Excel Exercises

Solve each task on a separate sheet in the same book. Do tasks 1-5 in one workbook, then hand it in. Then do tasks 6-10. Save it also on your own account on the hard disk.

Exercise1.

Sune wants to calculate how much petrol his car uses. He uses the following:

Number of km	25,00
Petrol consumption in litres/ 10 km	0,68
Petrol in litres	?

You can widen the cells by pulling in the line between the columns, or double click between the letters.

In the cell with the ?, insert a formula, eg =B1*B2. So if he drives

a) 550 km with a usage of 0,75 litres/10 km?
b) 550 km with a usage of 1,2 litres/10 km?

Find the amount of petrol used!

Exercise 2.

Petra instead wants to calculate the consumption in litres/10 km for her car. She wants to use the same excel sheet as Sune. Do the necessary changes to your table. What is her petrol consumption if she drives:

a) 1150 km on 135 litres?
b) 200 km on 18,6 litres?

(petrol consumption = *amount of petrol used/number of 10 km*)

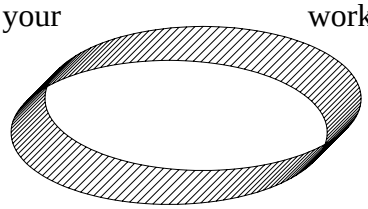
Exercise 3.

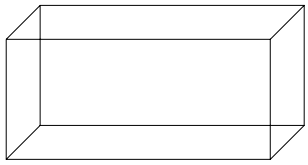
Make the following shopping list: Insert relevant formulae in the grey boxes!
Do not add the cells like this B1+B2, but use a function formulae, eg SUMMA(B2:B2)

Item	Number or kg	Price /item or kg	total
Milk	3	9,50	
Apple	4	14,90	
Something else			
		Summa:	

Exercise 4.

Make a calculation that finds the area and the volume of a block (that has different dimensions for the length, height, breadth) and a cylinder. You should be able to enter 3 different side lengths for the block and a radius and height for the cylinder, and get the area and volume for each piece using your calculation. You should be able to change any of the dimensions of your block or cylinder and a new area and volume will be calculated (i.e. use the cells in the formulas, Volume of block =B1*B2*B3). Finally, draw two figures using the draw tools of a block and a cylinder, and label them. Put them in your working area, underneath your tables.





Exercise 5.

Karin, being a teacher, wants to write down her students results in a table where the sum and average of the students tests are calculated. The calculation that solves the problem can look like this:

Student	Test 1	Test 2	Test 3	Test 4	Sum	Average
Andersson Pelle	**13**	**15**	**21**	**11**		
Karlsson Oskar	**14**	**17**	**16**	**15**		
Johansson Pia	**22**	**21**	**23**	**18**		
Bensen Emma	**8**	**4**	**7**	**11**		
Åström Fredrik	**10**	**9**	**13**	**15**		
Total on the test	**25**	**25**	**25**	**25**		
average						

a) Copy the table with all the test results.
b) The teacher lost the student Erik Ögrn. Add him to the list. His results were 22, 23, 20, 10 marks. Do this by **right click on the number of the row** where you want you insert the student. Then choose insert.
c) Arrange the names (including their results!) in alphabetic order on surnames. Do this by marking the column with names, choose **data, sortera…** In the dialog box for the first column, choose if you want to sort from ‘a to ö’, or vice versa.
d) Calculate each student´s sum and average using the **mathematical functions of excel.** Use $\mathbf{f_x}$, for functions Average = medelvärde, sum=summa
e) Also find each students average.

Draw a graph

f) Draw a histogram, i.e.a block diagram (column/stapel according to excel) on test 1. Do this by marking the names and their results on test 1, and then choose infoga, diagram…(insert, chart..)

If you want to change something in a chart, just right click on the detail you want to change, i.e. chart type, line colour, scale of axis etc.

g) Now try to change your chart to a linje diagram (line chart). Do that under diagramtyp (chart type) which you can reach by right clicking on the surface outside the chart. Write the titles of the axes and a chart title. That can be done under alternativ (right click on the surface outside the chart.) Change the colour of the line, thickness etc in your chart.

h) Then make a graph of test 1 and test 4 on the same graph. Do it this way: Mark the names and their results in test 1, then choose infoga, diagram… Then mark the results of test 4 on the working sheet, copy it, and go to the chart and right click, choose klistra in (paste). Write titles of the chart and the axes. Name it Results of Test 1 and 4!

Exercise 6.

The distribution of the students studying at High schools (gymnasieskolor) in Lund are shown in the following table.

	84/85	**85/86**	**86/87**	**87/88**	**88/89**	**89/90**	**90/91**
Katedralskolan	**1531**	**1531**	**1640**	**1624**	**1700**	**1543**	**1507**
Polhemskolan	**1774**	**1774**	**1661**	**1615**	**1648**	**1421**	**1426**
Spyken	**842**	**807**	**766**	**853**	**875**	**885**	**819**
Vipan						**449**	**753**

a) Write all this data on a new excel sheet.
b) Make a histogram of the two last years. Write titles of the chart and the axes. Try to figure out what the different sorts of block diagrams can be useful for.
c) Now try the cirkeldiagram (pie chart). Mark one of the column, insert chart, choose one of the pies (cirkeldiagram). If your labels are wrong (1,2,3 instead of katedralskolan, polhemskolan etc) they can be changed if you right click on the surface outside the chart and then choose källdata (source data) and serie. The cells containing the schools´ names are inserted in the box for kategorietiketter (category labels). Try to make the sector of Katedralskolan stick out a little. Mark the relevant sector and pull it out.
d) If you would like to follow the development over a longer time period, a line chart might be more suitable. Draw a line chart using all the data in the table, choose the years as x axis.

Exercise 7.

A toy car drives in a school corridor. Students with stop watches are placed each 5th metre and measures the time it takes for the car to pass their 'spot'. The results are as follows:

Distance (m)	**Time (s)**
0	0
5	2,2
10	4,3
15	6,5
20	8,7

a) Copy the table and make a data point diagram (XY scatter) punktdiagram. This type of chart is the one normally used in science. Make a distance/time-graph.
b) Insert a trendline and its equation. Right click on one of the data points. What can you find out from the graph?

Exercise 8.

The breaking distance of a car on a dry road can be calculated using the following formula $b = 0{,}2v + 0{,}01v^2$, where b is the breaking distance in metres and v is the velocity in km/h. Make an XY scatter chart with a line for the breaking distance for different velocities. At which velocity is the breaking distance 100 m?
Suggestion:

Velocity of car	Breaking distance
10	=0,2*the cell next to this+0,01*the cell next to this*the cell next to this
= the cell above+10	Copy the formula downward
Copy the formula downward	

Exercise 9.

In the table below is a recipe of cookies, where you can change the number of cookies you want to bake. You should be able to change the twelve in 48 cookies to any number of cookies, and the amount of flour or sugar shall automatically be changed. This is done by writing a formula in the cell below the twelve. This formula is only written once, and is then copied downwards to all the cells below.
Please note that you need to use an absolute reference for the number of cookies, i.e. 48 and 12 (e.g. A4- the dollar signs show the cell is locked), i.e. you must lock the cell for the number of cookies by clicking on that cell in your formula cell and pressing function F4 on that cell. This locks that cell so that excel doesn't paste downwards with the contents of that cell- because you want those two to be the same)!

	12	cookie	48	Cookies
Butter	50	gram	?	gram
Egg	2	egg	?	egg
Sugar	2	dl	?	dl
Flour	3	dl	?	dl
Baking powder	2	Teaspoon	?	Teaspoon
Vanilla sugar	2	Teaspoon	?	Teaspoon
milk	1	dl	?	dl

a) Determine how much baking powder that is needed to bake 20 cookies, and how much flour to bake 75 cookies.
b) Determine how many cookies that can be done with 60 l flour.

Exercise 10.

This calculation deals with calculating the interest on capital with a certain interest rate. You are to find out how the money grows during 20 years. **Please note that you should use absolute reference!** Change the interest rate to see how the final total you get changes

Interest: 3.00%

capital: 1,000.00 Kr

Growth

year 1	1030.00 Kr
year 2	1060.90 Kr
year 3	1092.73 Kr
year 4	1125.51 Kr
year 5	1159.27 Kr
year 6	1194.05 Kr
year 7	1229.87 Kr
year 8	1266.77 Kr
year 9	1304.77 kr
year 10	1343.92 kr
year 11	1384.23 kr
year 12	1425.76 kr
year 13	1468.53 kr
year 14	1512.59 kr
year 15	1557.97 kr
year 16	1604.71 kr
year 17	1652.85 kr
year 18	1702.43 kr
year 19	1753.51 kr
year 20	1806.11 kr