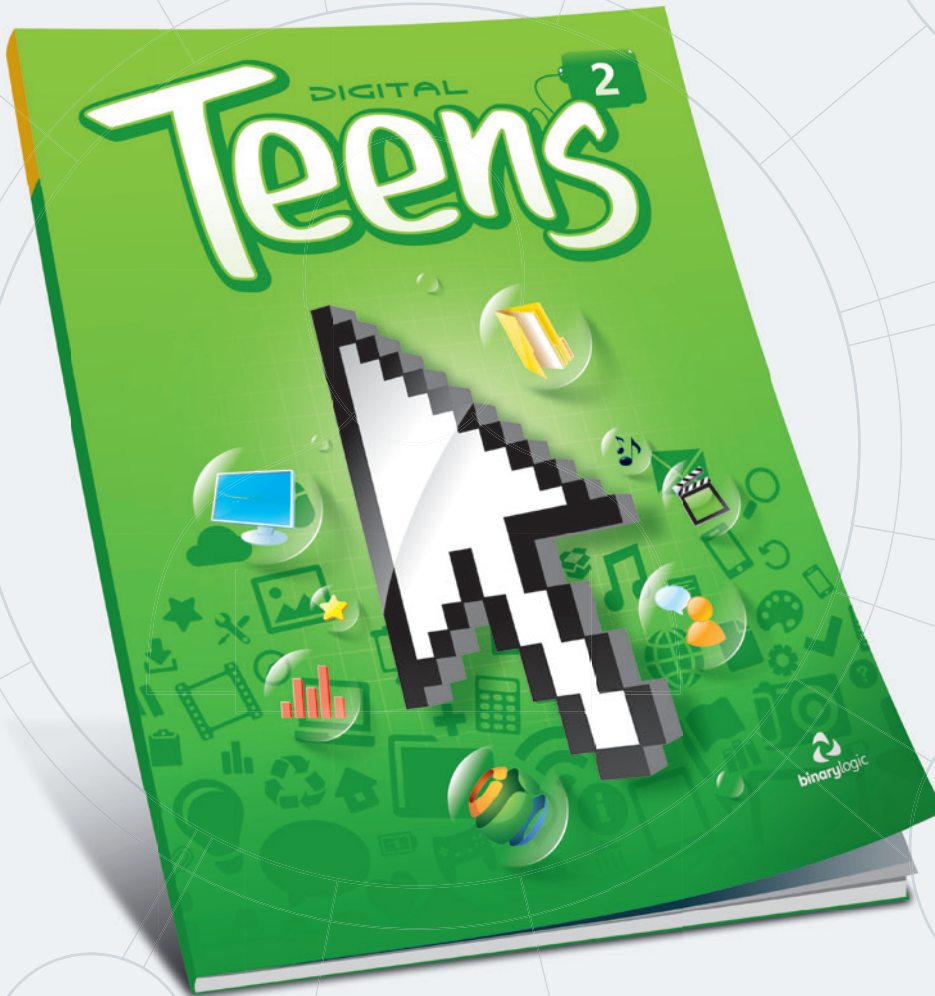


## Online Teaching Resources

# Digital Teens 2



### Samples of

- > Lesson Plans
- > Activity Worksheets
- > Self-Evaluation Sheets

## Syllabus

### Collecting information

1. Introduction to databases
2. Filter and sort
3. Keys and relationships
4. Contact management
5. Lab data collection
6. Project

### Designing a document

1. Tabs and columns
2. Headers and footers
3. HTML and PDF
4. Mail merge
5. Advanced topics
6. Project

### Multimedia presentations

1. Storyboarding
2. Capture and edit multimedia
3. Record your voice
4. Fix photos and add effects
5. Create an animated story
6. Project

### Communicating online

1. Networking basics
2. What is a blog?
3. Social Media
4. Communications tools
5. Digital citizenship
6. Project

### Analyzing data

1. Complex calculations
2. Functions
3. References
4. Advanced charts
5. Import and export data
6. Project

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12

## TASK 1

# Complex calculations

You know how to make simple calculations using **Microsoft Excel**. What about a complex algebraic expression? Well, it's time to make difficult things much easier and faster.

## Calculation rules

When you do complex calculations and there is more than one part to the formula, the order of the calculations is from left to right, but any part of the formula in parentheses will be calculated first.

### The calculation order:

- 1 Firstly, do the operations in parentheses.
- 2 Secondly, do the calculations with exponents.
- 3 Then, do the multiplications and divisions.
- 4 And in the end, do the additions and subtractions.

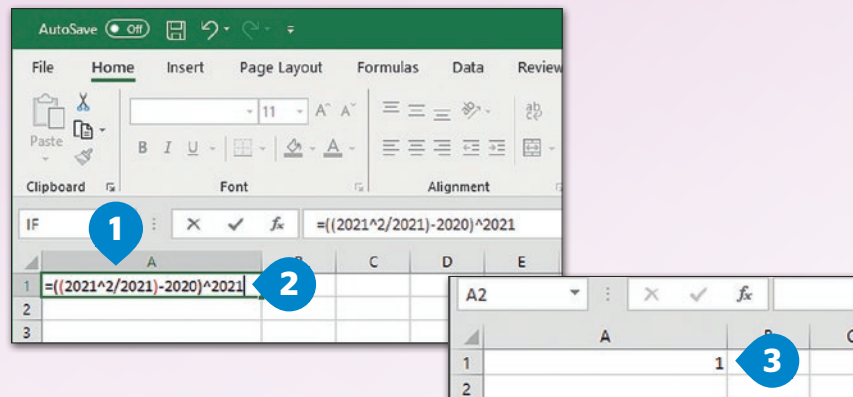
### The basic calculations and their symbols in Microsoft Excel are:

*	multiplication
^	exponent
/	division
+	addition
-	subtraction
%	percentage

Let's find the result of  $((2021^2/2021)-2020)^{2021}$

### To calculate the formula:

- > On a worksheet, click cell **A1**. **1**
- > Type =, to start the formula.
- > Type the mathematical formula  $((2021^2/2021)-2020)^{2021}$ . **2**
- > Press **Enter ↵**. **3**



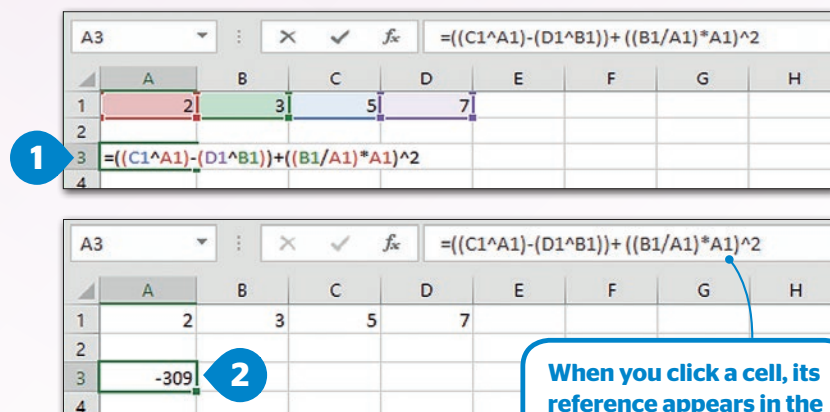
Let's try another one! This time, you are going to write a formula which will contain a cell reference. In this way, you will produce a result that will change if the data in the referenced cells also change.

Type the numbers below:

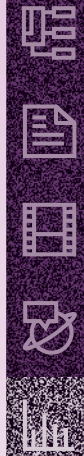
	A	B	C	D	E
1	2	3	5	7	

To calculate the expression  $((C1^A1)-(D1^B1))+((B1/A1)*A1)^2$ :

- > Click cell **A3** and type  $=((C1^A1)-(D1^B1))+((B1/A1)*A1)^2$ . **1**
- > Press **Enter ↵**. **2**



When you click a cell, its reference appears in the formula box.



## Work with percentages

Working with percentages is a little bit tricky, but pay attention and pretty soon, everything will be clear!

Type this table:

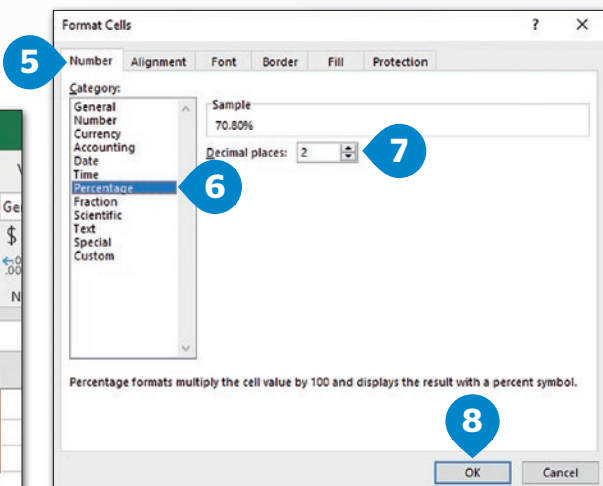
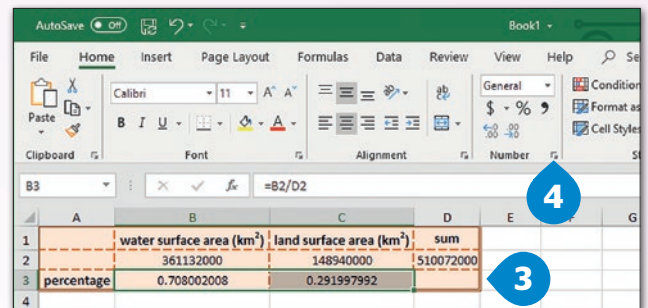
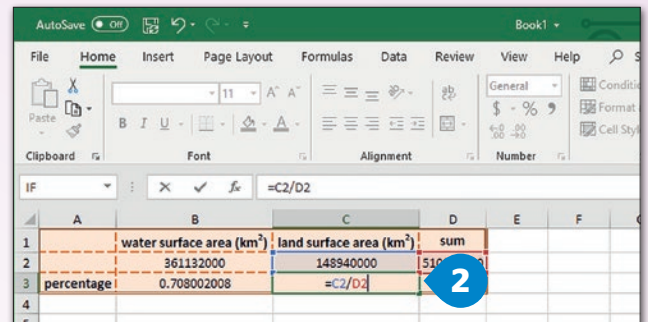
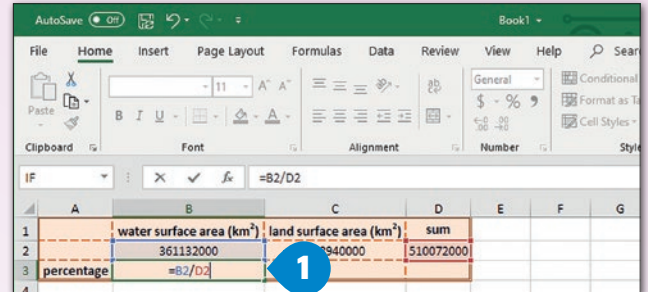
	A	B	C	D
1		water surface area (km <sup>2</sup> )	land surface area (km <sup>2</sup> )	sum
2		361132000	148940000	510072000
3	percentage			

You can change the value displayed from a decimal number to a percentage by applying the percentage format. Microsoft Excel multiplies the cell by 100 and displays the result with the percentage sign.

### To transform a number to a percentage:

- > Click cell **B3** and type **=B2/D2**. **1**
- > Click cell **C3** and type **=C2/D2**. **2**
- > Select the cells which contain the numbers you want to format, in this case **B3** and **C3**. **3**
- > On the **Home** tab, in the **Number** group, click the Expand button. **4**
- > In the **Format Cells** window, click the **Number** tab. **5**
- > In the **Category** list, click **Percentage**. **6**
- > Type a number in the **Decimal places** text box, e.g. 2. **7**
- > Click **OK**. **8**
- > The numbers now appear as percentages. **9**

*You can also apply the percentage format by clicking the Percent Style button in the Number group of the Home tab.*



	A	B	C	D
1		water surface area (km <sup>2</sup> )	land surface area (km <sup>2</sup> )	sum
2		361132000	148940000	510072000
3	percentage	70.80%	29.20%	

## Calculate powers

The **Power** function returns the result of a number raised to a given power.

Type the following table as it is below:

	A	B	C	D
1	base	power	result	
2	12	2		
3	3	5		
4	5	2		

You can use the function **POWER(x;y)** instead of using the **^** symbol.



### To calculate powers:

- > Click cell **C2**.
- > In the **Formula Bar**, type **=A2^B2**. **1**
- > Press **Enter ↵**. **2**
- > Repeat the steps for cells **C3** and **C4**. **3**

**1**

	A	B	C	D	E
1	base	power	result		
2	12	2	=A2^B2		
3	3	5			
4	5	2			

**2**

	A	B	C	D	E
1	base	power	result		
2	12	2	144		
3	3	5			
4	5	2			

**3**

	A	B	C	D	E
1	base	power	result		
2	12	2	144		
3	3	5	243		
4	5	2	25		

## hands on!

Your school did some research to find out which is the most interesting subject for students. In the questionnaire below you can see the votes for each subject. Now, using Microsoft Excel type the text and numbers as they are shown in the worksheet below. Calculate the total number of votes and the percentage of votes given to each subject. Fill the empty cells with the appropriate formulas and format the cells B4:F4 as percentages.

	A	B	C	D	E	F	G	H	I	
1	Questionnaire									
2	Lesson	Physics	Mathematics	English Literature	History	Chemistry		Sum		
3	Votes	192	100	178	52	100				
4	Percentage									
5										