

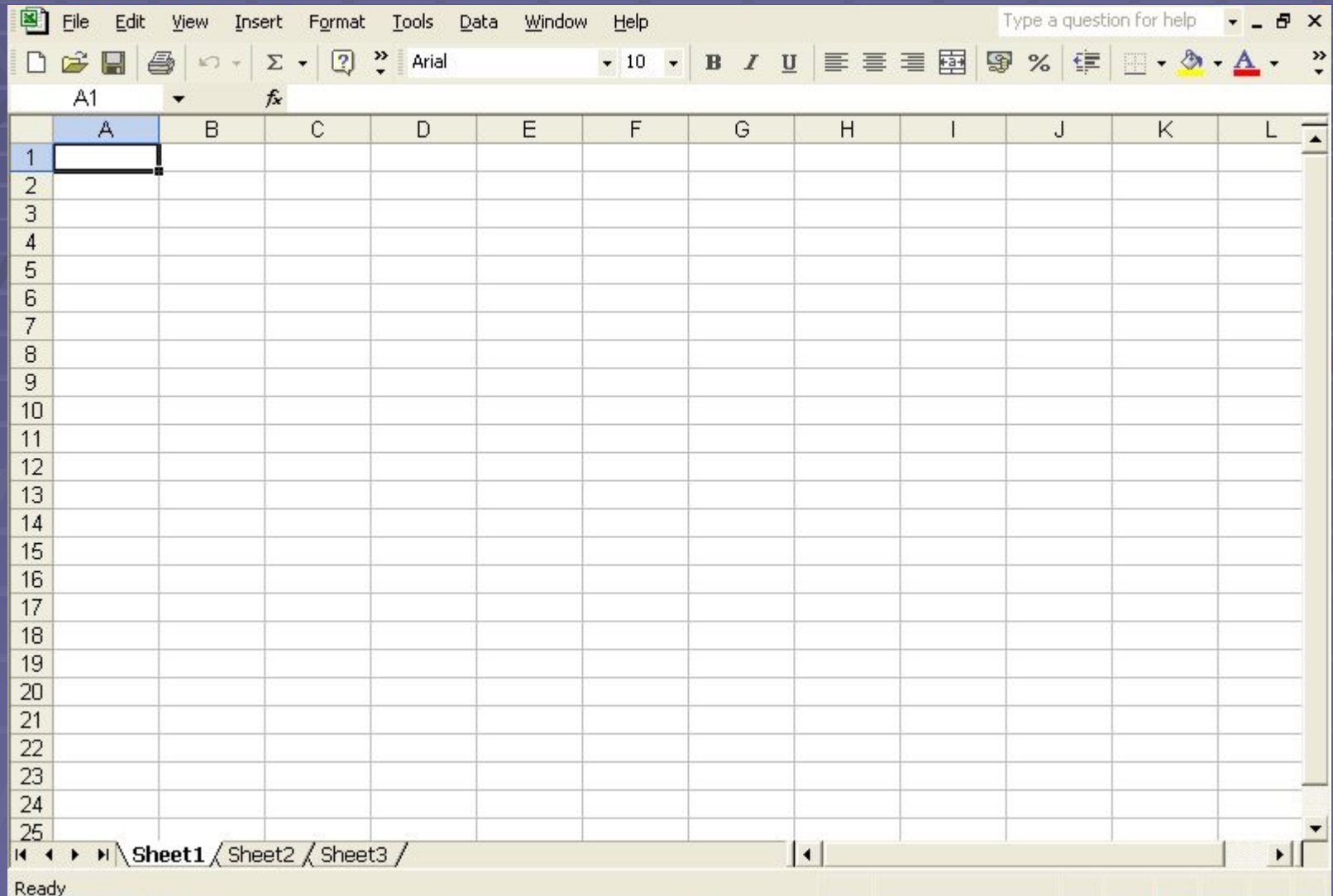
MS Excel

Это электронные таблицы

Назначение электронных таблиц:

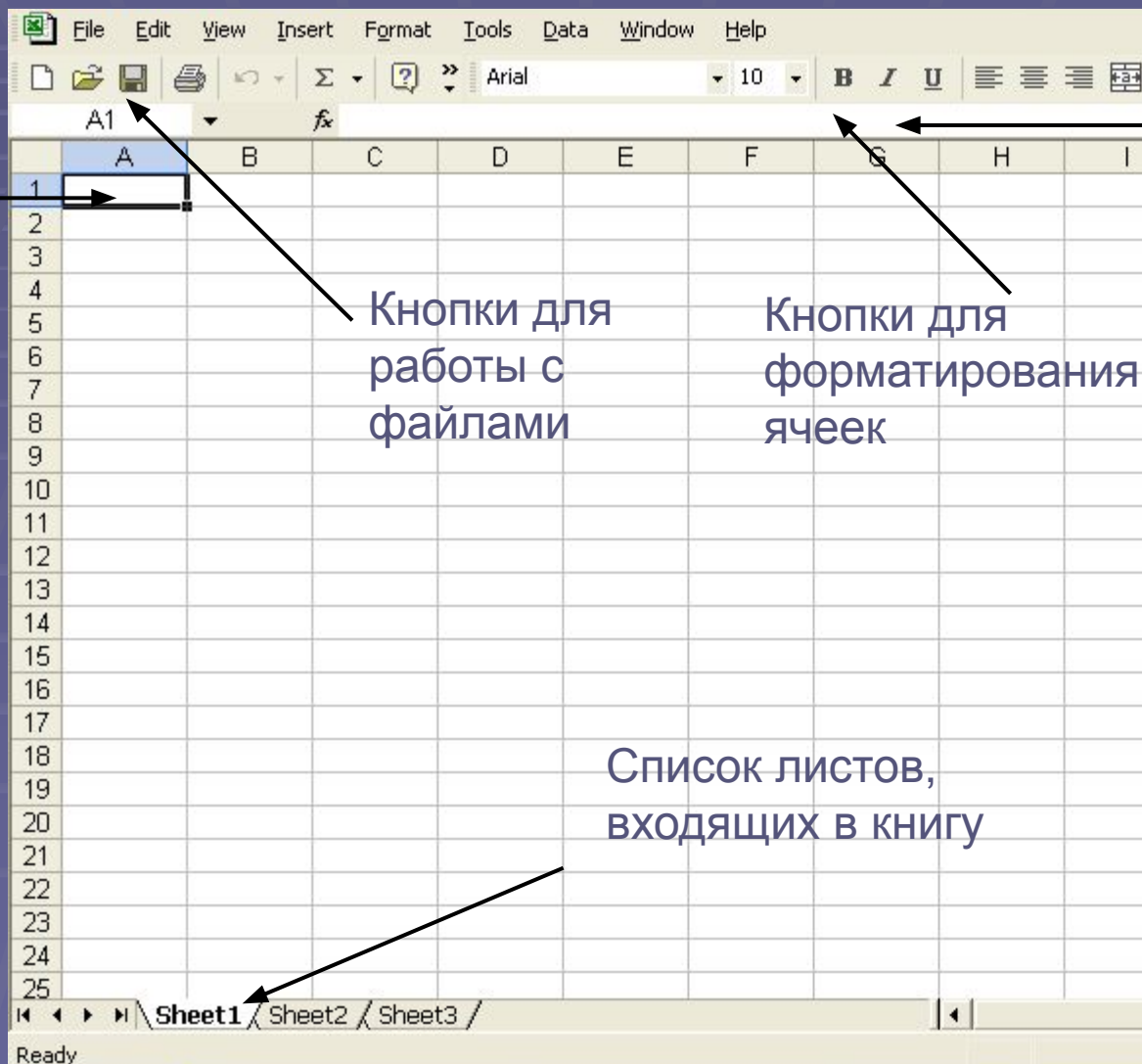
- Организация как числовых, так и текстовых данных
- Работа с небольшим количеством данных (вычисления)
- Анализ данных (статистика, графики, ...)

Рабочее окно MS Excel



Рабочее окно MS Excel

Ячейка
A1 (\$A\$1)



Кнопки для
работы с
файлами

Кнопки для
форматирования
ячеек

Список листов,
входящих в книгу

Поле состояния
содержимого
ячейки.

Виды данных

Ввод

Числа

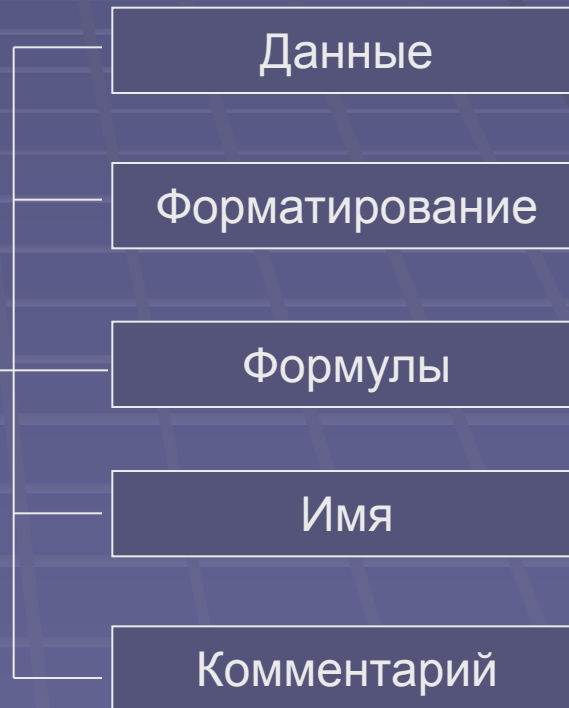
Формулы

Текст



Ячейка

Содержимое

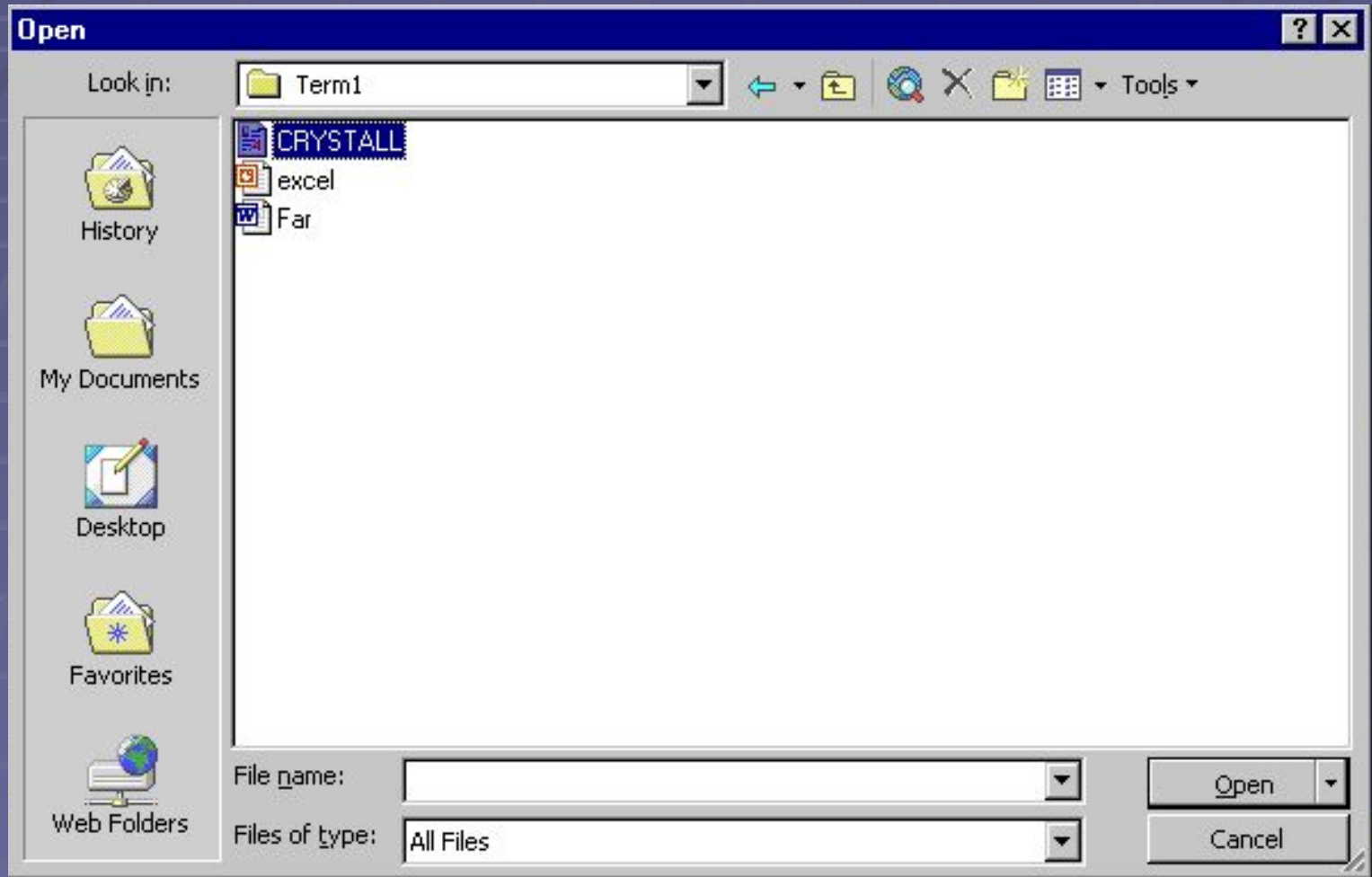


Пример листа с данными

Microsoft Excel - Students_04.xls

	A	B	C	D	F	G	H	I	
1	N	Фамилия	Имя	Отчество	Last name	First name	Group	Subgroup	User (ma
2	1	Андреева	Маргарита	Николаевна	Andreeva	Margarita	102	2	Madge
3	2	Андреева	Мария	Алексеевна	Andreeva	Maria	101	1	mashik
4	3	Армаш	Татьяна	Дмитриевна	Arماش	Tatiana	102	2	tanya_a
5	4	Бабаян	Тигран	Арменович	Babayan	Tigran	102	2	Gilza
6	5	Байрамукова	Диана	Азрет-Алиевна	Bayramukova	Diana	101	1	alamat
7	6	Бархатов	Владимир	Игоревич	Barkhatov	Ivan	101	1	Vovan_C
8	7	Борщёв	Иван	Владимирович	Borschhev	Ivan	101	1	Zemfira
9	8	Бурков	Борис	Андреевич	Burkov	Boris	102	2	TheWato
10	9	Бурлин	Антон	Иванович	Bulin	Anton	102	2	Solnish
11	10	Волкова	Екатерина	Григорьевна	Volkova	Ekaterina	102	2	volkova
12	11	Галкин	Иван	Ильич	Galkin	Ivan	102	3	Galkin_
13	12	Глотова	Ирина	Вячеславовна	Glotova	Irina	101	1	igpers
14	13	Диброва	Дарья	Владимировна	Dibrova	Darja	102	2	UdavDas
15	14	Долудин	Юрий	Валерьевич	Doludin	Yuri	101	1	Kaspers
16	15	Дыдычкин	Сергей	Александрович	Dydychkin	Sergei	102	3	dydychk
17	16	Закирзянова	Виоланта	Владимировна	Zakirzianova	Violanta	101	1	Violant
18	17	Карпусь	Ольга	Николаевна	Karpus	Olga	102	3	vershir
19	18	Ким	Александр	Робертович	Kim	Alexandr	101	1	Try2Fly
20	19	Кононова	Светлана	Владимировна	Kononova	Svetlana	102	2	Syrena
21	20	Коростелёв	Юрий	Дмитриевич	Korostylev	Yuri	101	1	Lan787
22	21	Кривоzubов	Михаил	Сергеевич	Krivozubov	Mikhail	101	1	Human
23	22	Кривошей	Александр	Владимирович	Krivoshej	Alexandr	102	3	krivoshe

Импорт данных из текста



Импорт данных из текста

Тип текстовой таблицы

Кодировка

Text Import Wizard - Step 1 of 3

The Text Wizard has determined that your data is Fixed Width.
If this is correct, choose Next, or choose the data type that best describes your data.

Original data type
Choose the file type that best describes your data:

- Delimited - Characters such as commas or tabs separate each field.
- Fixed width - Fields are aligned in columns with spaces between each field.

Start import at row: 25 File origin: 1254 : Turkish (Windows)

Preview of file F:\users\sas\FBB\Term1\CRYSTALL.pdb.

23	SCALE2	0.000000	0.021316	0.000000	0.000000						
24	SCALE3	0.000000	0.000000	0.006089	0.000000						
25	ATOM	1	N	LYS	A	74	18.732	8.253	-20.201	1.00	9
26	ATOM	2	CA	LYS	A	74	18.339	9.325	-19.243	1.00	9
27	ATOM	3	C	LYS	A	74	18.492	8.867	-17.798	1.00	9

Cancel < Back Next > Finish

Импорт данных из текста

Разделители данных

Text Import Wizard - Step 2 of 3

This screen lets you set the delimiters your data contains. You can see how your text is affected in the preview below.

Delimiters

- Tab
- Semicolon
- Comma
- Space
- Other:

Treat consecutive delimiters as one

Text qualifier: "

Data preview

SCALE2	0.000000	0.021316	0.000000	0.000000				
SCALE3	0.000000	0.000000	0.006089	0.000000				
ATOM	1	N	LYS	A	74	18.732	8.253	-20.2
ATOM	2	CA	LYS	A	74	18.339	9.325	-19.2
ATOM	3	C	LYS	A	74	18.492	8.867	-17.7

Cancel < Back Next > Finish

Импорт данных из текста

Microsoft Excel - Book1

Type a question for help

File Edit View Insert Format Tools Data Window Help

Arial 10 B I U

A1

Text Import Wizard - Step 3 of 3

This screen lets you select each column and set the Data Format.

'General' converts numeric values to numbers, date values to dates, and all remaining values to text.

Advanced...

Column data format:

- General
- Text
- Date: DMY
- Do not import column (skip)

Data preview

	Gener	Cener	Cener	Cener	Cener	Gener	Gener	General	Gener	Gener	Gener
ATOM 1	1	N	LYS	A	74	18.732	8.253	-20.201	1.00	92.76	N
ATOM 2	2	CA	LYS	A	74	18.339	9.325	-19.243	1.00	92.81	C
ATOM 3	3	C	LYS	A	74	18.492	8.867	-17.798	1.00	93.32	C
ATOM 4	4	D	LYS	A	74	18.009	7.798	-17.422	1.00	93.66	D
ATOM 5	5	CB	LYS	A	74	16.904	9.750	-19.500	1.00	90.24	C

Cancel < Back Next > Finish

Sheet1 Sheet2 Sheet3

Ready NUM SCRL

Определение
типа данных
в колонке

Импорт данных из текста

Microsoft Excel - Crystal

File Edit View Insert Format Tools Data Window Help

Type a question for help

K802 29.06.2004

	A	B	C	D	E	F	G	H	I	J	K	L	M
781	ATOM	781	C	LYS	B	177	-11.358	14.982	2.784	1.00	35.38	C	
782	ATOM	782	O	LYS	B	177	-10.387	15.202	3.509	1.00	33.89	O	
783	ATOM	783	CB	LYS	B	177	-13.415	16.431	2.836	1.00	36.37	C	
784	ATOM	784	CG	LYS	B	177	-13.993	17.791	2.461	1.00	37.76	C	
785	ATOM	785	CD	LYS	B	177	-15.468	17.927	2.812	1.00	42.33	C	
786	ATOM	786	CE	LYS	B	177	-15.717	17.914	4.309	1.00	44.59	C	
787	ATOM	787	NZ	LYS	B	177	-17.165	18.102	4.605	1.00	47.49	N	
788	ATOM	788	N	ASN	B	178	-11.807	13.757	2.533	1.00	36.51	N	
789	ATOM	789	CA	ASN	B	178	-11.162	12.587	3.110	1.00	36.13	C	
790	ATOM	790	C	ASN	B	178	-9.721	12.485	2.633	1.00	34.95	C	
791	ATOM	791	O	ASN	B	178	-8.830	12.129	3.402	1.00	32.72	O	
792	ATOM	792	CB	ASN	B	178	-11.934	11.319	2.739	1.00	38.55	C	
793	ATOM	793	CG	ASN	B	178	-12.971	10.952	3.779	1.00	40.52	C	
794	ATOM	794	OD1	ASN	B	178	-14.111	10.623	3.453	1.00	43.43	O	
795	ATOM	795	ND2	ASN	B	178	-12.573	10.999	5.044	1.00	43.93	N	
796	ATOM	796	N	TRP	B	179	-9.487	12.809	1.366	1.00	32.96	N	
797	ATOM	797	CA	TRP	B	179	-8.134	12.741	0.839	1.00	30.78	C	
798	ATOM	798	C	TRP	B	179	-7.227	13.733	1.567	1.00	33.00	C	
799	ATOM	799	O	TRP	B	179	-6.110	13.390	1.949	1.00	35.23	O	
800	ATOM	800	CB	TRP	B	179	-8.113	13.040	-0.663	1.00	29.30	C	
801	ATOM	801	CG	TRP	B	179	-6.775	12.755	-1.280	1.00	29.83	C	
802	ATOM	802	CD1	TRP	B	179	-6.337	11.560	-1.773	1.00	29.ИЮН	C	
803	ATOM	803	CD2	TRP	B	179	-5.672	13.665	-1.390	1.00	27.85	C	
804	ATOM	804	NE1	TRP	B	179	-5.028	11.667	-2.182	1.00	28.59	N	
805	ATOM	805	CE2	TRP	B	179	-4.599	12.947	-1.962	1.00	26.55	C	
806	ATOM	806	CE3	TRP	B	179	-5.492	15.014	-1.066	1.00	27.59	C	
807	ATOM	807	CZ2	TRP	B	179	-3.351	13.536	-2.205	1.00	27.83	C	
808	ATOM	808	CZ3	TRP	B	179	-4.252	15.600	-1.310	1.00	29.64	C	
809	ATOM	809	CH2	TRP	B	179	-3.200	14.859	-1.877	1.00	27.58	C	
810	ATOM	810	N	VAL	B	180	-7.709	14.956	1.774	1.00	32.28	N	
811	ATOM	811	CA	VAL	B	180	-6.908	15.980	2.442	1.00	30.59	C	

CRYSTALL

Ready NUM SCRL

Текстовая формула

The screenshot displays the Microsoft Excel interface. The title bar reads "Microsoft Excel - Book1". The menu bar includes "File", "Edit", "View", "Insert", "Format", "Tools", "Data", "Window", and "Help". The toolbar shows various icons for file operations and formatting. The active cell is C3, and the formula bar displays the formula `=CONCATENATE(A3;B3)`. The spreadsheet grid shows the following data:

	A	B	C	D	E	F	G	H	I	J	K	L	M
1													
2													
3	КОНЬ	ЯК	КОНЬЯК										
4													
5													
6													
7													
8													
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30													
31													

The status bar at the bottom shows "Ready" and "NUM SCRL". The sheet tabs at the bottom indicate "Sheet1", "Sheet2", and "Sheet3", with "Sheet2" being the active sheet.

Мастер формул

The screenshot displays the Microsoft Excel interface with the 'Function Arguments' dialog box open. The dialog box is titled 'Function Arguments' and shows the 'PRODUCT' function. The 'Number1' field is set to 'A2:A7', and the 'Number2' field is empty. The result of the function is shown as '= 30240'. The background spreadsheet shows a grid with the following data:

	A	B	C	D	E	F	G	H	I	J	K	L	M
1													
2		7	8 VIII	=PRODUCT(A2:A7)									
3		8											
4		5											
5		3											
6		4											
7		9											
8													
9													
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29													
30													
31													

The 'Function Arguments' dialog box contains the following text:

PRODUCT

Number1: A2:A7 = {7;8;5;3;4;9}

Number2: = number

= 30240

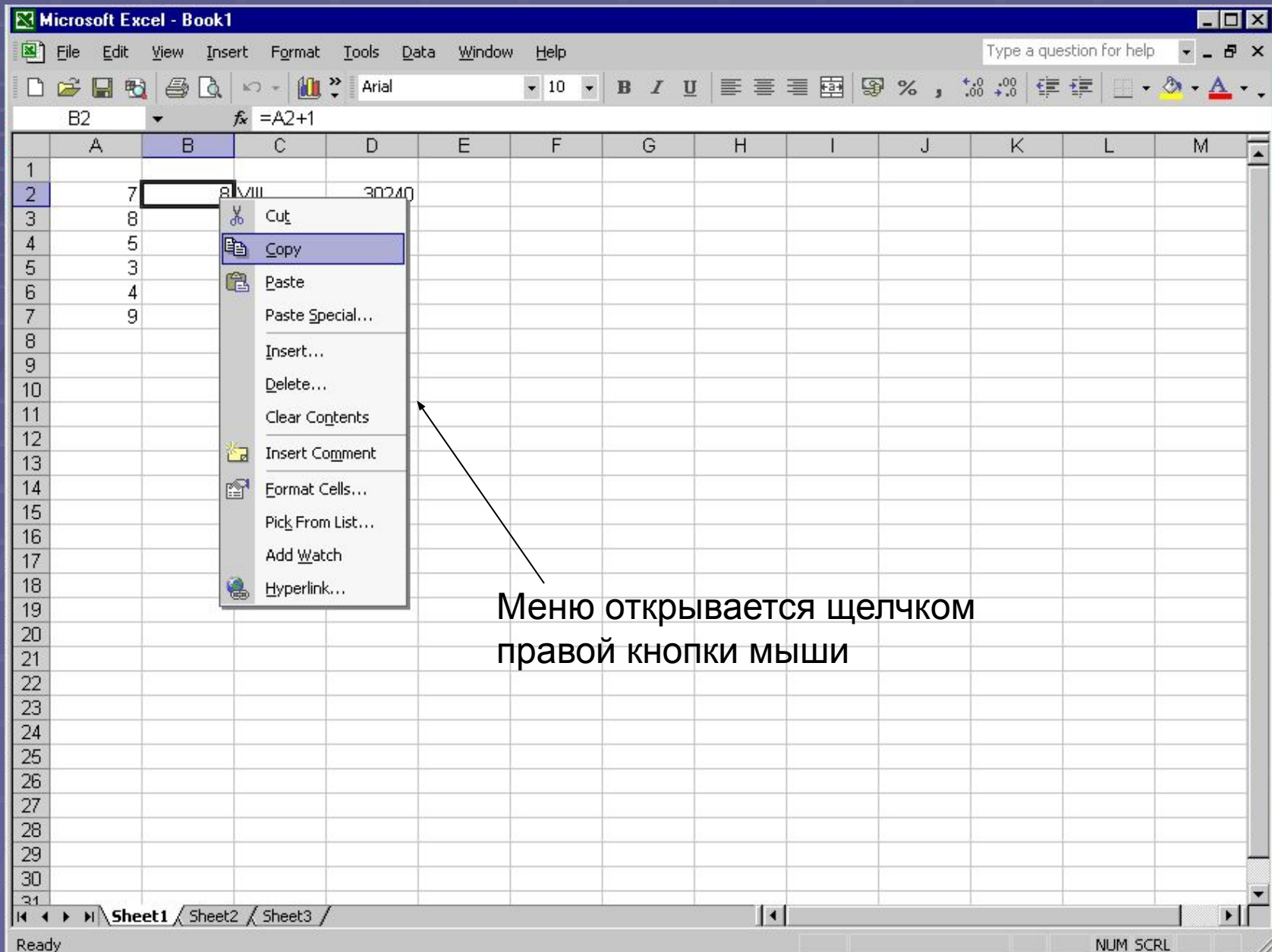
Multiplies all the numbers given as arguments.

Number1: number1;number2;... are 1 to 30 numbers, logical values, or text representations of numbers that you want to multiply.

Formula result = 30240

[Help on this function](#) OK Cancel

Копируем формулу...



The screenshot shows the Microsoft Excel interface with the following details:

- Window title: Microsoft Excel - Book1
- Menu bar: File, Edit, View, Insert, Format, Tools, Data, Window, Help
- Formula bar: B2, fx =A2+1
- Grid: Column B is selected. Cell B2 contains the value 8. Cell B3 contains the value 7. Cell B4 contains the value 5. Cell B5 contains the value 3. Cell B6 contains the value 4. Cell B7 contains the value 9.
- Context menu (right-click):
 - Cut
 - Copy** (highlighted)
 - Paste
 - Paste Special...
 - Insert...
 - Delete...
 - Clear Contents
 - Insert Comment
 - Format Cells...
 - Pick From List...
 - Add Watch
 - Hyperlink...

Меню открывается щелчком правой кнопки мыши

Относительные ссылки

The screenshot shows the Microsoft Excel interface with the following data in the spreadsheet:

	A	B	C	D	E	F	G	H	I	J	K	L	M
1													
2	7	8 VIII		30240									
3	8	9											
4	5	6											
5	3	4											
6	4	5											
7	9	10											
8													
9													
10													
11													
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29													
30													

The formula bar shows the active cell B3 contains the formula $=A3+1$. The spreadsheet data shows a sequence of numbers in column A (7, 8, 5, 3, 4, 9) and column B (8 VIII, 9, 6, 4, 5, 10). The formula in B3 is a relative reference that will automatically adjust to $=A4+1$ if copied to B4, and so on.

Относительные ссылки

The screenshot displays the Microsoft Excel interface with the following data and formula:

	A	B	C	D	E	F	G	H	I	J	K	L	M
1													
2		7	8	VIII	30240								
3		8	9										
4		5	6										
5		3	4										
6		4	5										
7		9	10										
8													
9													
10													
11													
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28													
29													
30													
31													

Formula bar: $=B2+1$

Построение диаграмм

Menu – Insert – Chart

Меню – Вставка – Диаграмма

The screenshot shows the Microsoft Excel interface with a data table and the Chart Wizard dialog box open. The data table is as follows:

	A	B	C	D	E	F	G	H	I	J	K	L	M
1													
2		7											
3		8											
4		5											
5		3											
6		4											
7		9											
8													
9													
10													
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The Chart Wizard dialog box is titled "Chart Wizard - Step 1 of 4 - Chart Type". It has two tabs: "Standard Types" and "Custom Types". The "Standard Types" tab is selected. The "Chart type:" list includes: Column, Bar, Line, Pie, XY (Scatter), Area, Doughnut, Radar, Surface, Bubble, and Stock. The "Column" type is selected. The "Chart sub-type:" section shows several options, with "Clustered Column" selected. The description for "Clustered Column" is: "Clustered Column. Compares values across categories." The dialog box has buttons for "Cancel", "< Back", "Next >", and "Finish".

Построение диаграмм

Microsoft Excel - Book1

File Edit View Insert Format Tools Data Window Help

Type a question for help

A2 fx

	A	B	C	D	E	F	G	H	I	J	K	L	M
1													
2	7												
3	8												
4	5												
5	3												
6	4												
7	9												
8													
9													
10													
11													
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30													
31													

Chart Wizard - Step 2 of 4 - Chart Source Data

Data Range Series

Category	Value
1	7
2	8
3	5
4	3
5	4
6	9

Data range: =Sheet1!\$A\$2:\$A\$7

Series in:

- Rows
- Columns

Cancel < Back Next > Finish

Построение диаграмм

Microsoft Excel - Book1

File Edit View Insert Format Tools Data Window Help

Type a question for help

A1

	A	B	C	D	E	F	G	H	I	J	K	L	M
1													
2		7											
3		8											
4		5											
5		3											
6		4											
7		9											
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31													

Chart Wizard - Step 3 of 4 - Chart Options

Titles Axes Gridlines Legend Data Labels Data Table

Chart title:

Category (X) axis:

Value (Y) axis:

Second category (X) axis:

Second value (Y) axis:

Series1

Cancel < Back Next > Finish

Sheet1 Sheet2 Sheet3

Ready NUM SCRL

Построение диаграмм

The screenshot displays the Microsoft Excel interface with a data table and the Chart Wizard dialog box open.

Data Table:

	A	B	C	D	E	F	G	H	I	J	K	L	M
1													
2		7											
3		8											
4		5											
5		3											
6		4											
7		9											
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29													
30													
31													

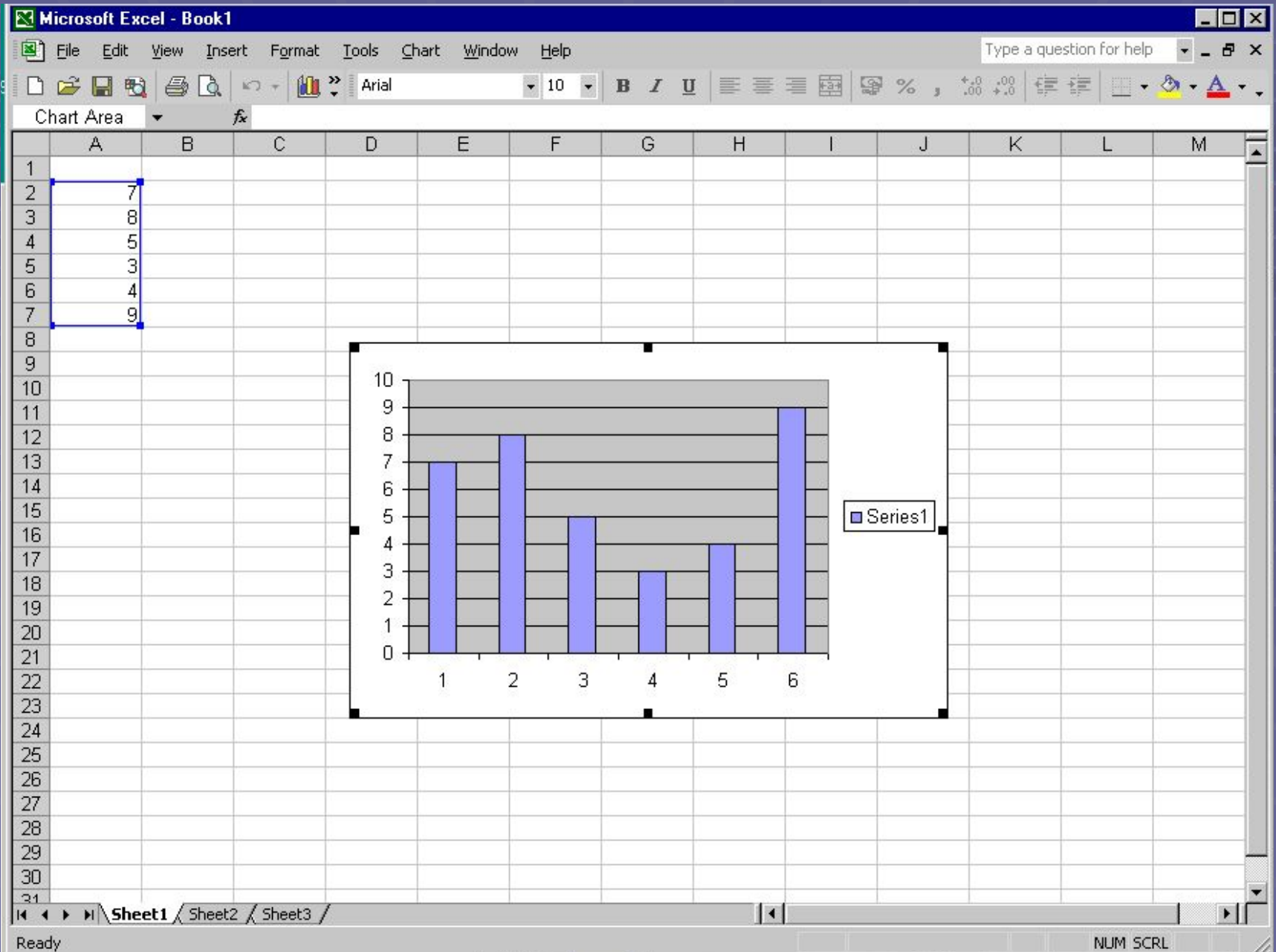
Chart Wizard - Step 4 of 4 - Chart Location

Place chart:

- As new sheet: Chart1
- As object in: Sheet1

Buttons: Cancel, < Back, Next >, Finish

Диаграмма



Сортировка данных

Menu – Data – Sort

Меню – Данные – Сортировка

The screenshot shows a Microsoft Excel window titled "Microsoft Excel - CRYSTALL". The menu bar includes File, Edit, View, Insert, Format, Tools, Data, Window, and Help. The toolbar shows various icons for file operations and formatting. The active cell is A1, containing the formula =REMARK. The data table is as follows:

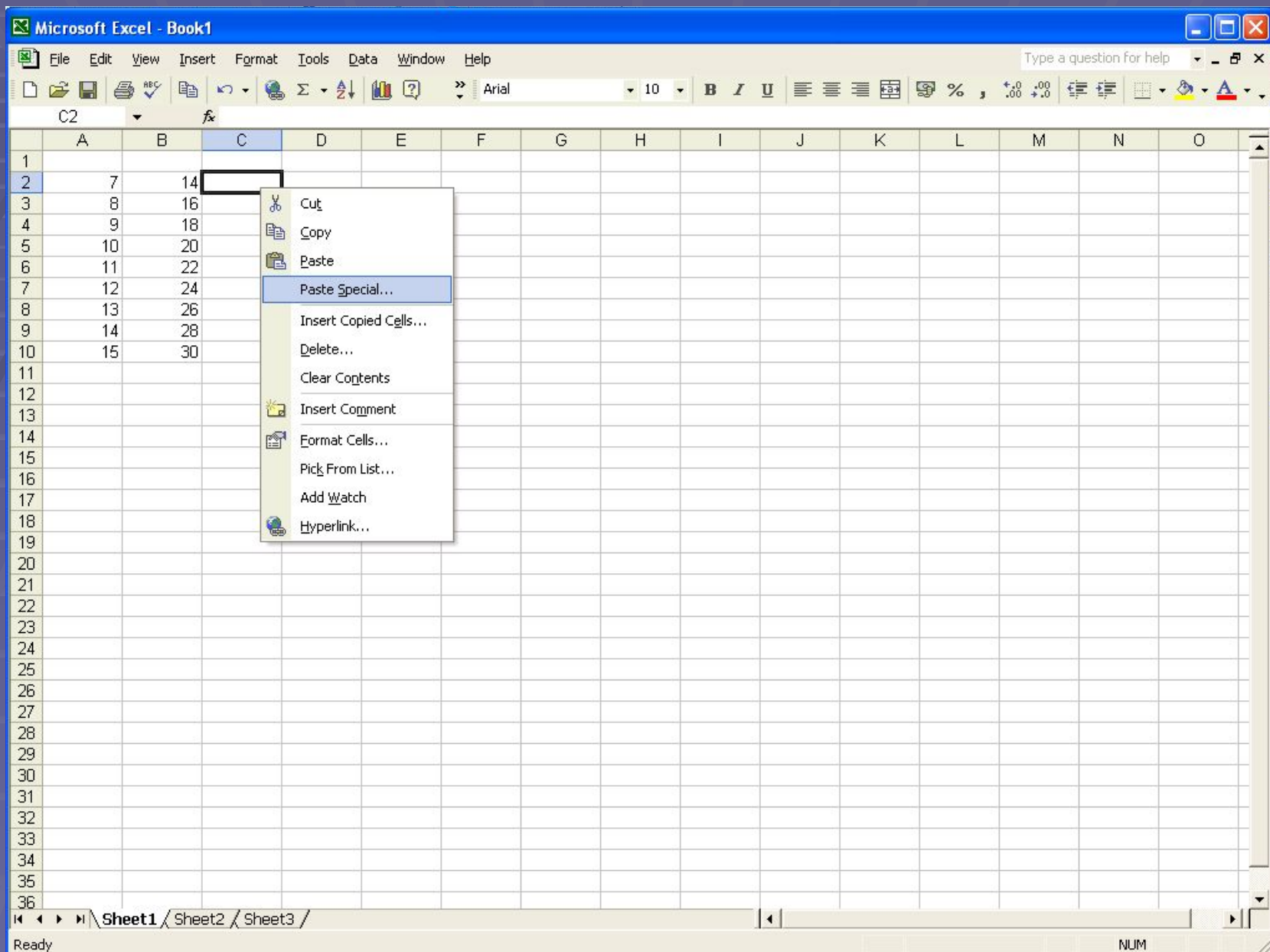
	A	B	C	D	E	F	G	H	I	J	K	L	M
1	REMAI	2	minir	100	steps								
2	REMAI	2	final	ener	##	Kcal/mol							
3	END												
4	ATOM	1	C1	LIP	L	1	-26.771	4.29					
5	ATOM	2	C2	LIP	L	1	-26.972	5.39					
6	ATOM	3	C3	LIP	L	1	-26.527	7.79					
7	ATOM	4	C4	LIP	L	1	-25.870	9.08					
8	ATOM	5	C5	LIP	L	1	-26.261	6.68					
9	ATOM	6	C6	LIP	L	1	-27.522	3.04					
10	ATOM	7	C7	LIP	L	1	-26.190	10.2					
11	ATOM	8	C8	LIP	L	1	-25.599	11.5					
12	ATOM	9	C9	LIP	L	1	-25.951	12.7					
13	ATOM	10	C10	LIP	L	1	-25.388	13.9					
14	ATOM	11	C11	LIP	L	1	-25.791	15.2					
15	ATOM	12	C12	LIP	L	1	-25.141	16.4					
16	ATOM	13	C13	LIP	L	1	-25.575	17.7					
17	ATOM	14	C14	LIP	L	1	-27.354	1.94					
18	ATOM	15	C15	LIP	L	1	-28.118	0.701	-29.325		анр.74	фев.72	
19	ATOM	16	C16	LIP	L	1	-24.819	18.866	-27.321	0.00	0.00		
20	ATOM	17	O17	LIP	L	1	-25.203	20.094	-26.995	0.00	0.00		
21	ATOM	18	O18	LIP	L	1	-23.919	18.690	-28.093	0.00	0.00		
22	ATOM	19	C19	LIP	L	1	-26.154	20.442	-25.992	0.68	0.39		

The "Sort" dialog box is open, showing the following settings:

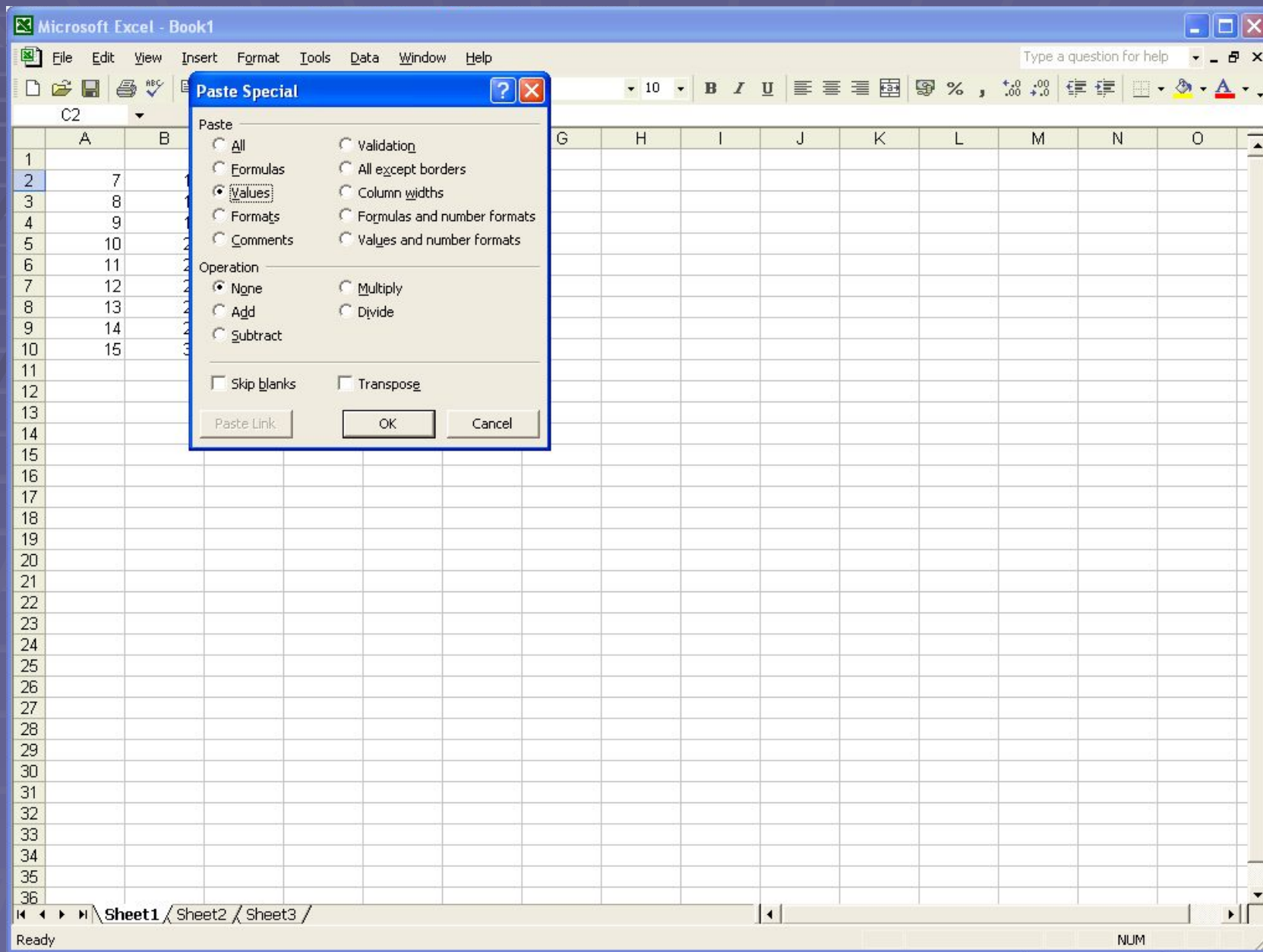
- Sort by: Column A
- Then by: (empty)
- Then by: (empty)
- My list has: No header row

The dialog box also includes radio buttons for Ascending and Descending sorting, and buttons for Options..., OK, and Cancel.

Специальная вставка



Специальная вставка

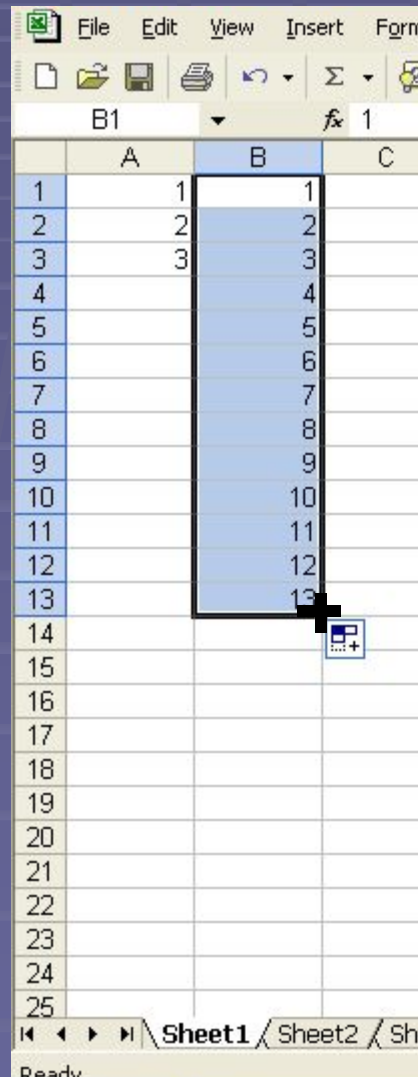
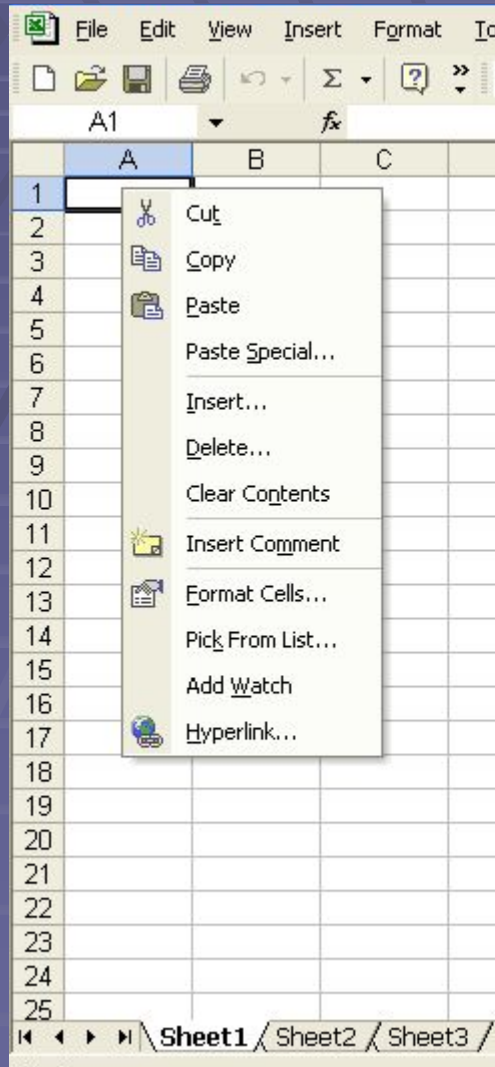


Ввод данных

Меню

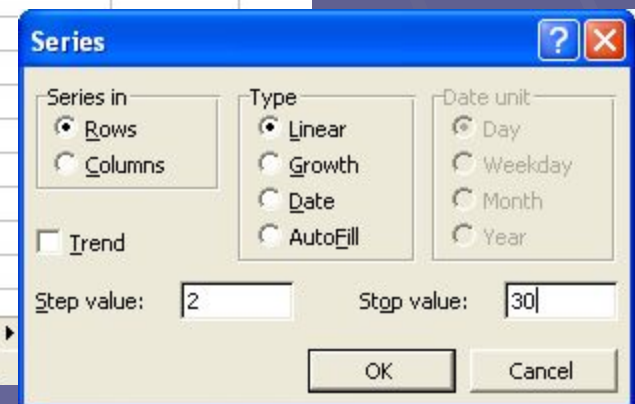
Курсор

Прогрессия



Меню –
Правка –
Заполнить –
Прогрессия

Menu – Edit –
Fill – Series



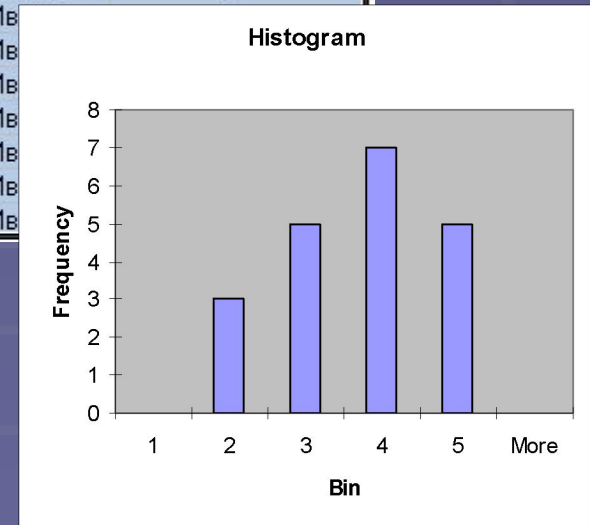
Гистограмма

Гистограмма – средство анализа, которое рассчитывает частоты значений в выбранных диапазонах данных.

Пример: В классе 20 студентов. Каждый студент получил отметку за контрольную. С помощью этого инструмента можно узнать, сколько человек получили ту или иную оценку.

см рис.

	A	B	C	D
1	1 Иванов		4	1
2	2 Иванов		2	2
3	3 Иванов		5	3
4	4 Иванов		3	4
5	5 Иванов		4	5
6	6 Иванов		5	
7	7 Иванов		4	
8	8 Иванов		3	
9	9 Иванов		2	
10	10 Иванов		4	
11	11 Иванов		3	
12	12 Иванов		5	
13	13 Иванов		3	
14	14 Ив			
15	15 Ив			
16	16 Ив			
17	17 Ив			
18	18 Ив			
19	19 Ив			
20	20 Ив			



Гистограммы

Menu – Tools – Data Analysis

Меню – Сервис – Анализ данных

The screenshot shows a Microsoft Excel spreadsheet with a data table and the Data Analysis dialog box open. The data table contains 25 rows of data, with columns A through N. The Data Analysis dialog box is open, showing a list of analysis tools, with 'Histogram' selected. The dialog box also includes 'OK', 'Cancel', and 'Help' buttons.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	REMAF	2	minir	100	steps									
2	REMAF	2	final	ener	##	Kcal/mol								
3	END													
4	ATOM	1	C1	LIP	L	1	-26.771	4.295	-29.040	Jan-65	0.95			
5	ATOM	2	C2	LIP	L	1	-26.972	5.395	-28.032	2-Apr	Jan-17			
6	ATOM	3	C3	LIP	L	1	-26.527	7.792	-27.470	Jan-23	0.70			
7	ATOM	4	C4	LIP	L	1	-25.87	9.065	-27.931	0.37	0.21			
8	ATOM	5	C5	LIP	L	1	-26.264	6.664	-28.428	0.82	0.47			
9	ATOM	6	C6	LIP	L	1	-27.1							
10	ATOM	7	C7	LIP	L	1	-28.1							
11	ATOM	8	C8	LIP	L	1	-25.1							
12	ATOM	9	C9	LIP	L	1	-25.1							
13	ATOM	10	C10	LIP	L	1	-25.1							
14	ATOM	11	C11	LIP	L	1	-25.1							
15	ATOM	12	C12	LIP	L	1	-25.1							
16	ATOM	13	C13	LIP	L	1	-25.1							
17	ATOM	14	C14	LIP	L	1	-27.1							
18	ATOM	15	C15	LIP	L	1	-28.1							
19	ATOM	16	C16	LIP	L	1	-24.1							
20	ATOM	17	O17	LIP	L	1	-25.203	20.094	-26.995	0.00	0.00			
21	ATOM	18	O18	LIP	L	1	-23.919	18.690	-28.093	0.00	0.00			
22	ATOM	19	C19	LIP	L	1	-26.154	20.442	-25.992	0.68	0.39			
23	ATOM	20	C20	LIP	L	1	-25.419	20.862	-24.735	0.06	0.03			
24	ATOM	21	C21	LIP	L	1	-24.746	22.204	-24.829	0.00	0.00			
25	ATOM	22	O22	LIP	L	1	-24.564	19.802	-24.267	0.00	0.00			

Data Analysis

Analysis Tools

- Anova: Single Factor
- Anova: Two-Factor With Replication
- Anova: Two-Factor Without Replication
- Correlation
- Covariance
- Descriptive Statistics
- Exponential Smoothing
- F-Test Two-Sample for Variances
- Fourier Analysis
- Histogram**

OK
Cancel
Help

Web

<http://kodomo.cmm.msu.ru/FBB/BasicData/ppt/excel.ppt>