

# Making Decisions

We can instruct a spreadsheet to make decisions on entered labels and values. This is achieved by using the IF function, which takes the form:

IF (something is true, do this, otherwise, do something else)

The IF function uses mathematical symbols (operators) to make comparisons:

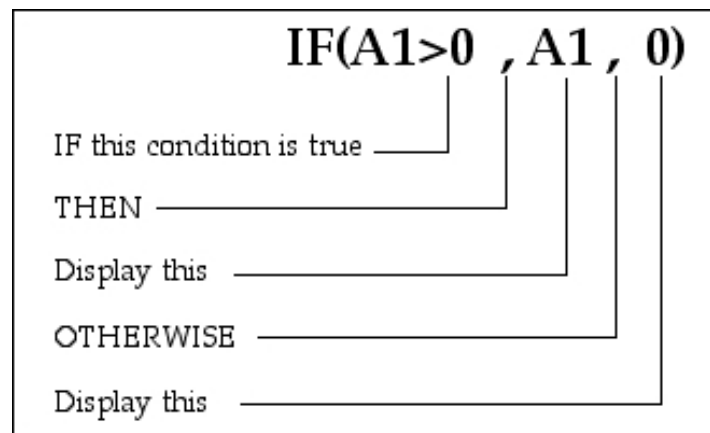
Operator	Meaning
<	less than
>	greater than
<=	less than or equal to
>=	greater than or equal to
=	equal to
<>	is not equal to

For example, look at the following formula:

=IF(A1>0,A1,0)

This formula reads: If the contents of cell A1 is greater than zero then display the contents of A1, otherwise display zero. The sections of an IF statement must be separated by commas. The first comma stands for 'then' and the second comma stands for 'otherwise'.

The following diagram shows the sections of the formula:



## The IF Command

A spreadsheet for a company that gives discounts on items priced over \$100 will be used.

- 1 If you are starting a new session, load Google Sheets.
- 2 Display the FILE menu and select OPEN.
- 3 Click on UPLOAD followed by SELECT A FILE FROM YOUR COMPUTER.
- 4 Access the SHEETS SUPPORT FILES, open the CHAPTER 10 folder and load the file:

### Chapter 10

The screenshot shows a Google Sheet titled 'Chapter 10'. The formula bar contains the formula `=IF(B4>100, "Yes", "No")`. The spreadsheet has the following data:

	A	B	C	D	E	F
1	DISCOUNT CITY					
2						
3	ITEM	PRICE	DISCOUNT			
4	Radio	\$53.00	No			
5	TV	\$525.00				
6	Toaster	\$81.50				
7	Heater	\$137.50				
8						

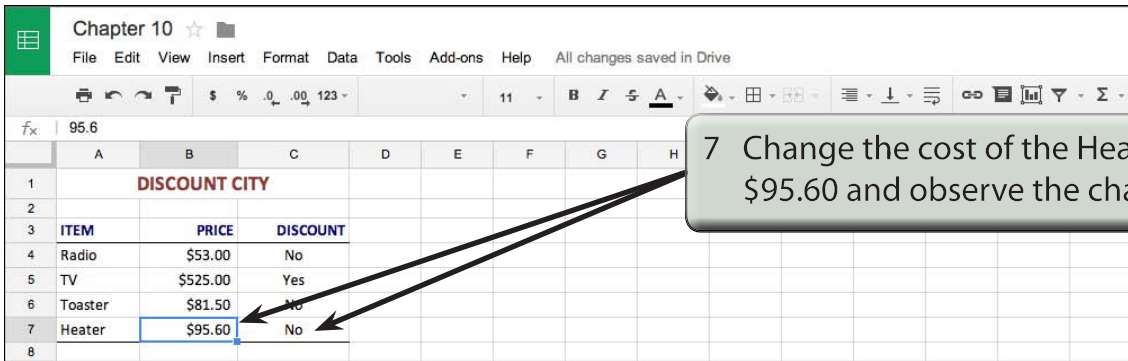
5 In cell C4 enter the formula:  
`= IF(B4>100,"Yes", "No")`

**NOTE:** The spreadsheet is being told that if the contents of the cell B4 is greater than 100, then display YES, otherwise display NO. Quotation marks are used around YES and NO because they are LABELS.

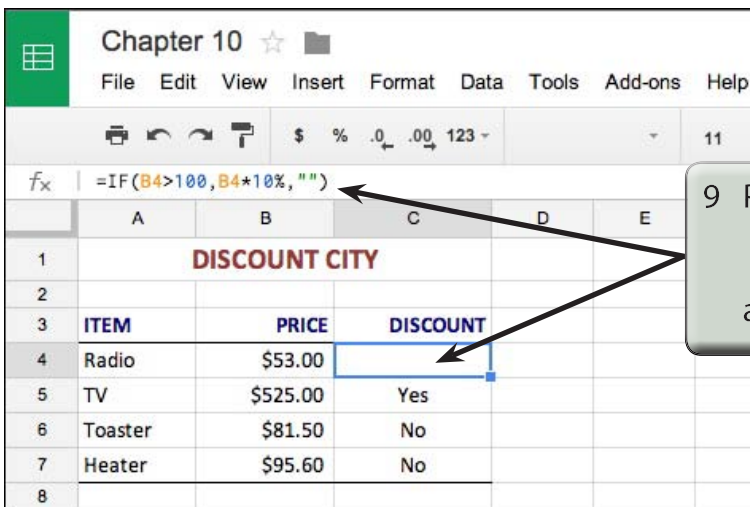
The screenshot shows the same Google Sheet as before, but now the formula has been autofilled down to row 7. The spreadsheet data is:

	A	B	C	D	E	F	G	H	I	J	L	M
1	DISCOUNT CITY											
2												
3	ITEM	PRICE	DISCOUNT									
4	Radio	\$53.00	No									
5	TV	\$525.00	Yes									
6	Toaster	\$81.50	No									
7	Heater	\$137.50	Yes									
8												

6 Autofill the formula down 3 cells and format the 4 labels to be CENTRED. You should have a YES displayed next to prices over \$100.



8 Mathematical calculations can also be done within IF functions.

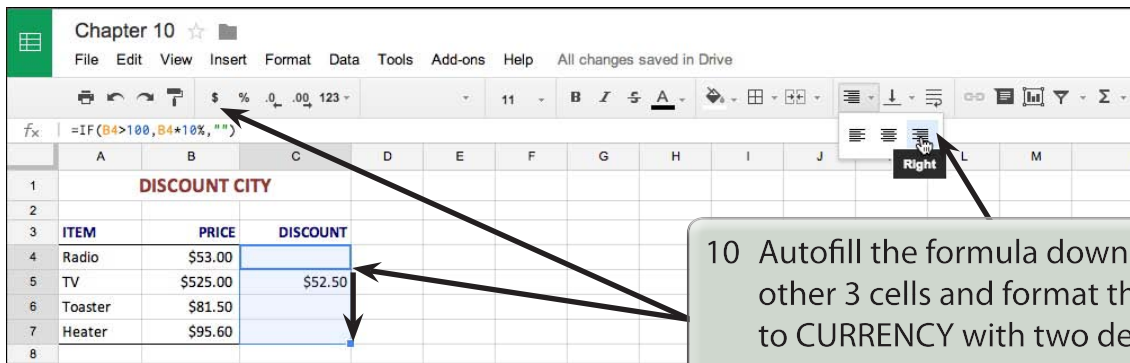


9 Position the cursor at cell C4, enter:  
 = IF(B4>100,B4\*10%,\"')  
 and press <enter> or <return>.

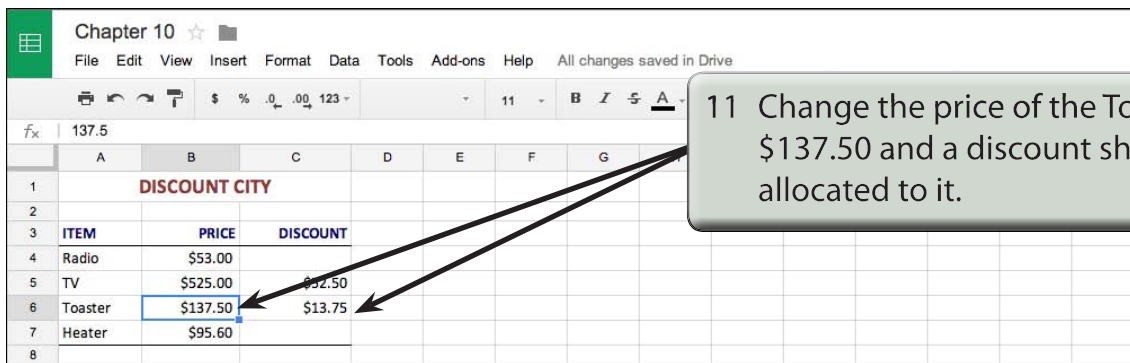
**NOTE:**

- i For the “'”, press the double quotation key twice.
- ii The formula reads: If the value in cell B4 is greater than 100, then work out and display B4 times 10%, otherwise display a blank space (two quotes entered next to one another).
- iii You should receive a blank space in cell C4 as the Radio costs less than \$100.

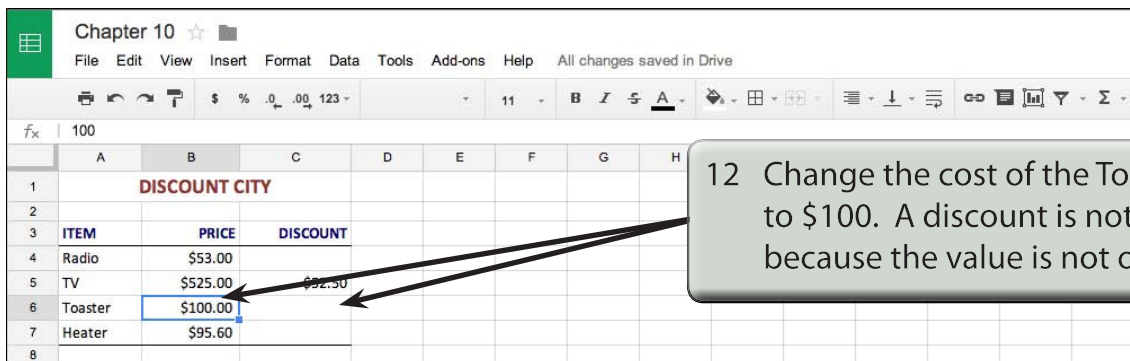
# Learning Google Sheets



10 Autofill the formula down for the other 3 cells and format the 4 cells to CURRENCY with two decimal places and RIGHT ALIGNED.



11 Change the price of the Toaster to \$137.50 and a discount should be allocated to it.



12 Change the cost of the Toaster to \$100. A discount is not given because the value is not over \$100.

## Greater Than or Equal To

Sometimes we need a condition to include a number as well as all greater or smaller numbers. The  $\geq$  and  $\leq$  symbols can be used for this purpose.

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fx =IF(B4>=100,B4\*10%,"")

	A	B	C	D	E
1	<b>DISCOUNT CITY</b>				
2					
3	<b>ITEM</b>	<b>PRICE</b>	<b>DISCOUNT</b>		
4	Radio	\$53.00			
5	TV	\$525.00	\$52.50		
6	Toaster	\$100.00			
7	Heater	\$95.60			
8					

1 Move the cursor to cell C4 and edit the formula to add an = sign straight after the > sign. Your formula should now be:  
= IF(B4>=100,B4\*10%,"")

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File Edit View Insert Format Data Tools Add-ons Help

fx =IF(B4>=100,B4\*10%,"")

	A	B	C	D	E
1	<b>DISCOUNT CITY</b>				
2					
3	<b>ITEM</b>	<b>PRICE</b>	<b>DISCOUNT</b>		
4	Radio	\$53.00			
5	TV	\$525.00	\$52.50		
6	Toaster	\$100.00	\$10.00		
7	Heater	\$95.60			
8					

2 Autofill this formula down to the other 3 cells and you should now have a discount for the Toaster.

**NOTE:** The Toaster receives a discount because a discount is now payable on items of \$100 or more.