

ANSWERS CHAPTER 3

THINK IT OVER



think it over

TIO 3.1: This is the cell currently being used to enter formulae or data.

TIO 3.2: It is always a good idea to give variables meaningful names. Programs like SPSS also allow you to give descriptive labels to your variables to give a bit more detail about the variable.

TIO 3.3: The data entered could be a record of a response, an outcome from an experiment and so on. The numbers are used to represent these outcomes, so perhaps when keeping notes about the responses, it is a good idea to say what they actually are in response to.

TIO 3.4: The equals sign is used because we commonly associate it with a calculation. Formulae are used to calculate an answer from the independent variables, with the answer being the dependent variable.

TIO 3.5: Using brackets in formulae is a good idea since it enables the human reader to focus on the order of calculation. It is also a good way of 'grouping' together the elements of the formulae.

TIO 3.6: The order of variables is important, particularly with programs like Excel and SPSS. The order can affect the outcome, especially when we come to things like regression and ANOVA.

TIO 3.7: The border changes to a 'blinking dashed line'. Hitting the 'escape' key will cancel the selection.

TIO 3.8: No link to Aunty Elsie! Excel assumes that when you are working on a spreadsheet you will be working with cells that are related. For example, if you enter data into cells A2 and B2 and a formula into C2, and then copy the formula into the other cells below C2, Excel will assume you want to maintain the relationship defined by the first two cells. It will therefore use the data in cells A3 and B3 as independent and put the result in C3.

TIO 3.9: Absolute cell addressing is particularly useful when you need to use constants in your calculations. For example, you may have calculated the mean and need to use its value in different calculations. Rather than enter the value each time, you can refer to the cell containing the value of the mean. Excel uses \$ signs to indicate absolute cell addresses.

TIO 3.10: An instance is when you use SPSS with a particular problem. Each analysis requires its own instance. You can use multiple instances of SPSS but be careful, unless you have saved them, SPSS does not give them a name. It is easy to get mixed up between instances, particularly if they are all working on similar problems.

TIO 3.11: We need to tell SPSS about our variables. Remember it is just a computer program and is not intelligent like you! SPSS needs to know what type of variable (scale, ordinal or nominal) in order to know how to compute with them. It also needs to know if it is a number, a string, etc.; how much space to allocate in memory; how many decimal places you want; and so on.

TIO 3.12: SPSS can only work with numbers; it doesn't understand 'normal' language. Using numbers as 'symbols', e.g. '1' for male, enables SPSS to perform calculations. Using the symbol '1' to represent males means that SPSS has to be told, when the variables are defined, that it is not a number but a symbol. We do this by classifying it as nominal when defining the variables.

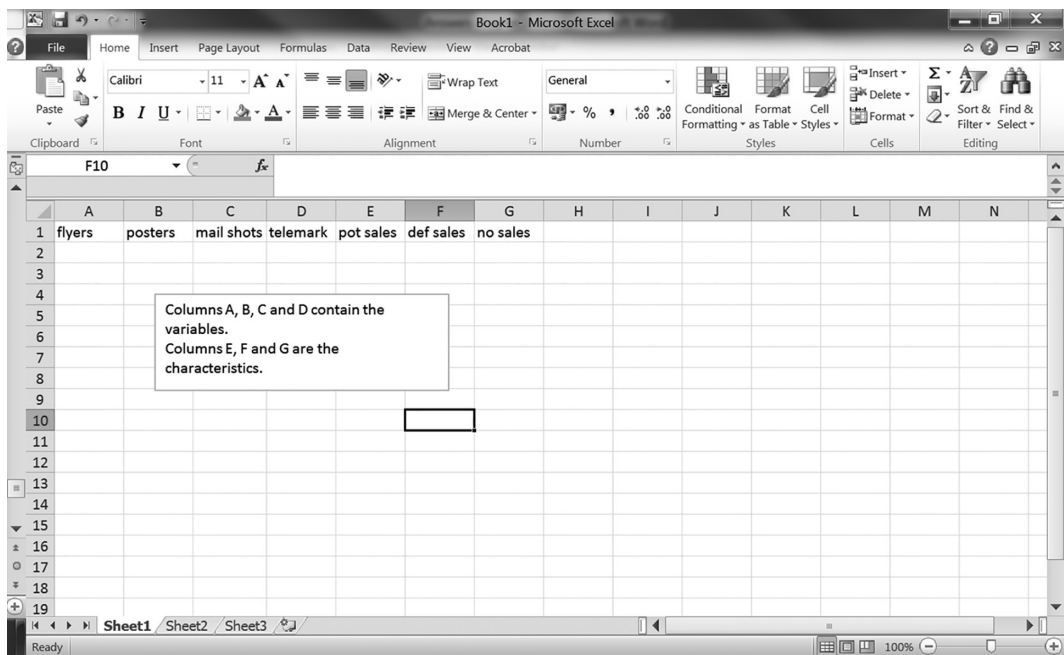
TIO 3.13: The words tend to be used interchangeably.

TIO 3.14: It would depend on the context. For example, if you were comparing teenagers and toddlers, you could use `tod_age` and `teen_age`.

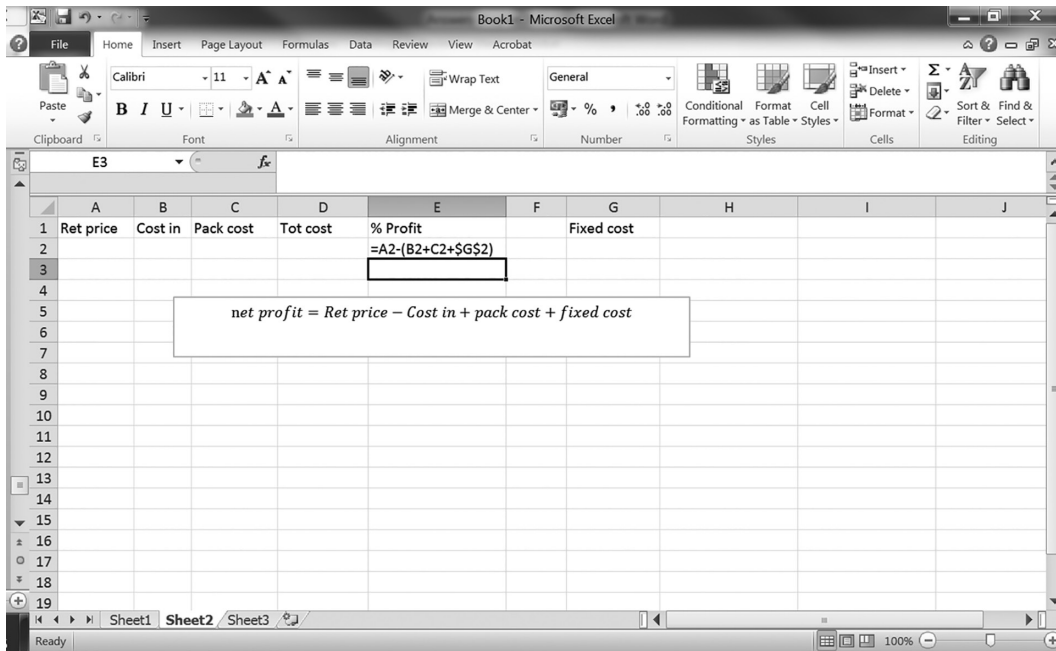
TIO 3.15: They are nominal since the numbers are used as symbols to represent a characteristic.

EXERCISES

1.

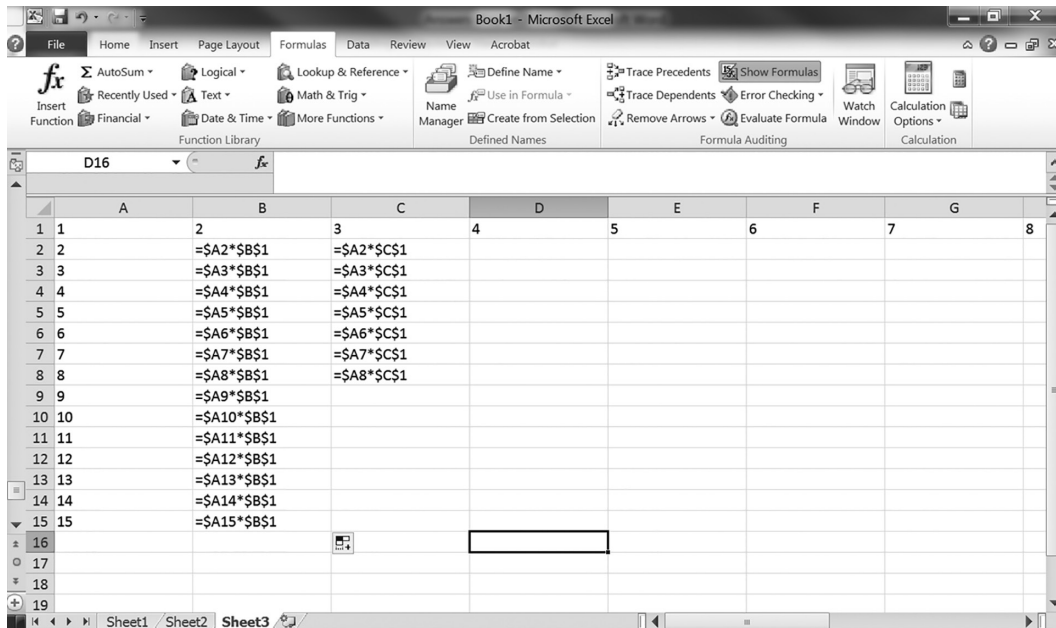


2.

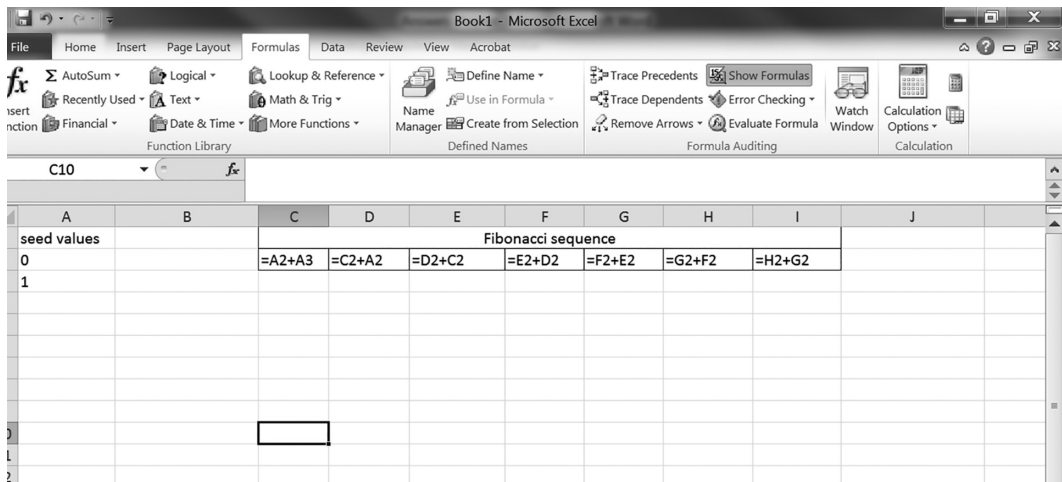


3.

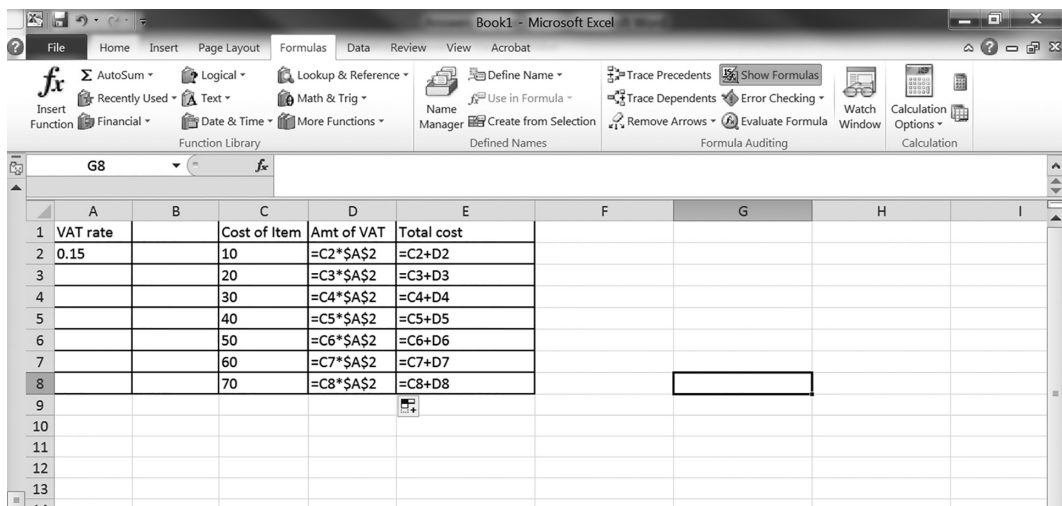
- (a) $y = x^2$
- (b)



(c)

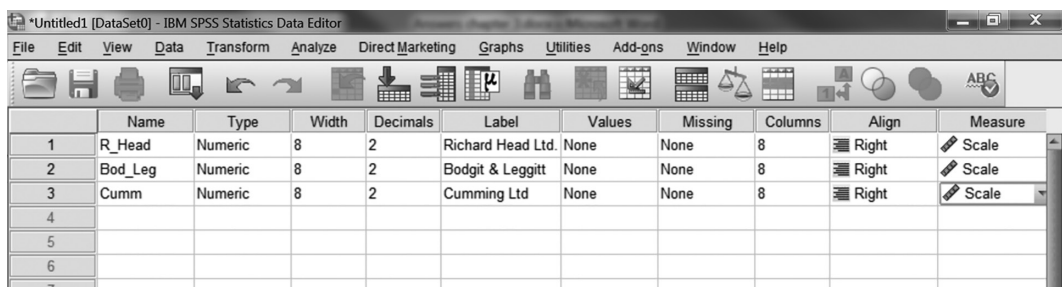


(d)



(e) It always pays to construct a simple model first to test your formulae. You should use known data to test and verify your model.

4.



5.

	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure
1	week	Numeric	8	0	week number	None	None	8	Right	Nominal
2	assignments	Numeric	8	2	UG assignment...	None	None	8	Right	Scale
3	sales	Numeric	8	2	weekly bar sales	None	None	8	Right	Scale
4										
5										
6										
7										
8										
9										
10										

6.

	Name	Type	Width	Decimals	Label	Values	Missing	Columns	Align	Measure
1	SP	Numeric	8	2	Salesperson	None	None	8	Right	Scale
2	DIST	Numeric	8	2	Weekly Mileage	None	None	8	Right	Scale
3	CITY	Numeric	8	2	Proportion of Ci...	None	None	8	Right	Scale
4	FUEL	Numeric	8	2	Weekly Fuel C...	None	None	8	Right	Scale
5										
6										
7										
8										
9										
10										
11										
12										