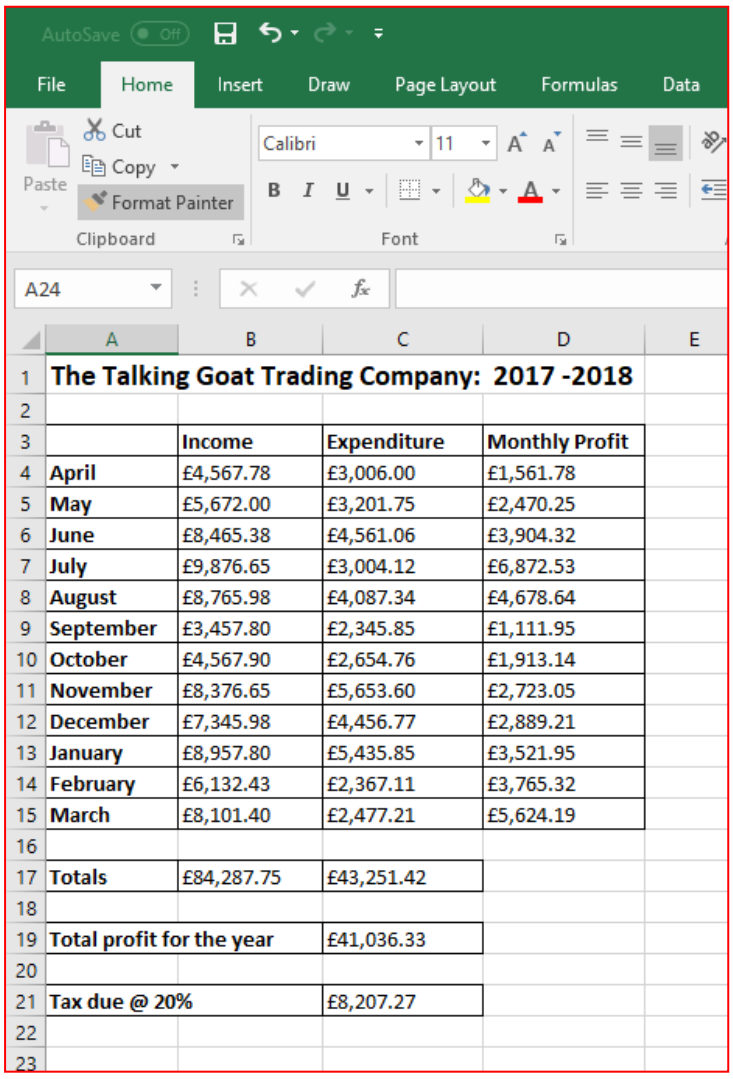
CN4004: Spreadsheet Task 1

Part 1
If you are already proficient in Excel or a similar spreadsheet you can skip this exercise and go straight to part 2.

In Figure 1 you can see a fragment of a spreadsheet which shows the income and expenditure of a small business over 12 months.



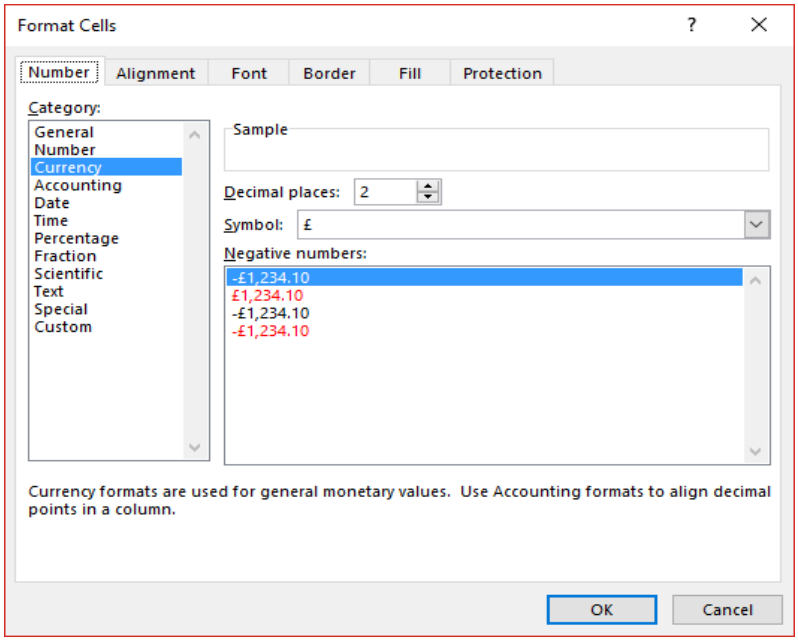
	A	B	C	D	E
1	**The Talking Goat Trading Company: 2017 -2018**				
2					
3		**Income**	**Expenditure**	**Monthly Profit**	
4	**April**	£4,567.78	£3,006.00	£1,561.78	
5	**May**	£5,672.00	£3,201.75	£2,470.25	
6	**June**	£8,465.38	£4,561.06	£3,904.32	
7	**July**	£9,876.65	£3,004.12	£6,872.53	
8	**August**	£8,765.98	£4,087.34	£4,678.64	
9	**September**	£3,457.80	£2,345.85	£1,111.95	
10	**October**	£4,567.90	£2,654.76	£1,913.14	
11	**November**	£8,376.65	£5,653.60	£2,723.05	
12	**December**	£7,345.98	£4,456.77	£2,889.21	
13	**January**	£8,957.80	£5,435.85	£3,521.95	
14	**February**	£6,132.43	£2,367.11	£3,765.32	
15	**March**	£8,101.40	£2,477.21	£5,624.19	
16					
17	**Totals**	£84,287.75	£43,251.42		
18					
19	**Total profit for the year**		£41,036.33		
20					
21	**Tax due @ 20%**		£8,207.27		
22					
23					

Fig. 1.

Follow the steps below to reproduce this spreadsheet.

1. Enter the headings and make them bold.

2. Format the cells so that numbers are shown as currency. To do this highlight the cells and right-click on them. You will see the dialogue shown in figure 2. Choose the currency option.



3. Place borders round the cells as shown in the diagram. To do this highlight the cells and right-click on them. Choose the Border tab (see figure 3). Experiment with this to produce the borders shown in figure 1.

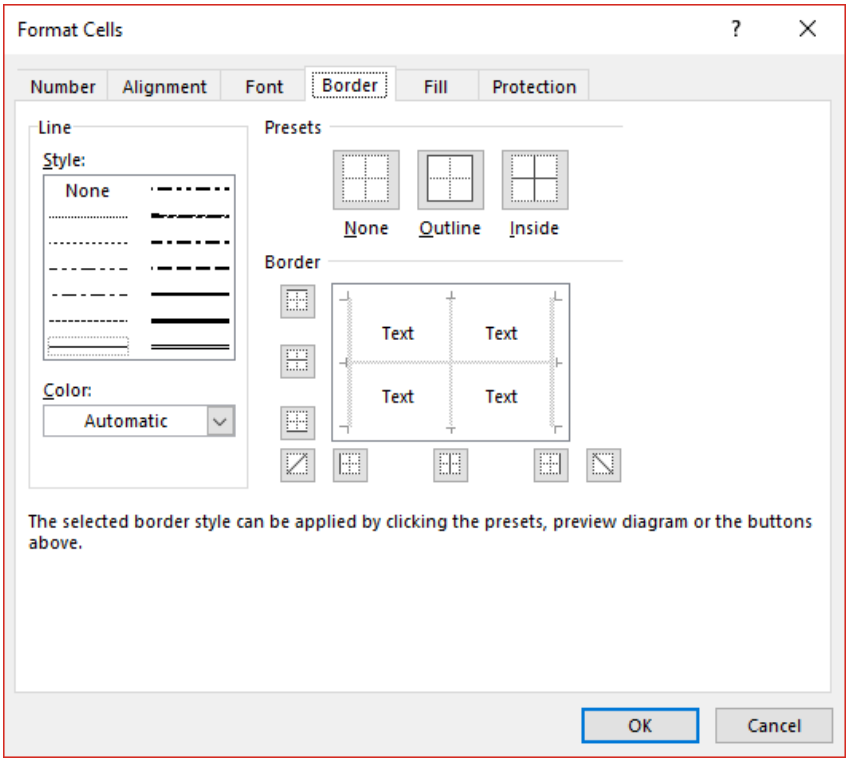


Fig. 3.

4. Manually enter the values for income and expenditure in the cell range B4:C15. **You can enter any figures you like – you do *not* have to copy the figures that have been entered here.**

5. Enter the following formula into cell D4 to calculate the income over expenditure for April. This formula is:

=B4-C4

6. Copy and paste this formula into cells D5:D15. You can copy and paste in the usual way – simply highlight the cell or cells you want to copy, press Ctrl+C (or right-click and choose *copy*), then highlight the cell or cells into which you want to paste the copy, and press Ctrl+V (or right-click and choose *paste*). However, to copy the formula fromone cell to the cells below, you can also use the quick method shown in figure 4. Highlight the cell you want to copy (D4 in this case), then place the cursor over the littlegreen square in the bottom right corner (figure 4a) and drag it to the cells where you want the copy (D5-D15 in this case). You will notice that this makes a relative copy, with each fromula relating to the cell to its left (see figure 4b)

	The Talking Goat Trading Company: 2017 -2018			
1				
2				
3		Income	Expenditure	Monthly Profit
4	April	£4,567.78	£3,006.00	£1,561.78
5	May	£5,672.00	£3,201.75	
6	June	£8,465.38	£4,561.06	
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8	August	£8,765.98	£4,087.34	
9	September	£3,457.80	£2,345.85	
10	October	£4,567.90	£2,654.76	
11	November	£8,376.65	£5,653.60	
12	December	£7,345.98	£4,456.77	
13	January	£8,957.80	£5,435.85	
14	February	£6,132.43	£2,367.11	
15	March	£8,101.40	£2,477.21	

Fig. 4a.

	The Talking Goat Trading Company: 2017 -2018			
1				
2				
3		Income	Expenditure	Monthly Profit
4	April	£4,567.78	£3,006.00	£1,561.78
5	May	£5,672.00	£3,201.75	£2,470.25
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14	February	£6,132.43	£2,367.11	£3,765.32
15	March	£8,101.40	£2,477.21	£5,624.19

Fig. 4b.

7. Enter the correct formula into B17 to calculate the total income for the year. This formula is:

=SUM(B4:B15)

You could also have used the Σ icon for this purpose instead of entering the formula manually.

8. Copy and paste this formula into C17 for the total annual expenditure.

9. In cell C19 enter the correct formula to calculate the profit for the year (this is the total income minus the total expenditure).

10. Work out the correct formula for calculating the tax due at 20% and enter this into C21.

Part 2

Exercise 1

In figure 5 you see how Excel can be used to draw a graph of an equation – in this case the equation $y = 3x + 1$.

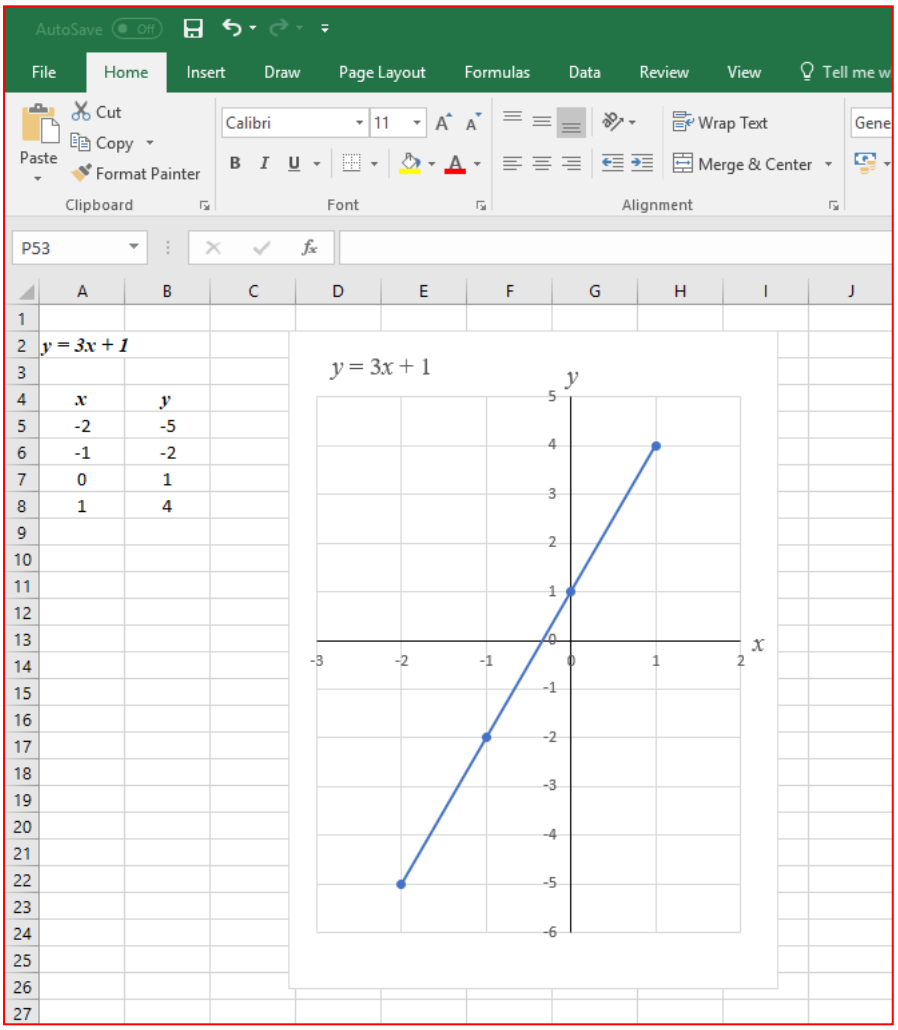


Fig. 5.

Use Excel to create this graph by following the steps below.

1. Type in the values of x (cells A5:A8).

2. In cell B5, enter the correct formula for calculating the value of y that corresponds to the value of x in cell A5.

   This is: =3*A5+1

3. Copy the above formula to cells B6:B8.

4. Highlight the cells A5:B8

5. Choose *Insert* from the ribbon, click on the scatter chart as shown in figure 6, then select the second chart.

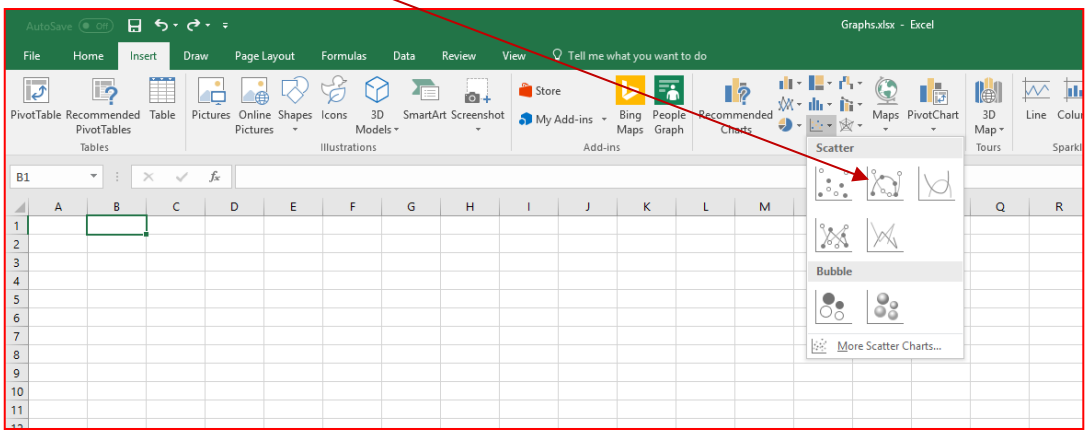


Fig. 6.

6. Your graph will now appear. You can edit it by double-clicking on any element of the graph. Explore these settings and make some changes. When the graph is highlighted you will see three icons appear on the top left of the graph as shown in figure 7.

Clicking on the green plus sign will open a menu that allows you to choose which elements are included on your graph

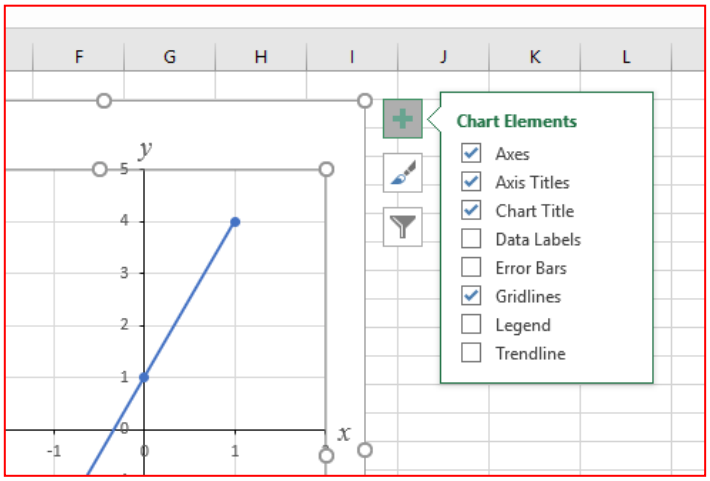


Fig. 7.

Exercise 2

Use Excel to produce the graph of the equation $y = x^2 + x - 1$.

A suggested range of values is shown in figure 8.

To insert a power into an Excel formula you use the ^ symbol.

For example to calculate the square of the value in cell A6 you would write:

=A6^2

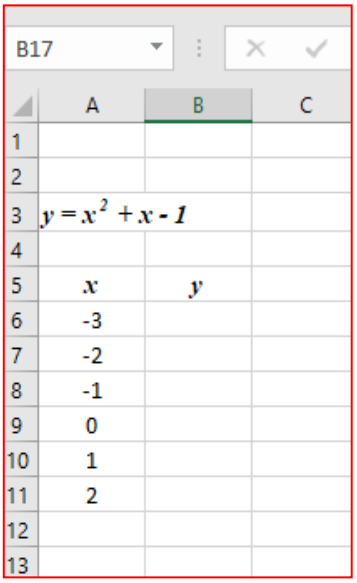
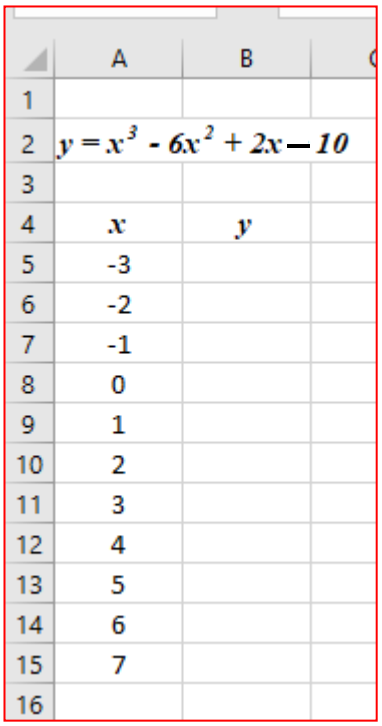


Fig. 8.

Exercise 3

Produce the graph of the equation $y = x^3 - 6x^2 + 2x - 10$ using the range of values shown in figure 9.



	A	B
1		
2	$y = x^3 - 6x^2 + 2x - 10$	
3		
4	x	y
5	-3	
6	-2	
7	-1	
8	0	
9	1	
10	2	
11	3	
12	4	
13	5	
14	6	
15	7	
16		

Fig. 9.

Don't forget to upload your work (5 marks)