

User's Manual

CQZ2
Version 1.10.0

Worksheet Generator for Chemistry

Windows XP® - Windows Vista® - Windows 7® - Windows 8® - Windows 10®



CONTENTS

Introduction.....	3
Terms of use.....	3
Main window	4
Wizard window	9
Properties of the worksheet window	14
Shortcut keys.....	16
List of subjects, topics and types of problems	17
Specifications	19
Registered trademarks	20

Introduction

CQZ2 is a Windows software for automatic generation of Worksheets of problems, exercises and questions of Chemistry for educational purposes.

Please, read this manual carefully to learn all the capabilities of the software.

Terms of use

In no event shall VaxaSoftware be liable to anyone for direct, indirect, special, collateral, incidental, or consequential damages by the use or impossibility of use of the software, nor by the effects in the operation of other software or the operating system.

Before the installation we recommended to make backup of your data and create a restoration point.

You will be able freely to evaluate the software during the time that considers necessary. Passed this period of evaluation you would have to register it or uninstall it.

To register the software, please see the option "REGISTER APPLICATION" in the help menu of the software.

After paying the registry fee you will receive by email the REGISTRATION KEY of the software. Once registered the software, it will be able to use the options that were disabled until that moment.

The REGISTRATION KEY is UNIQUE for EACH COMPUTER.

You cannot use the same REGISTRATION KEY for multiple computers.

You can freely distribute unaltered copies of the installation system of the software to other users. You cannot decompile the software nor use no type of reverse engineer for its analysis or modification. You cannot use part or the totality of the software to create a new software.

Conflicts of shared files:

VaxaSoftware assumes no liability for conflicts due to the incompatibility of shared files (*.dll, *.ocx and other files).

VaxaSoftware's software use shared files (*.dll, *.ocx and other files).

It is possible that the shared file already exists and whether or not previously replaced by a different version during the installation of the VaxaSoftware's software.

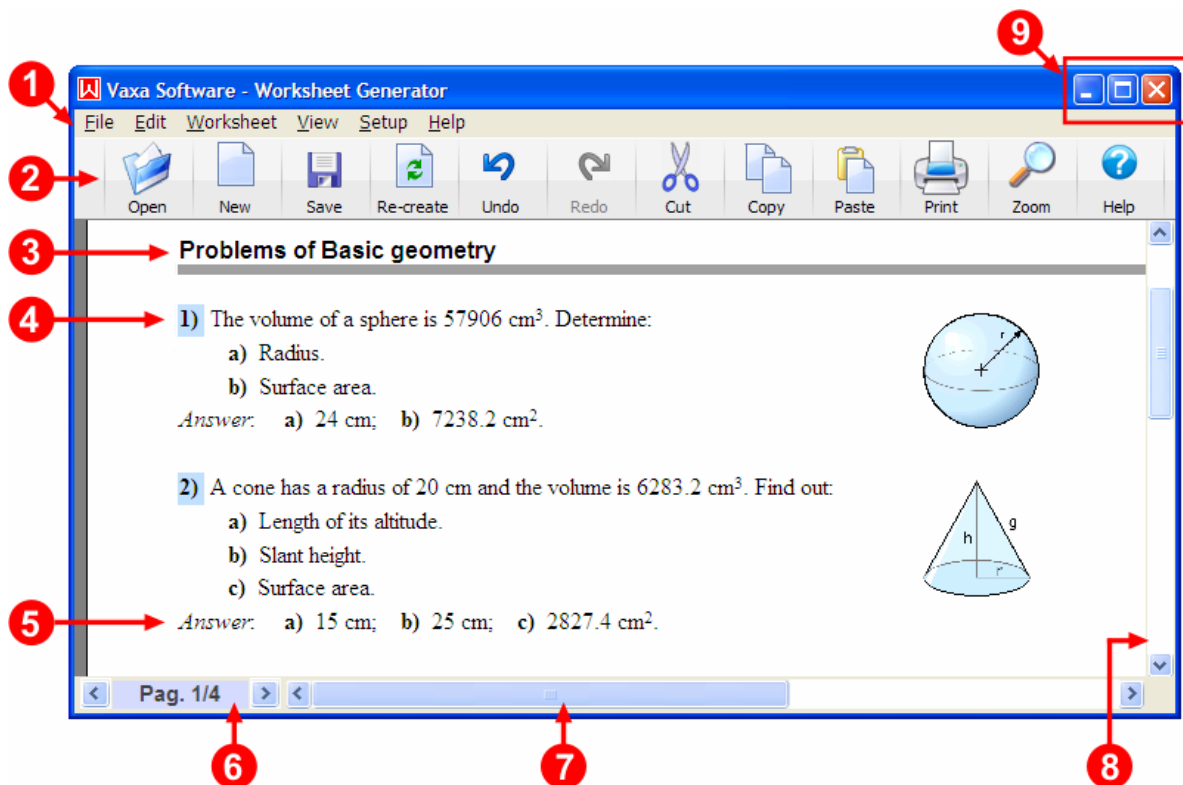
This can cause the installed software may not work and/or a third party software that shares the same file does not.

Also the installation of a third party software can cause the VaxaSoftware's software or third party software may not work correctly.

VaxaSoftware will try to resolve these conflicts in a reasonable manner, despite its satisfactory resolution is not guaranteed.

Design, products, specifications, and prices are for information purposes only. VaxaSoftware reserves the right to change or modify design, products, specifications, and prices at any time without prior notice.

Main window



(1) Menu bar

It contains the menus: *File*, *Edit*, *Worksheet*, *View*, *Setup* and *Help*.

File menu

New worksheet... menu

Opens the *Wizard* window that will help us create a new worksheet.

Open... menu

Opens the *dialog* window to select and open a worksheet file (*.col).

Create custom worksheets for a group of students... menu

Allows us create custom worksheets for a group of students based on the current document. The list of students must be a text file with one name per line.

Save menu

Saves the current worksheet. If the worksheet is new or has been re-created, will be saved as a new file and we asked for a file name and a path to save it.

Save as... menu

Shows the *dialog* window to select a path and a filename (*.col) to save the current worksheet.

Print... menu

Opens the *Print* window. In it we can select the printer destination and specify the pages we want to print and the number of copies.

Print all worksheets from a folder... menu

Allows us print the worksheets from a folder.

List of recent files menu

Lists recent files opened or saved. To open a file will click on its name.

Exit menu

Closes the application.

Edit menu

Undo menu

Undoes last action.

Redo menu

Returns to the state before last *Undo*.

Cut menu

Copies selected problem to the clipboard and deletes it.

Copy menu

Copies selected problem to the clipboard.

Paste menu

Inserts the problem that is on the clipboard into the worksheet.

Delete menu

Erases selected problem.

Move to the beginning menu

Moves to the top selected problem.

Move to the end menu

Moves to the end selected problem.

Move up menu

Moves up one position selected problem.

Move down menu

Moves down one position selected problem.

Re-create this problem menu

Re-creates selected problem.

The created problem will be of the same type but with other data and/or statement.

The new problem replaces the selected one.

Insert another similar problem menu

Creates another problem of the same type that the selected one.

The created problem will be of the same type but with other data and/or statement.

The new problem will be inserted in the position of the selected one.

Worksheet menu

Re-create worksheet menu

Creates another worksheet and replaces the current worksheet.

The new re-created worksheet will be of the same type of problems but with other data and/or statements.

◆ **Note:**

This new re-created worksheet is assumed as a new file.

No answers menu

Hides the answers of the problems.

Answers after each problem menu

Puts the answers of each problem after the statement of each one.

Answers together at the end menu

Puts the answers of problems all together at the end of the worksheet.

Answers in a separate page menu

Puts the answers of problems together in new pages at the end of the worksheet.

Properties menu

Opens the *Properties of the Worksheet* window to change general properties of the current worksheet.

➔ See *Description of parts: Properties of the Worksheet window* for further details.

View menu

Editing buttons menu

Shows / hides editing buttons: **Undo**, **Redo**, **Cut**, **Copy** and **Paste**.

Zoom menu

Allows us set size of the current worksheet.

The following settings are available: **Fit to page width**, **50%**, **75%**, **100%**, **150%** and **200%**.

Setup menu

Show Startup window menu

Allows us show/hide the startup options window when Worksheets Generator starts.

Help menu

User's manual (PDF document)... menu

Shows this manual.

Application registration menu

Shows the registration form window to register the application.

Disabled functions in the unregistered version menu

Shows the list of disabled functions when the application is not registered.

Home page (www.vaxasoftware.com)... menu

Connects to VaxaSoftware home page.

An active Internet connection and a browser are required.

About... menu

Shows the *Splash* window with the version and description of the application.

(2) Buttons bar

Open button

→ See *File / Open* menu for further details.

New button

→ See *File / New worksheet* menu for further details.

Save button

→ See *File / Save* menu for further details.

Re-create button

This button can either re-creates a selected problem or the whole worksheet.

1) If nothing is selected the whole worksheet is re-created.

The new worksheet replaces the old one and is considered as a new file.

The new re-created worksheet has the same type of problems but with other data and/or statements.

2) If there is a selected problem a new problem is re-created.

This new problem replaces the old selected one. The new problem is similar type but with other data and/or statements.

Undo button

→ See *Edit / Undo* menu for further details.

Redo button

→ See *Edit / Redo* menu for further details.

Cut button

→ See *Edit / Cut* menu for further details.

Copy button

→ See *Edit / Copy* menu for further details.

Paste button

→ See *Edit / Paste* menu for further details.

Print button

→ See *File / Print* menu for further details.

Zoom button

→ See *View / Zoom* menu for further details.

Help button

→ See *Help* menu for further details.

(3) Worksheet title

Shows us the worksheet title.

To change the title we access the properties of the worksheet clicking on the *Worksheet / Properties of the worksheet* menu.

→ See *Description of parts: Properties of the Worksheet window* for further details.

(4) Statement of the problem

Problem number and its statement.

→ We can select a problem clicking on it with the main button of the mouse.

Then we can edit it using the **Edit** menu options.

Also we can access the **Edit** menu options clicking the secondary button of the mouse when a problem is selected.

→ See **Edit** menu for further details.

We can change the style of the problems number (initial number, prefix, suffix and color).

To change the problem number properties we access the properties of the worksheet clicking on the **Worksheet / Properties of the worksheet** menu.

(5) Answer of the problem

Shows us the answer of the problem.

The answer of a problem can be hidden / shown and changed of place.

→ See **Worksheet** menu for further details.

(6) Page scroll bar

Shows us the number of the current page and the total pages of the worksheet.

We can press buttons on the left and right side of the page number to access to the previous or next page. Also we can press **Page Up** and **Page Down** cursor keys.

To access to the first page we can press the **Home** cursor key, to access to the end one we press the **End** cursor key.

◆ Note:

Page numbers shown are ordinal numbers. If our pages are numbered and the first number isn't 1 then the page number that appears on the page does not match that shown in the bar.

Example:

If the first page of our worksheet is numbered from 15 to 18 the displayed numbers will be the following:

Page 15 is shown as **Pag. 1/4**.

Page 16 is shown as **Pag. 2/4**.

Page 17 is shown as **Pag. 3/4**.

Page 18 is shown as **Pag. 4/4**.

(7) Horizontal scroll bar

Allows us move current page horizontally if that does not fit entirely in the window.

Also we can press **Left** ← and **Right** → cursor keys.

(8) Vertical scroll bar

Allows us move current page vertically if that does not fit entirely in the window.

Also we can press **Up** ↑ and **Down** ↓ cursor keys.

(9) Window control buttons

Minimize button

Minimizes the application to an icon on the desktop.

Maximize / Restore button

Maximizes / restores the application's window size.

Close button

Closes the application. Also we can press Alt + F4 keys on our keyboard.

Wizard window

The *Wizard* window allows us select the subject, topics, types and amount of problems we want create.

We have two ways to start the *Wizard* window:

- 1) Clicking on the **File / New worksheet** menu.
- 2) Clicking on the **New** button.

We can move through the *Wizard* window pressing **Back** and **Next** buttons.
To close the *Wizard* click on **Cancel** button.

The *Wizard* has the following windows:

- **Start**
- **Select the subject**
- **Types of documents**
- **Select topics, types and amount of problems**
- **Problem numbers / Page numbers**
- **Position of the answers / Sorting method**
- **Worksheet title**

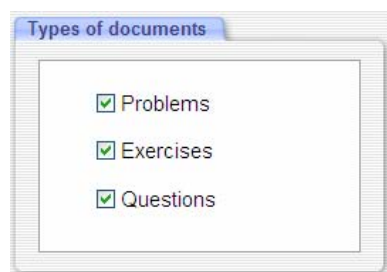
Start window

Gives us a brief description of the *Wizard*.

Select the subject window

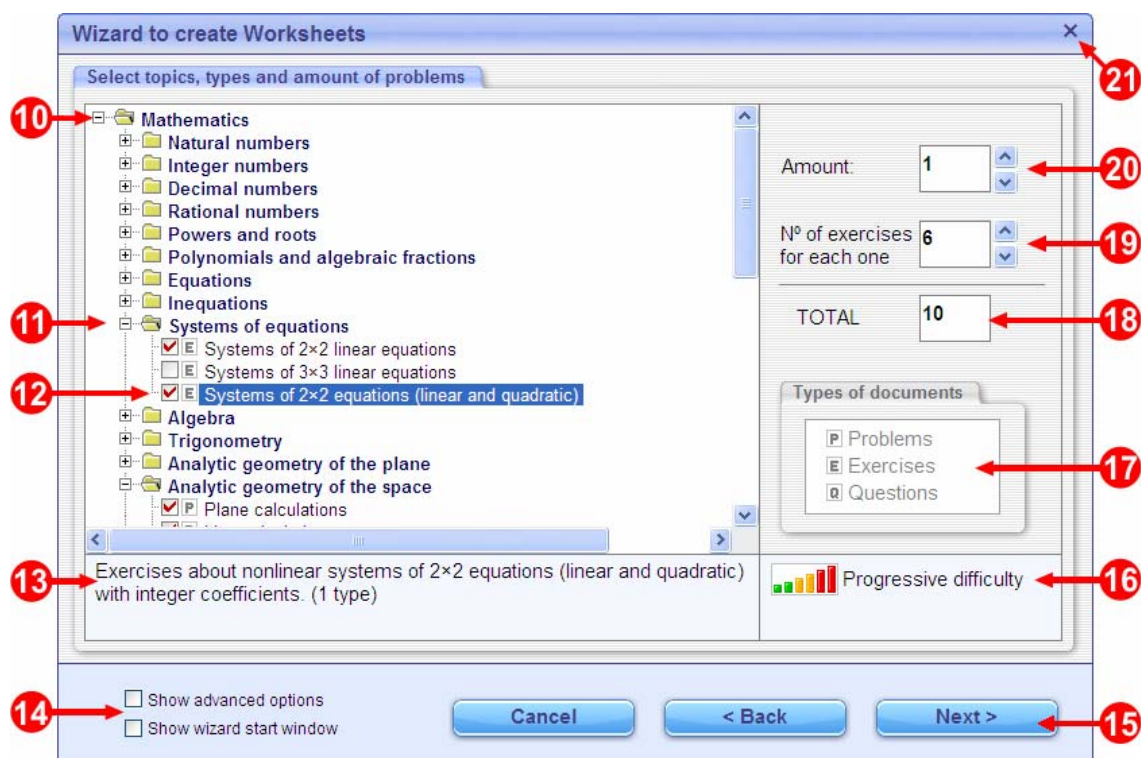
Allows us select the subject of the problems we want create.

Types of documents window



Lets us filter the types of documents: Problems, exercises or questions.

Select topics, types and amount of problems window



(10) Subject folder

Displays the name of the subject previously selected.

(11) Topic folder

Displays the name of the topic.

(12) Type of document mark: Problem, Exercise, Question

Shows the name and type of document according to the mark to the left of each name:
[P] Problems, [E] Exercises, [Q] Questions.

(13) Description of the current problem

Displays extended information about the problem, exercise or question selected.

(14) View options

Allows us show or hide windows of the wizard:

Show advances options

When this option is activated we can access the followings windows:

- *Types of documents.*
- *Problem numbers / Page numbers.*
- *Position of the answers / Sorting method.*

Show wizard start window

When this option is activated we can access the start window of the Wizard.

(15) Buttons

Cancel button

Closes the *Wizard* window.

Back button


Shows previous window of the *Wizard*.

Next button

Shows next window of the *Wizard*.

(16) *Difficulty level* mark

Indicates the difficulty level of the selected problem. The difficulty level may be:

Progressive difficulty: 

 *Low difficulty*

 *Medium difficulty*

 *High difficulty*

◆ *Note*

The *Difficulty Progressive* function will not work if the worksheet is created as *unsorted*.

(17) Legend about *Types of documents*

Shows the type of document according to the mark to the left of each:

[P] Problems, [E] Exercises, [Q] Questions.

(18) *Total amount of documents (problems)*

Shows the total number of documents (problems, exercises and questions) selected.

◆ *Note:*

We cannot create more than 500 problems in a single worksheet.

If we need more than 500 problems, we have to distribute them in various worksheets with 500 or less problems in each one.

(19) *Amount of elements in each exercise or question*

If the document type is exercise or question, we can specify the number of items we want to create within each.

The elements are sorted alphabetically from **a** to **z** (26 elements is the maximum amount).

The default amount is 6.

The minimum amount is 2.

The maximum amount is generally 26, but may be lower.

(20) *Amount of problems (exercise or question)*

It allows us specify the amount of problems we want to create of the selected type.

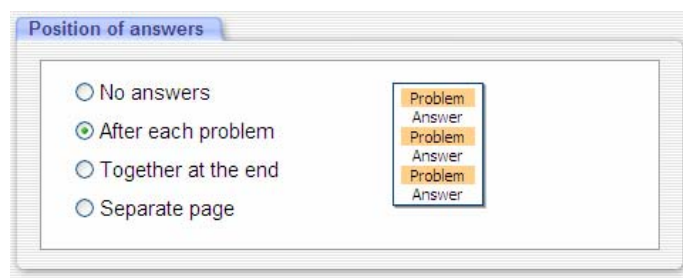
The default amount is 1.

The maximum amount is 99.

(21) *Close* button

Closes the *Wizard* window.

Position of answers / Sorting method window

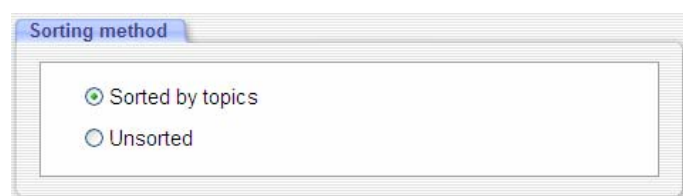


Position of answers

Specifies four options for the position of the answers:

- **No answers**
- **Answers after each problem**
- **Answers together at the end**
- **Answers on a separate page**

➔ See *Worksheet* menu for further details.



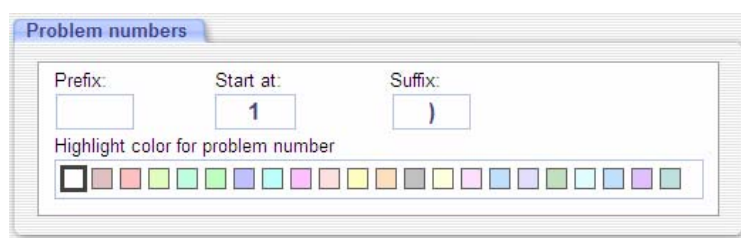
Sorting method

Allows us sort the problems by topics or randomly (unsorted).

◆ Note

If the worksheet is created as unsorted the **Difficulty Progressive** function will not work .

Problem numbers / Page numbers window



Problem numbers

Sets the following four properties for the number of the problems:

- **Prefix:** Text that appears to the left of the number of each problem (default is empty).
- **Suffix:** Text that appears to the right of the number of each problem.
(Default is a close parenthesis).
- **Start at:** Initial problem number (default is 1).
- **Highlight color:** Background color of the problem number text (default is white).

◆ Note:

The initial number must be less than 2000.

Page numbers

Sets the position of page number and its initial value:

- *Insert page number* option: Click on this option to turn on/off page numbering.
- *Start at*: Specifies the initial number (default is 1).
- *Position*: Sets the placement of the page number:

Up

Down.

- *Alignment*: Specifies the alignment of the page number:

Left

Center

Right

Inside

Outside

◆ Note:

The initial number must be less than 2000.

Worksheet title window

Allows us specify the text that leads all the pages of the worksheet.

Properties of the worksheet window

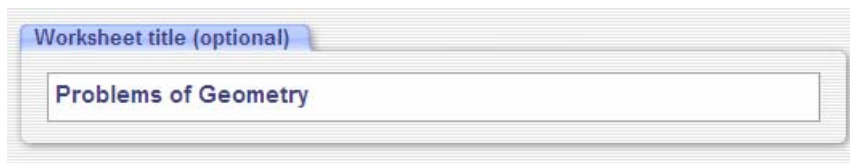
The *Properties of the worksheet* window allows us modify the general properties of the current worksheet.

To access the *Properties of the worksheet* window click on the **Worksheet / Properties of the worksheet** menu.

This window has the following options:

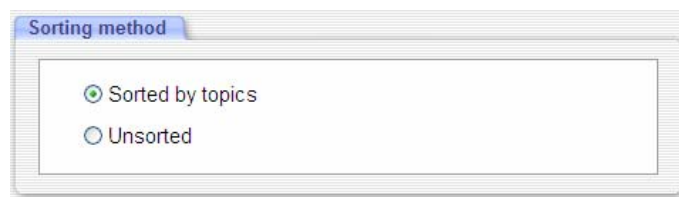
- **Title**
- **Sorting method**
- **Position of answers**
- **Problem numbers**
- **Page numbers**

Worksheet title option

A dialog box titled "Worksheet title (optional)" with a text input field containing the text "Problems of Geometry".

Allows us specify the text that leads all the pages of the worksheet.

Sorting method option

A dialog box titled "Sorting method" with two radio button options: "Sorted by topics" (which is selected) and "Unsorted".

Allows us sort the problems by topics or randomly (unsorted).

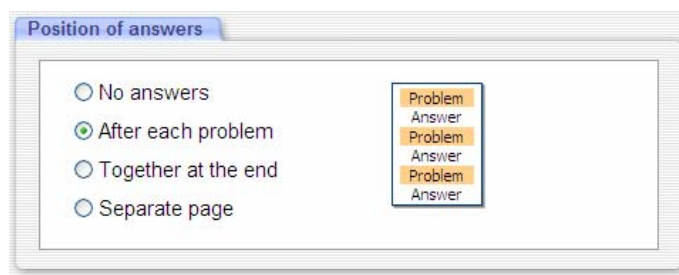
◆ Note 1:

We cannot sort a worksheet that was created as unsorted.

◆ Note 2:

The **Difficulty Progressive** function will not work if we mark the worksheet as unsorted.

Position of answers option

A dialog box titled "Position of answers" with four radio button options: "No answers", "After each problem" (which is selected), "Together at the end", and "Separate page". To the right of the options is a preview window showing a vertical list of "Problem" and "Answer" labels, where "Answer" labels are highlighted in orange.

Specifies four options for the position of the answers:

- **No answers**
- **Answers after each problem**
- **Answers together at the end**
- **Answers on a separate page**

➔ See **Worksheet** menu for further details.

Problem numbers option

Sets the following four properties for the number of the problems:

- *Prefix*: Text that appears to the left of the number of each problem (default is empty).
- *Suffix*: Text that appears to the right of the number of each problem.
(Default is a close parenthesis).
- *Start at*: Initial problem number (default is 1).
- *Highlight color*: Background color of the problem number text (default is white).

◆ **Note:**

The initial number must be less than 2000.

Page numbers option

Sets the position of page number and its initial value:

- *Insert page number* option: Click on this option to turn on/off page numbering.
- *Start at*: Specifies the initial number (default is 1).
- *Position*: Sets the placement of the page number:
Up
Down.
- *Alignment*: Specifies the alignment of the page number:
Left
Center
Right
Inside
Outside

◆ **Note:**

The initial number must be less than 2000.

Shortcut keys

List of keyboard shortcuts available in the **Main** window.

Ctrl + N	New worksheet
Ctrl + O	Open
Ctrl + S	Save
Ctrl + P	Print
Ctrl + F4	Exit
Alt + F4	Exit
Ctrl + R	Re-create worksheet
Ctrl + Z	Undo
Ctrl + Y	Redo
Ctrl + X	Cut
Ctrl + C	Copy
Ctrl + V	Paste
Del	Delete
Ctrl + E	Re-create selected problem
Ctrl + I	Insert a similar problem to the selected one
F1	Help / User's Manual (PDF document...)
F2	Move up selected problem
F3	Move down selected problem
F4	Open <i>Properties of the worksheet</i> window
Up arrow	Move down current page
Down arrow	Move up current page
Left arrow	Move right current page
Right arrow	Move left current page
Page Up	Access to previous page
Page Down	Access to next page
Home	Access to first page
End	Access to last page

List of subjects, topics and types of problems

CHEMISTRY

Units and chemical formulae

- Grams, moles, molecules, and atoms conversions
- <R> Percent composition
- <R> Determining empirical and molecular formulae

Gases

- Problems of ideal gases I
- <R> Problems of ideal gases II

Solutions

- Aqueous solutions I
- <R> Aqueous solutions II
- <R> Aqueous solutions III: Dilutions
- <R> Colligative properties of solutions (I)
- <R> Colligative properties of solutions (II)

Stoichiometry of chemical reactions

- Balancing chemical equations
- Simple stoichiometry of reactions I
- <R> Simple stoichiometry of reactions II
- <R> Simple stoichiometry of reactions III
- <R> Percent yield of reaction
- <R> Limiting reagents in stoichiometry

Thermochemistry

- <R> Specific and latent heat
- Internal energy and enthalpy
- <R> Enthalpy of reaction
- <R> Hess's Law
- <R> Average bond enthalpies
- <R> Gibbs free energy and spontaneity
- <R> Born-Haber Cycle

Chemical kinetics

- Basic calculations in chemical kinetics
- <R> Rate law of reaction
- <R> Arrhenius Equation

Gas phase equilibria

- Basic calculations
- Le Châtelier's principle
- <R> Calculation of the equilibrium constant
- <R> Calculation of composition at equilibrium

Acid-base equilibria

- <R> Completing acid-base equations
- <R> Acidic, basic and amphoteric compounds
- Strong acids and bases
- <R> Weak acids and bases
- <R> Aqueous solutions of salts (acidic, basic or neutral)
- <R> Salt hydrolysis
- <R> Buffer solutions
- <R> Acid-base titrations

Solubility equilibria

- <R> Solubility product constant and solubility in pure water
- <R> Solubility in the presence of a common-ion

List of subjects, topics and types of problems (*continued*)

Redox reactions

- Basic concepts and calculations
- <R> Balancing oxidation-reduction equations in an acidic medium
- Balancing oxidation-reduction equations in a basic medium
- <R> Balancing oxidation-reduction equations in acidic or basic medium
- <R> Stoichiometry of redox reactions
- <R> Redox titrations
- <R> Galvanic cell
- <R> Electrolysis

Atomic and molecular structure

- <R> Number of protons, neutrons, and electrons for atoms and ions
- Quantum numbers
- <R> Electron configuration, group #, and period #
- <R> Electron configuration, periodic properties, formula and type of bond
- <R> Molecular geometry
- <R> Photoelectric effect
- <R> Emission spectrum of hydrogen atom
- <R> Average atomic mass and isotopic abundances
- <R> Nuclear reactions
- Nuclear mass and binding energy
- <R> Nuclear disintegration

Nomenclature of inorganic compounds

- W: Elements
- N: Elements
- W: Monoatomic ions
- N: Monoatomic ions
- W: Oxides and peroxides
- N: Oxides and peroxides
- W: Hydrides
- N: Hydrides
- W: Hydroxides
- N: Hydroxides
- <R> W: Hydrogen halides and their salts. Nonmetal-nonmetal salts
- <R> N: Hydrogen halides and their salts. Nonmetal-nonmetal salts
- <R> W: Oxyacids
- <R> N: Oxyacids
- <R> W: Neutral salts derived from oxyacids
- <R> N: Neutral salts derived from oxyacids
- <R> W: Acid salts derived from oxyacids
- <R> N: Acid salts derived from oxyacids
- <R> W: Polyatomic ions
- <R> N: Polyatomic ions

Organic chemistry

- <R> Isomerism
- <R> Organic reactions

Nomenclature of organic compounds

- D: Linear and branched chains of alkanes
- N: Linear and branched chains of alkanes
- <R> D: Linear and branched chains of alkenes and alkynes
- <R> N: Linear and branched chains of alkenes and alkynes
- <R> D: Cycloalkanes/alkenes/alkynes and benzene derivatives
- <R> N: Cycloalkanes/alkenes/alkynes and benzene derivatives
- <R> D: Oxygen functional groups
- <R> N: Oxygen functional groups
- <R> D: Nitrogen functional groups
- <R> N: Nitrogen functional groups

◆ **Note:**

- <R> Denotes that option is only available in the registered version

Specifications

Description	CQZ2 Worksheet Generator is a Windows software to create, save, load and print worksheets of Chemistry for educational purposes.
Maximum amount of problems in a worksheet	500
Maximum amount of problems of the same type	99
Maximum amount of pages in a worksheet	199
Amount of elements in an exercise or question	Minimum 2 Maximum 26 (or less)
First problem number	Between 1 and 1999
First page number	Between 1 and 1999
Positions of the problems answers	4 positions: - No answers - Answers after each problem - Answers together at the end - Answers in a separate page
Positions of the page number	11 positions *: - No page numbering (1) - Up, down (2) - Left, center, right, inside, outside (5) (*) $1 + 2 \times 5 = 11$
Highlight colors for problem number	22 colors

Registered trademarks

- * VaxaSoftware and VaxaSoftware logo are trademarks of VaxaSoftware.
 - * Microsoft, Windows, Windows XP, Windows Vista, Windows 7, Windows 8, Windows 10 and logos are registered trademarks or trademarks of Microsoft Corporation in the United States of America and/or other countries.
 - * Adobe, Adobe logo, PDF and Reader are registered trademarks or trademarks of Adobe Systems Incorporated in the United States of America and/or other countries.
 - * PayPal and PayPal logo are registered trademarks or trademarks of PayPal Inc. and/or eBay Inc. in the United States of America and/or other countries.
 - * YouTube and YouTube logo are registered trademarks or trademarks of YouTube LLC. and/or Google Inc. in the United States of America and/or other countries.
 - * Google and Google logo are registered trademarks or trademarks of Google Inc. in the United States of America and/or other countries.
 - * Visa and Visa logo are registered trademarks or trademarks of Visa Inc. in the United States of America and/or other countries.
 - * Amex, American Express, Amex logo and American Express logo are registered trademarks or trademarks of American Express Company in the United States of America and/or other countries.
 - * MasterCard and MasterCard logo are registered trademarks or trademarks of MasterCard Incorporated and/or MasterCard Worldwide in the United States of America and/or other countries.
- All the other product names, company names or logos on this site/document are either trademarks or registered trademarks of their respective owners.