This exercise is designed to familiarize you with how to create functions and formulas and the difference between them.

So what is the difference between a function and a formula?

Formulas

Well, a formula is a simple calculation that involves either *, /, +, -, or (). **Of course your formula will ALWAYS start with an = sign**. Here are some examples of a few formulas:

- =(5+6)*9
- =(b1+b2)-b12
- =9+10+b6
- =((b10)*10)/(b2+4)

You'll see that beside the mathematical signs, you may have brackets, numbers, or cell addresses.

Functions

A function on the other hand contains "functionality" in that there are parts of the "function" that are programmed into it. For example, let's take the average function. Say we want to take the average of cells B1 to B5.

We could make a formula that looks like one of these examples:

 =(B1+B2+B3+B4+B5)/5   =SUM(B1:B5)/5

Both of these formulas do the same thing. They both add the cells b1 to b5 and then divide the result by 5.

What if you wanted to take the average of 25 cells, 50 cells, 5000 cells. I don't know about you, but I would definitely be a little frustrated. No need to worry though, because the MS Works Spreadsheet program has a function that can solve your problems! Let's say we want to take the average of the cells b1 to b1000. We could enter:

 =SUM(B1:B1000)/1000   Or: =SUM(B1+B2+B3+B4+B5+B6+B7....)/1000

Or, we could use the average function and enter:

 =AVERAGE(B1:B1000)

By using this function, MS Excel will generate the average for you. You don't even have to count up how many cells you have.

This format can be used for a series of cells. You list the first cell, a colon, then the last cell, and the function will take the average of those cells and all the cells in between them.

You may also use another format if you just want to take the average of 2 cells:
This format will take the average of 2 cells.

Notice that if you just want to take the average of 2 cells, you use a , to separate the 2 cells addresses.

To see a list of all the functions available in MS Excel, go under the Formulas tab and select Insert Function. This will open a new window displaying all available functions.
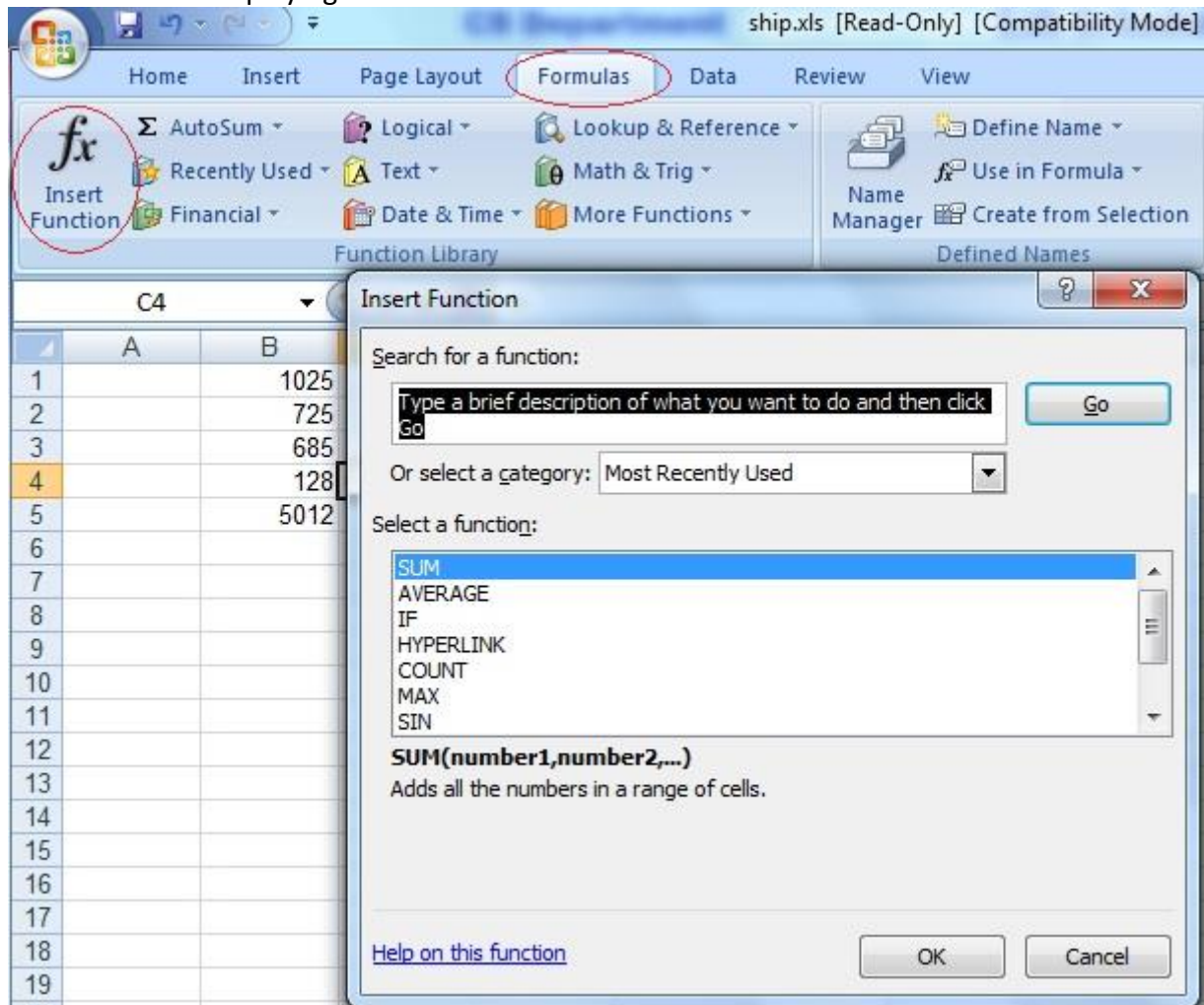
Let's say that you were using the SUM function. The SUM function can add 2 values and up. Be careful and read the questions carefully!! If the question asks you to add A3 to A6 you would type:
=SUM(A3:A6)

If the question asked you to add A3 and A6, you have 2 options. You could type:

=SUM(A3,A6)   or more simply   =A3+A6

They both will result in the same answer.

Be careful!

=SUM(A3:A6)   and   =SUM(A3,A6)

Exercise:

Now, if you have not already done so, prepare a worksheet as per following data sheet.

1. Ok, fill in the formulas to add up the expenses for each month (**dark blue** area). Fill in the sum for each expense as well (**yellow** area). You are free to use either formulas or functions to create these totals. (Hint: If you are going to use a function, your best choice here would be the SUM function.)
2. Now, fill (right/down) the formulas to add up the income for each month as well as the total from each income source (**green** and **light blue** areas). If you used a straight formula for the last step, try using a function this time. And, if you used a function last time, then try using a straight formula this time.

3. Now finish off the calculations and subtract the expenses from the income for each month, that is, the **purple** cell minus the **red** cell. This calculation should be located in cell B26 (**grey cell**).

As you can see, there is often more one way to achieve a desired result. This is a computer class - the one great thing about computers is that you can do things more than once. Use this to your benefit. If you are in the middle of the spreadsheet test and don't get the right answer - don't assume the test is incorrect - try re-doing the question, maybe in a different way to get the right answer. Try and try again!