster 1000	01/03/22	1	2022	1,260	1,800	3	
10		Q1 MONTHLY TOTALS				Road Bikes	Racing	SpeedMaster 2000	01/04/22	1	2022	1,470	2,100	1	
11		2022	2023	% Increase		Road Bikes	Racing	SpeedMaster 2000	01/04/22	1	2022	1,470	2,100	1	
12	January					Touring Bikes	Long Distance	Explorer 1000	01/05/22	1	2022	897	1,300	2	
13	February					Touring Bikes	Long Distance	Explorer 1000	01/05/22	1	2022	897	1,300	2	
14	March					Touring Bikes	Long Distance	Explorer 2000	01/06/22	1	2022	1,104	1,600	1	
15						Touring Bikes	Long Distance	Explorer 2000	01/06/22	1	2022	1,104	1,600	1	
16						Mountain Bikes	Downhill	GravityMaster 1000	01/07/22	1	2022	1,496	2,200	2	
17						Mountain Bikes	Downhill	GravityMaster 2000	01/08/22	1	2022	1,700	2,500	1	
18						Road Bikes	Cyclocross	CrossRider 1000	01/13/22	1	2022	1,292	1,900	3	
19						Road Bikes	Cyclocross	CrossRider 2000	01/14/22	1	2022	1,496	2,200	1	

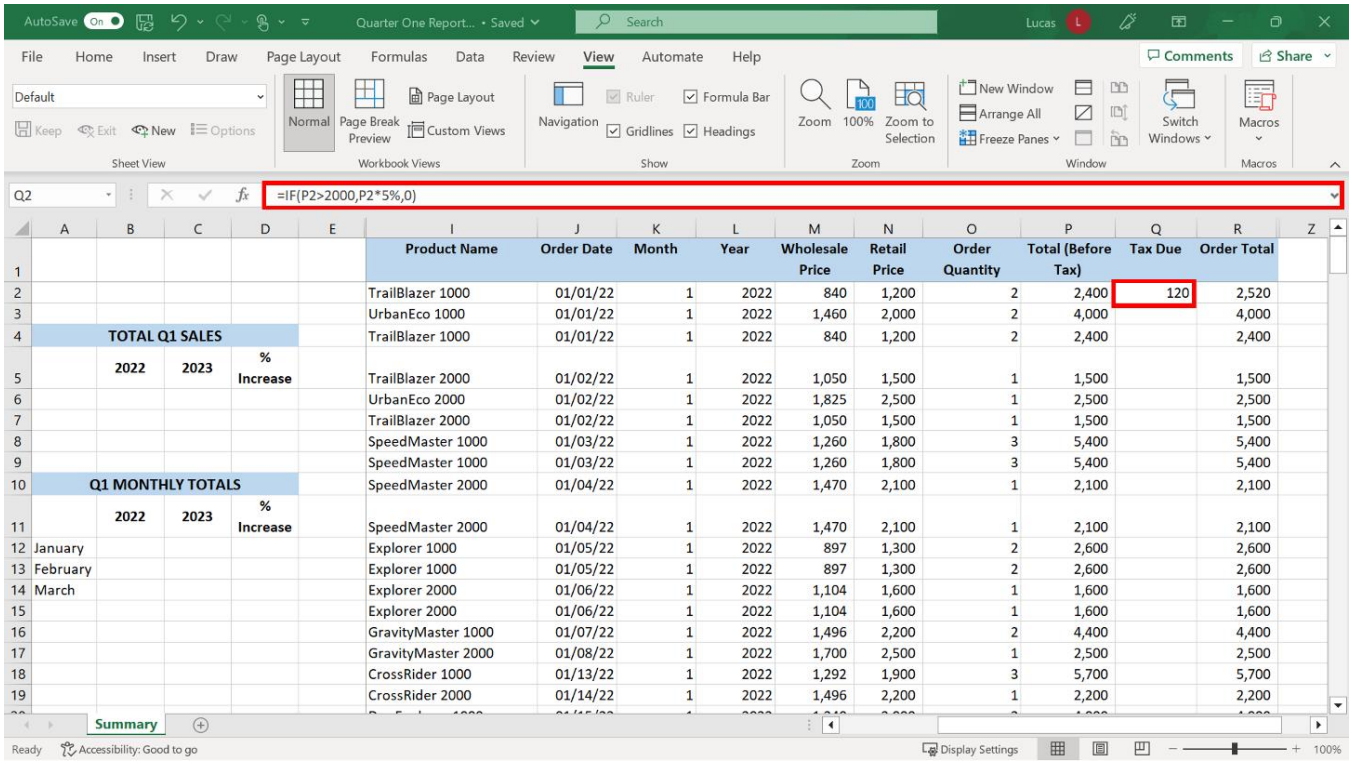
1. In **P2**, you created a standard multiplication formula that multiplied the retail price by the order quantity. You then copied the formula using **Autofill** or **Copy and paste**. The formula in **P2** should read: **=N2*O2** The result should be 2,400.



	A	B	C	D	E	H	I	J	K	L	M	N	O	P	Q
1						Product Subcategory	Product Name	Order Date	Month	Year	Wholesale Price	Retail Price	Order Quantity	Total (Before Tax)	Tax Due
2						Cross Country	TrailBlazer 1000	01/01/22	1	2022	840	1,200	2	2,400	
3						City	UrbanEco 1000	01/01/22	1	2022	1,460	2,000	2		
4		TOTAL Q1 SALES				Cross Country	TrailBlazer 1000	01/01/22	1	2022	840	1,200	2		
5		2022	2023	% Increase		Cross Country	TrailBlazer 2000	01/02/22	1	2022	1,050	1,500	1		
6						City	UrbanEco 2000	01/02/22	1	2022	1,825	2,500	1		
7						Cross Country	TrailBlazer 2000	01/02/22	1	2022	1,050	1,500	1		
8						Racing	SpeedMaster 1000	01/03/22	1	2022	1,260	1,800	3		
9						Racing	SpeedMaster 1000	01/03/22	1	2022	1,260	1,800	3		
10		Q1 MONTHLY TOTALS				Racing	SpeedMaster 2000	01/04/22	1	2022	1,470	2,100	1		
11		2022	2023	% Increase		Racing	SpeedMaster 2000	01/04/22	1	2022	1,470	2,100	1		
12	January					Long Distance	Explorer 1000	01/05/22	1	2022	897	1,300	2		
13	February					Long Distance	Explorer 1000	01/05/22	1	2022	897	1,300	2		
14	March					Long Distance	Explorer 2000	01/06/22	1	2022	1,104	1,600	1		
15						Long Distance	Explorer 2000	01/06/22	1	2022	1,104	1,600	1		
16						Downhill	GravityMaster 1000	01/07/22	1	2022	1,496	2,200	2		
17						Downhill	GravityMaster 2000	01/08/22	1	2022	1,700	2,500	1		
18						Cyclocross	CrossRider 1000	01/13/22	1	2022	1,292	1,900	3		
19						Cyclocross	CrossRider 2000	01/14/22	1	2022	1,496	2,200	1		

1. In cell **Q2**, you created a formula using an **IF** function that calculated if tax was due on the amount in **P2**. The **IF** function had to check if the amount in **P2** was over 2000. If it was, then the amount in **P2** had to be multiplied by 5%. If it was not,

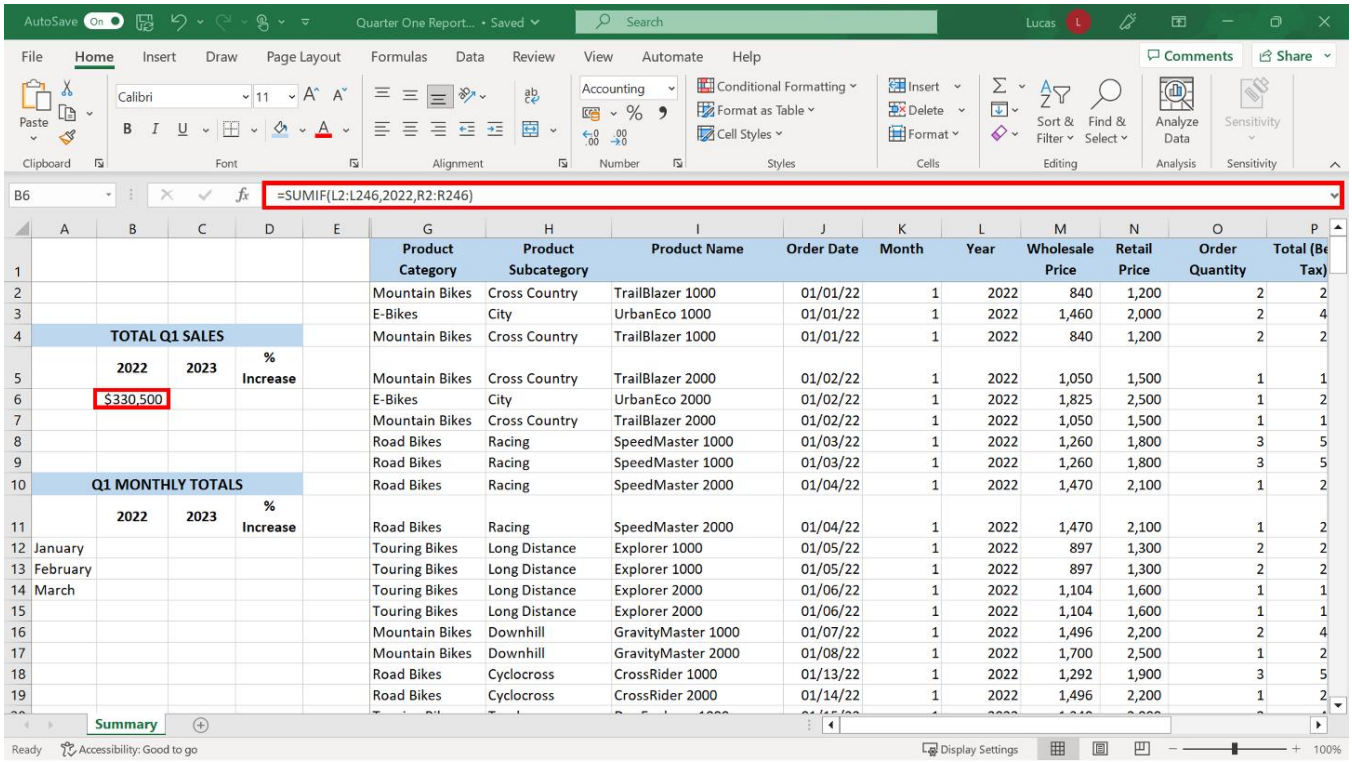
then cell **Q2** should display a 0. The **IF** formula in **P2** should read: `=IF(P2>2000,P2*5%,0)` Here the Value if true action is a formula embedded in the larger logical formula. The percentage calculation is processed because the logical test for the **IF** returns a value of TRUE. It is possible to have calculations as both the Value if true and the Value if false actions. The result of this formula should be 120 which is 5% of the value in **P2**.



	Product Name	Order Date	Month	Year	Wholesale Price	Retail Price	Order Quantity	Total (Before Tax)	Tax Due	Order Total
2	TrailBlazer 1000	01/01/22	1	2022	840	1,200	2	2,400	120	2,520
3	UrbanEco 1000	01/01/22	1	2022	1,460	2,000	2	4,000		4,000
4	TrailBlazer 1000	01/01/22	1	2022	840	1,200	2	2,400		2,400
5	TrailBlazer 2000	01/02/22	1	2022	1,050	1,500	1	1,500		1,500
6	UrbanEco 2000	01/02/22	1	2022	1,825	2,500	1	2,500		2,500
7	TrailBlazer 2000	01/02/22	1	2022	1,050	1,500	1	1,500		1,500
8	SpeedMaster 1000	01/03/22	1	2022	1,260	1,800	3	5,400		5,400
9	SpeedMaster 1000	01/03/22	1	2022	1,260	1,800	3	5,400		5,400
10	SpeedMaster 2000	01/04/22	1	2022	1,470	2,100	1	2,100		2,100
11	SpeedMaster 2000	01/04/22	1	2022	1,470	2,100	1	2,100		2,100
12	Explorer 1000	01/05/22	1	2022	897	1,300	2	2,600		2,600
13	Explorer 1000	01/05/22	1	2022	897	1,300	2	2,600		2,600
14	Explorer 2000	01/06/22	1	2022	1,104	1,600	1	1,600		1,600
15	Explorer 2000	01/06/22	1	2022	1,104	1,600	1	1,600		1,600
16	GravityMaster 1000	01/07/22	1	2022	1,496	2,200	2	4,400		4,400
17	GravityMaster 2000	01/08/22	1	2022	1,700	2,500	1	2,500		2,500
18	CrossRider 1000	01/13/22	1	2022	1,292	1,900	3	5,700		5,700
19	CrossRider 2000	01/14/22	1	2022	1,496	2,200	1	2,200		2,200

Step 5: Create formulas to calculate and compare the profit margin across two years.

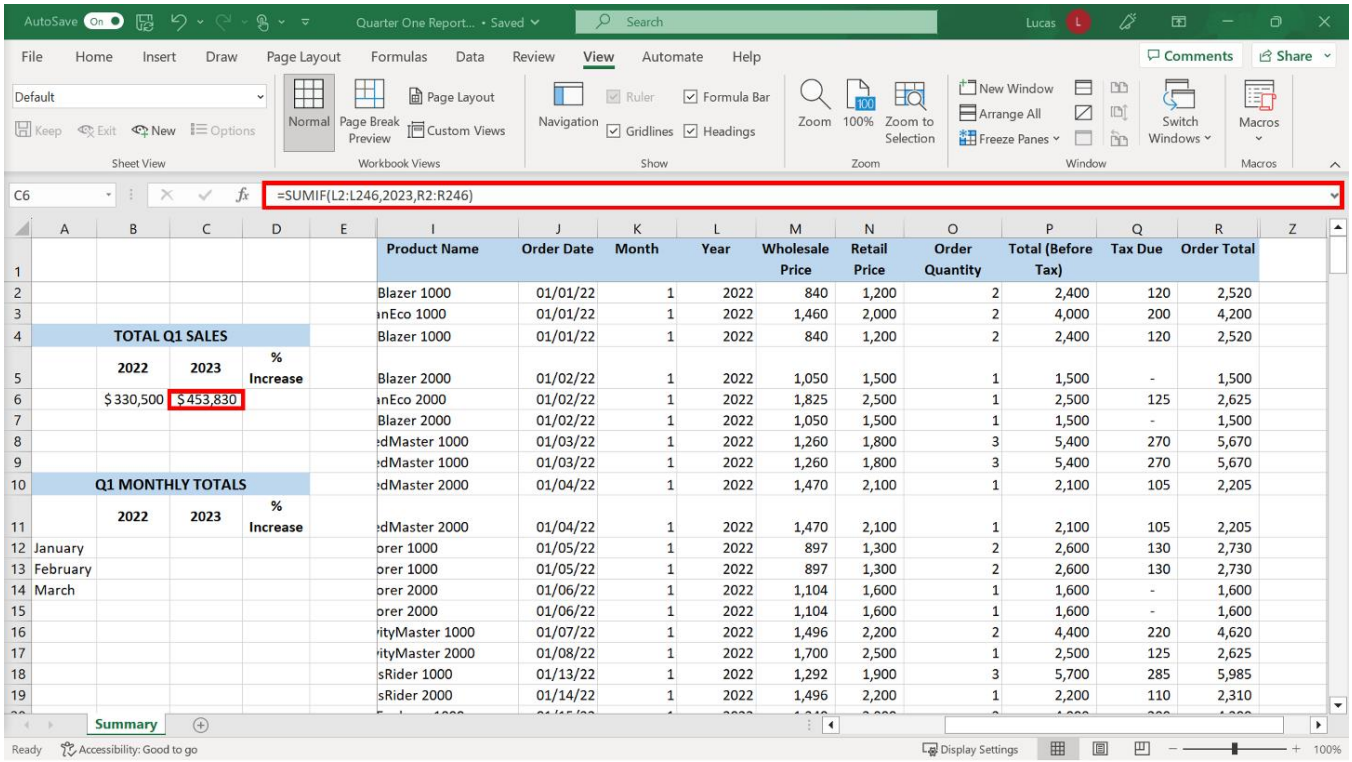
1. In cell **B6**, you created a **SUMIF** formula to sum the sales values for 2022. The sales values were in the range **R2** to **R246**. The criteria range was the range **L2** to **L246**. You then created a similar formula in cell **C6** with the same cell ranges but changed the criteria to 2023. The formula in **B6** should read: `=SUMIF(L2:L246,2022,R2:R246)` The result in **B6** should be $330,500.



The formula in **C6** should read:

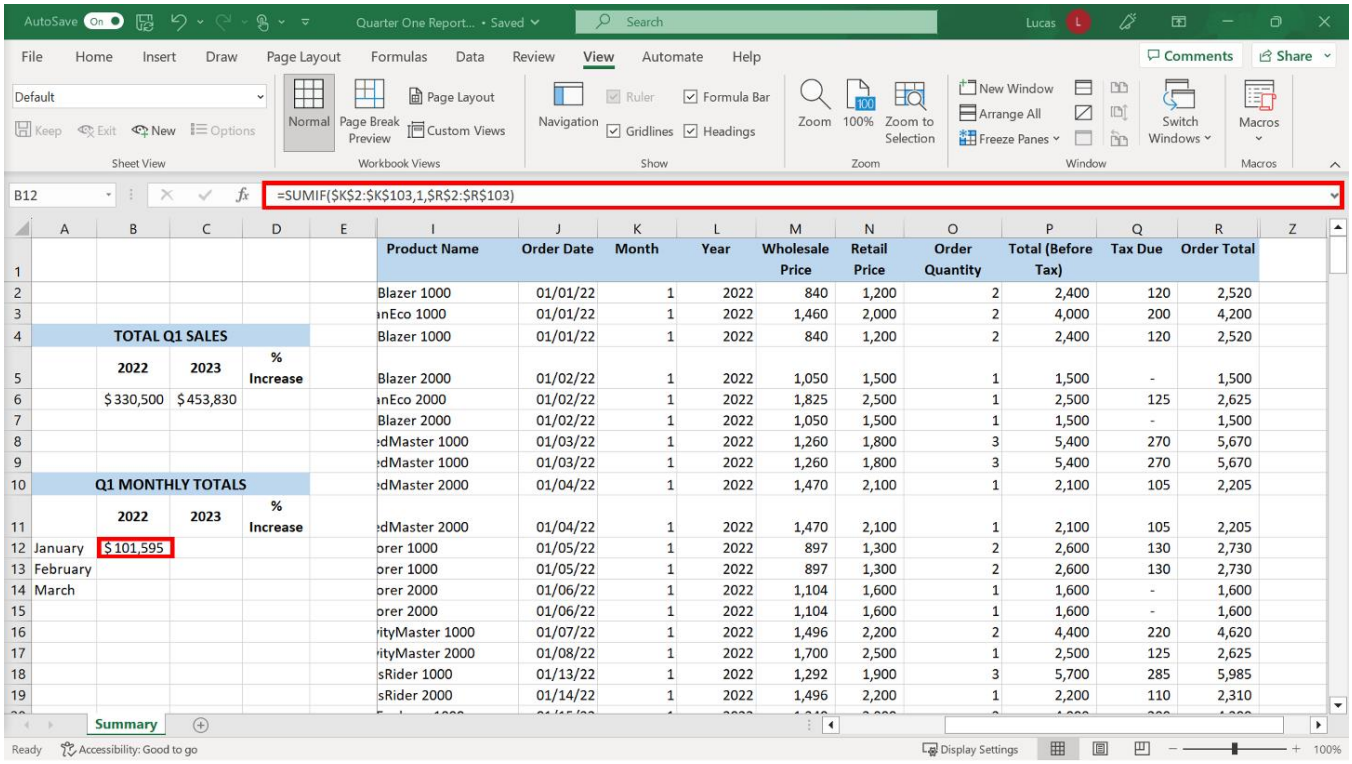
```
=SUMIF(L2:L246,2023,R2:R246)
```

The result should be $453,830.

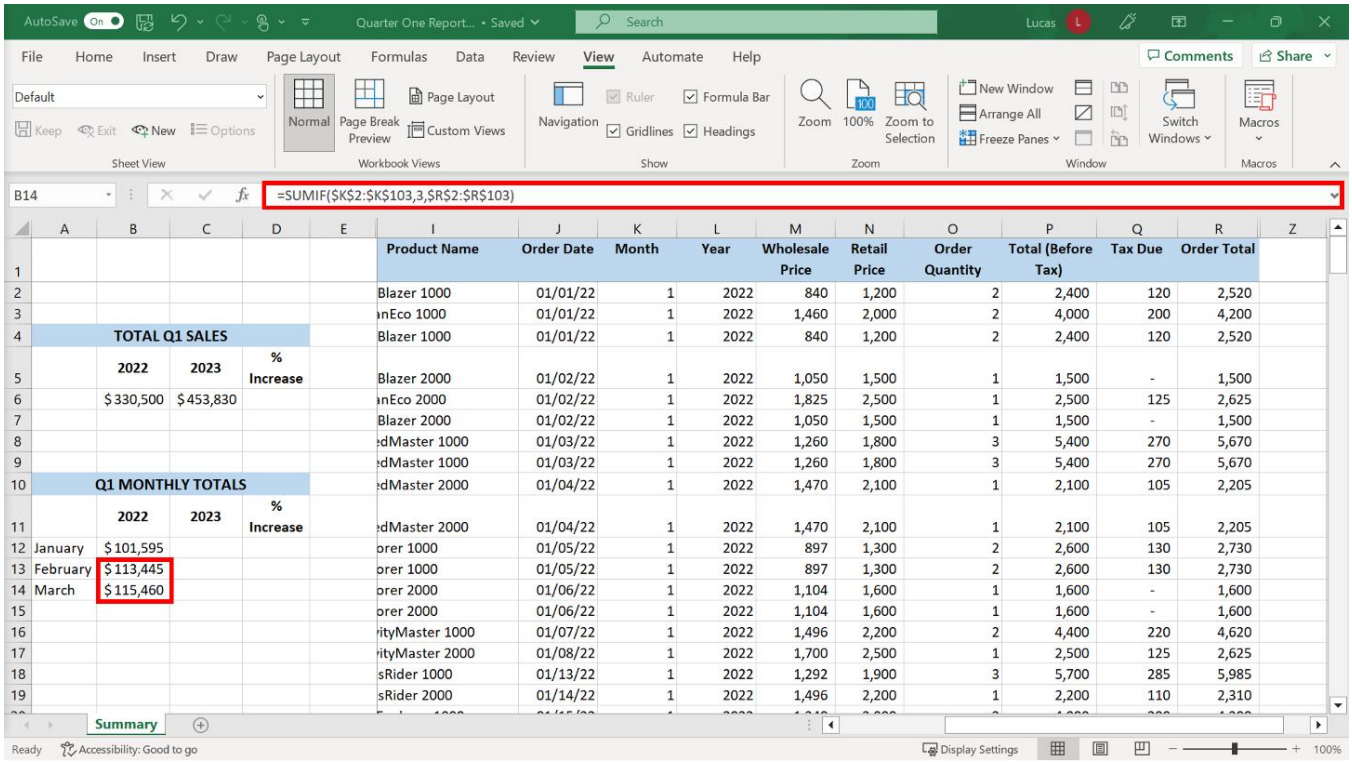


1. In cell **B12** you created a **SUMIF** to sum the range **R2** to **R103** if there was the number **1** in the criteria range **K2** to **K103**. You also added dollar signs to the **R** and

K cell references so that the formula could be copied down. Rows 2 to 103 contained the entries for 2022 because the data had already been sorted in date order. To obtain a total for only the January 2022 entries, the **SUMIF** formula used a criteria range of **K2** to **K103**, and a sum range of **R2** to **R103**. You had already created the entries in column **K** using the **MONTH** function to extract the month number. Asking Excel to match criteria 1 meant that it only included entries for January in the total. (The dollar signs added to the criteria range and sum range cell references were preparation for the next task which was to copy the formula.) The formula in **B12** should read: `=SUMIF($K$2:$K$103,1,$R$2:$R$103)` The result is $101,595.

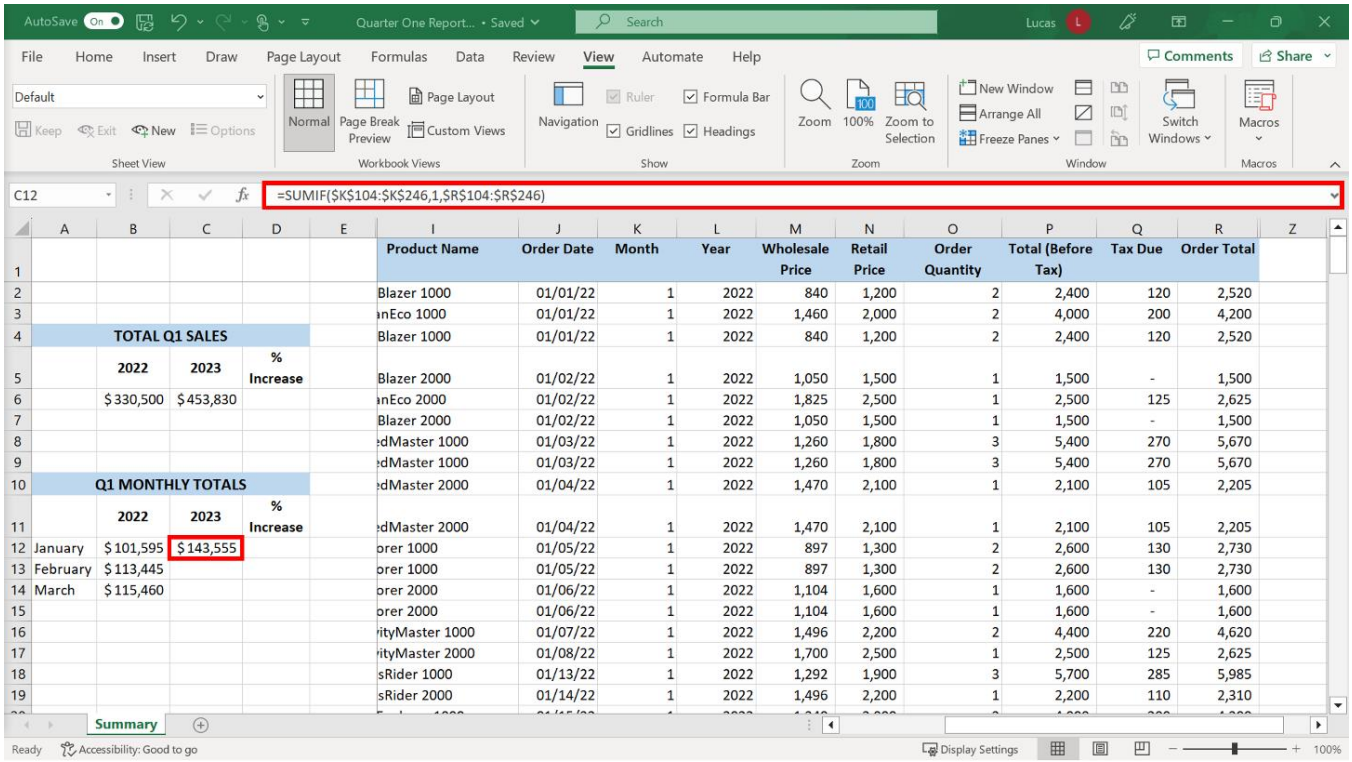


1. You copied the formulas from cell **B12** into cells **B13** and **B14**. In the **B13** copy you changed the criteria to **2** and in the **B14** copy changed the criteria to **3.** The formula in **B13** should read: `=SUMIF($K$2:$K$103,2,$R$2:$R$103)` The result should read $113,445. The formula in **B14** should read: `=SUMIF($K$2:$K$103,3,$R$2:$R$103)` The result should be $115,460.

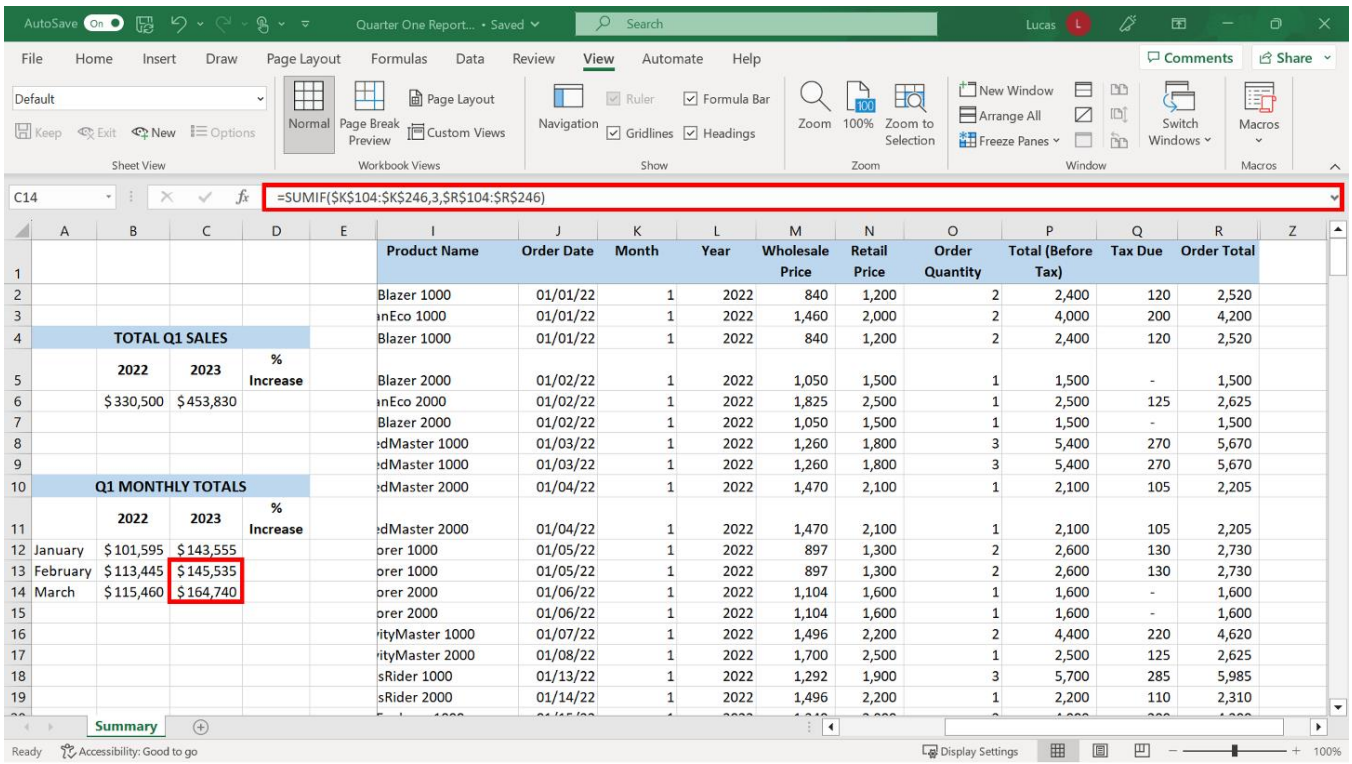


	A	B	C	D	E	I	J	K	L	M	N	O	P	Q	R	Z
1						Product Name	Order Date	Month	Year	Wholesale Price	Retail Price	Order Quantity	Total (Before Tax)	Tax Due	Order Total	
2						Blazer 1000	01/01/22	1	2022	840	1,200	2	2,400	120	2,520	
3						nEco 1000	01/01/22	1	2022	1,460	2,000	2	4,000	200	4,200	
4		TOTAL Q1 SALES				Blazer 1000	01/01/22	1	2022	840	1,200	2	2,400	120	2,520	
5		2022	2023	% Increase		Blazer 2000	01/02/22	1	2022	1,050	1,500	1	1,500	-	1,500	
6		$330,500	$453,830			nEco 2000	01/02/22	1	2022	1,825	2,500	1	2,500	125	2,625	
7						Blazer 2000	01/02/22	1	2022	1,050	1,500	1	1,500	-	1,500	
8						dMaster 1000	01/03/22	1	2022	1,260	1,800	3	5,400	270	5,670	
9						dMaster 1000	01/03/22	1	2022	1,260	1,800	3	5,400	270	5,670	
10		Q1 MONTHLY TOTALS				dMaster 2000	01/04/22	1	2022	1,470	2,100	1	2,100	105	2,205	
11		2022	2023	% Increase		dMaster 2000	01/04/22	1	2022	1,470	2,100	1	2,100	105	2,205	
12	January	$101,595				orer 1000	01/05/22	1	2022	897	1,300	2	2,600	130	2,730	
13	February	$113,445				orer 1000	01/05/22	1	2022	897	1,300	2	2,600	130	2,730	
14	March	$115,460				orer 2000	01/06/22	1	2022	1,104	1,600	1	1,600	-	1,600	
15						orer 2000	01/06/22	1	2022	1,104	1,600	1	1,600	-	1,600	
16						ityMaster 1000	01/07/22	1	2022	1,496	2,200	2	4,400	220	4,620	
17						ityMaster 2000	01/08/22	1	2022	1,700	2,500	1	2,500	125	2,625	
18						sRider 1000	01/13/22	1	2022	1,292	1,900	3	5,700	285	5,985	
19						sRider 2000	01/14/22	1	2022	1,496	2,200	1	2,200	110	2,310	

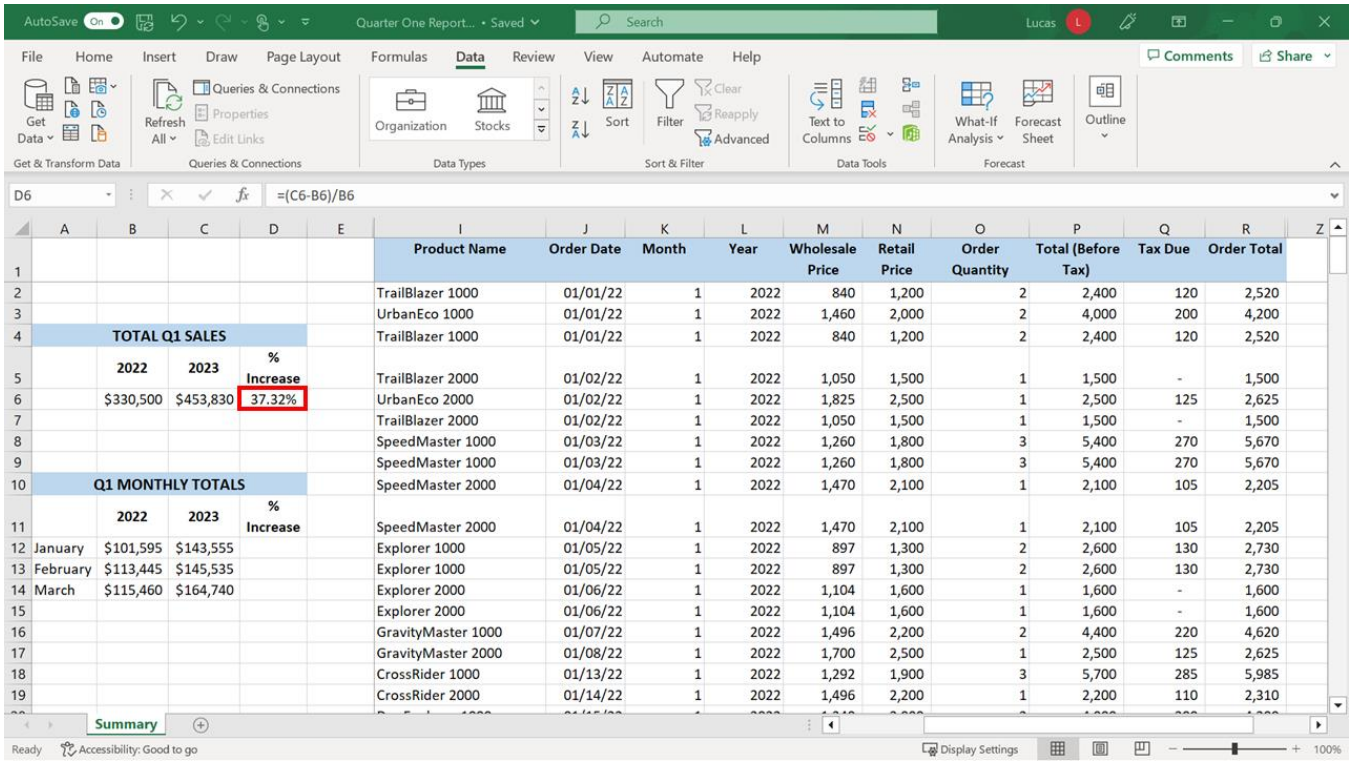
1. In cell **C12** you created a formula using **SUMIF**. This formula summed the range **R104** to **R246** if it said **1** in the range **K104** to **K246**. You added dollar signs to the **R** and **K** cell references. Rows 104 to 246 contained the entries for 2023 because the data had been sorted in date order. To obtain a total for the January 2023 entries, the **SUMIF** formula used a criteria range of **K104** to **K246**, the cells holding the month numbers, and a sum range of **R104** to **R246**. Matching criteria 1 meant that Excel would only include entries for January in the total. The dollar signs added to the criteria range and sum range cell references allowed for the formula to be copied down. The formula in **C12** should read:
`=SUMIF($K$104:$K$246,1,$R$104:$R$246)` The result should be $143,555.



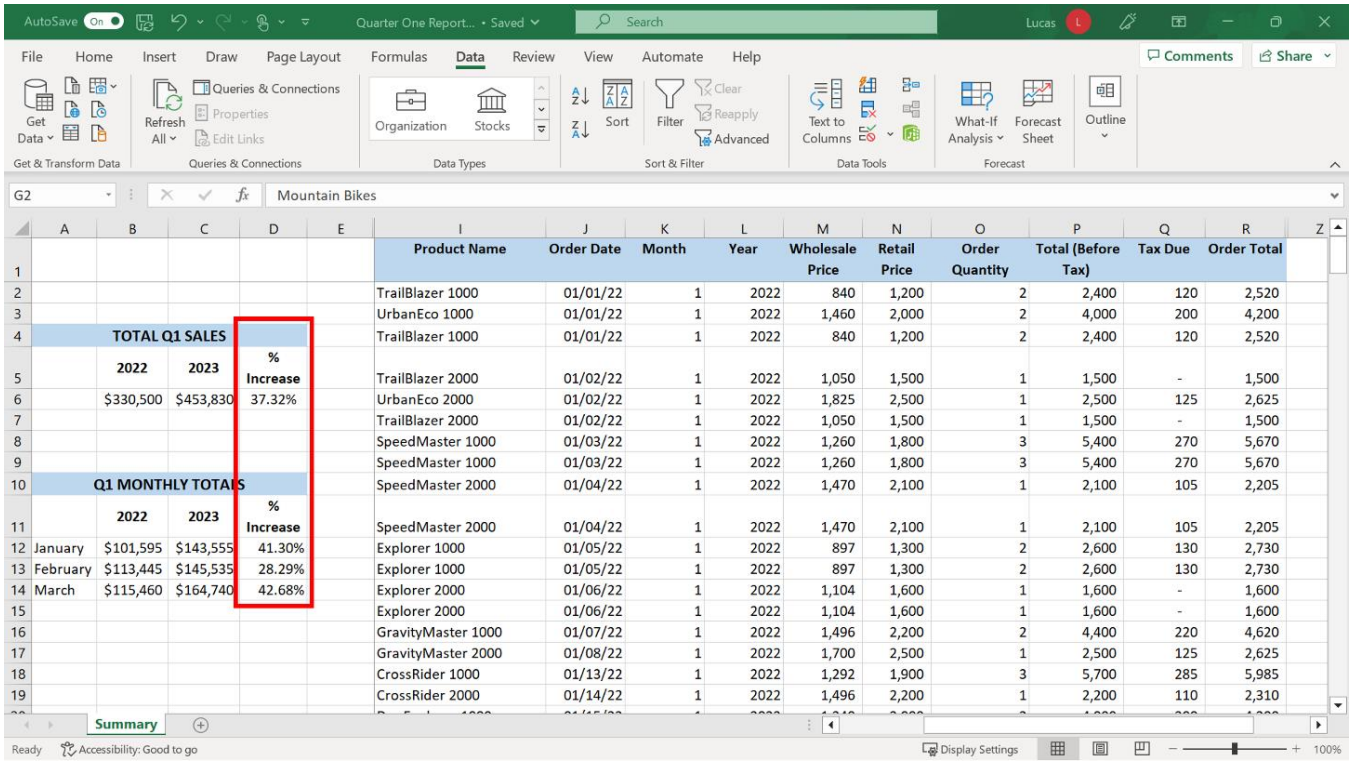
1. You then copied the formula to **C13** and **C14**. In the **C13** copy, you changed the criteria to **2**, and in the **C14** copy, you changed the criteria to **3**. The formula in **C13** should read: `=SUMIF($K$104:$K$246,2,$R$104:$R$246)` The result should be $145,535. The formula in **C14** should read: `=SUMIF($K$104:$K$246,3,$R$104:$R$246)` The result should be $164,740.



1. You created a **Percentage difference** formula in **D6** which showed the percentage by which sales increased in 2023. To determine the percentage difference between the results for 2022 and 2023, the total for 2022 first had to be subtracted from the 2023 total. The result had then to be divided by the result for 2022. This formula needed parentheses since the subtraction had to be done first. The cell was already formatted as a percentage, so the result displayed correctly. The formula in **D6** should read: `=(C6-B6)/B6` The result is 37.32%.



1. You created a similar formula in **D12** and copied the calculation in **D12** down to **D14**. The formula in **D12** should read: `=(C12-B12)/B12` The result should be 41.30%. The formula in **D13** should read: `=(C13-B13)/B13` The result should be 28.29%. The formula in **D14** should read: `=(C14-B14)/B14` The result should be 42.68%.



	A	B	C	D	E	I	J	K	L	M	N	O	P	Q	R
1						Product Name	Order Date	Month	Year	Wholesale Price	Retail Price	Order Quantity	Total (Before Tax)	Tax Due	Order Total
2						TrailBlazer 1000	01/01/22	1	2022	840	1,200	2	2,400	120	2,520
3						UrbanEco 1000	01/01/22	1	2022	1,460	2,000	2	4,000	200	4,200
4		TOTAL Q1 SALES				TrailBlazer 1000	01/01/22	1	2022	840	1,200	2	2,400	120	2,520
5		2022	2023	% Increase		TrailBlazer 2000	01/02/22	1	2022	1,050	1,500	1	1,500	-	1,500
6		$330,500	$453,830	37.32%		UrbanEco 2000	01/02/22	1	2022	1,825	2,500	1	2,500	125	2,625
7						TrailBlazer 2000	01/02/22	1	2022	1,050	1,500	1	1,500	-	1,500
8						SpeedMaster 1000	01/03/22	1	2022	1,260	1,800	3	5,400	270	5,670
9						SpeedMaster 1000	01/03/22	1	2022	1,260	1,800	3	5,400	270	5,670
10		Q1 MONTHLY TOTALS				SpeedMaster 2000	01/04/22	1	2022	1,470	2,100	1	2,100	105	2,205
11		2022	2023	% Increase		SpeedMaster 2000	01/04/22	1	2022	1,470	2,100	1	2,100	105	2,205
12	January	$101,595	$143,555	41.30%		Explorer 1000	01/05/22	1	2022	897	1,300	2	2,600	130	2,730
13	February	$113,445	$145,535	28.29%		Explorer 1000	01/05/22	1	2022	897	1,300	2	2,600	130	2,730
14	March	$115,460	$164,740	42.68%		Explorer 2000	01/06/22	1	2022	1,104	1,600	1	1,600	-	1,600
15						Explorer 2000	01/06/22	1	2022	1,104	1,600	1	1,600	-	1,600
16						GravityMaster 1000	01/07/22	1	2022	1,496	2,200	2	4,400	220	4,620
17						GravityMaster 2000	01/08/22	1	2022	1,700	2,500	1	2,500	125	2,625
18						CrossRider 1000	01/13/22	1	2022	1,292	1,900	3	5,700	285	5,985
19						CrossRider 2000	01/14/22	1	2022	1,496	2,200	1	2,200	110	2,310

Conclusion