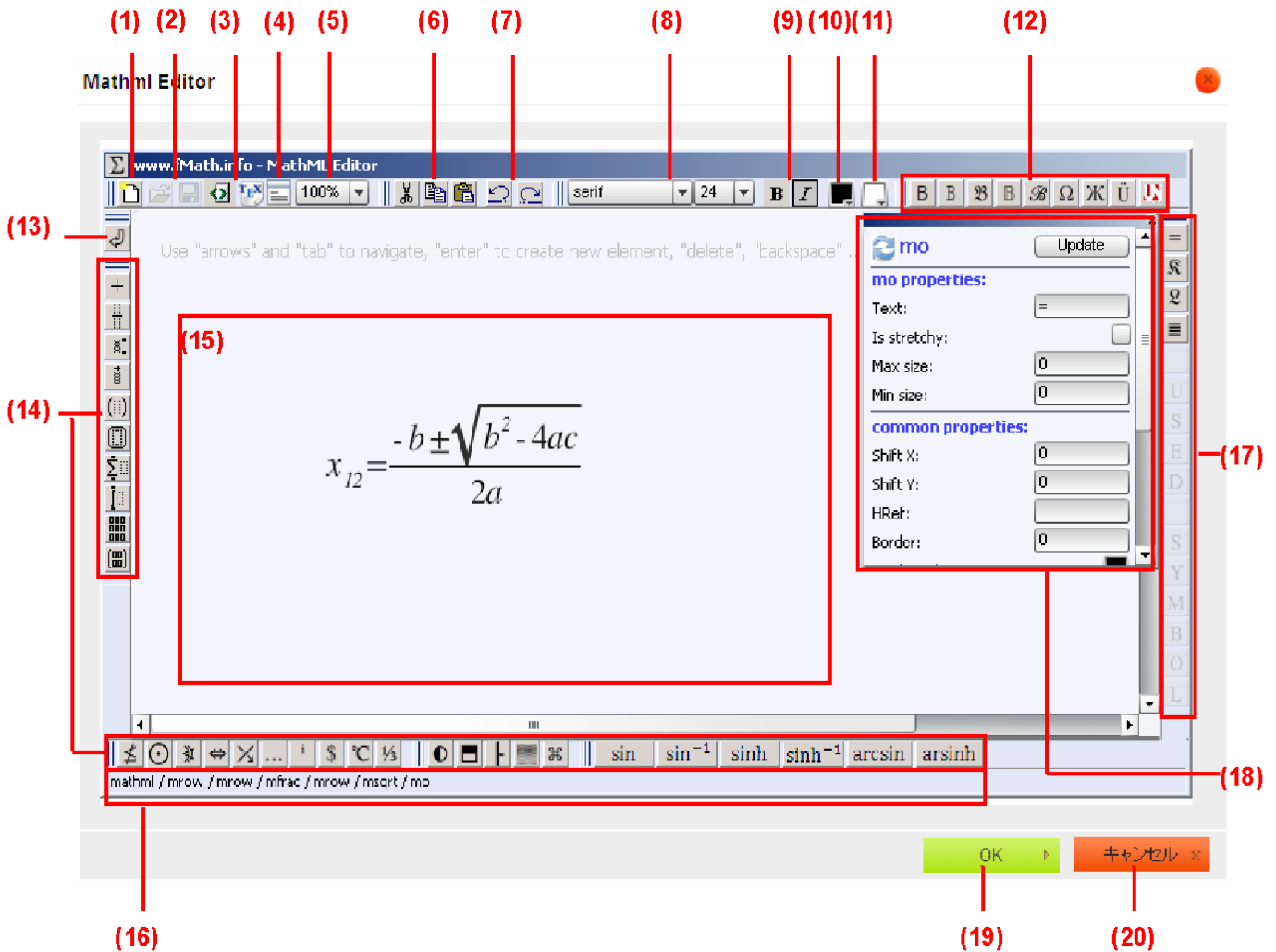


Using the fMath - MathML Editor

The fMath - MathML Editor correctly creates a mathematical formula that is difficult to express with just text.

■ MathML Editor window



(1) New Page

Discards the data currently being processed and returns the MathML Editor to the status it was in immediately after it was opened.

(2) Open/Save

This function cannot be used in this system. To insert a formula that you created using the editor into a document or text, click [OK].

(3) XML View / TEX View

Displays a formula in XML format or TEX format. When you click again, the screen returns to the normal display.

! Notes

Exercise care when editing and saving the mathematical formula in XML or TEX format. If you make a mistake during tag and text entry, the mathematical formula may be destroyed when you preview the formula.

(4) Properties

Opens the Property window.

(5) Zoom

Selects a display scale.

(6) Cut/Copy/Paste

Cuts, copies or pastes a selected area.

(7) Undo/Redo

Undoes or redoes the last operation.

(8) Font/Font Size

Changes the font or the font size in the selected area.

(9) Bold / Italic

Changes characters and symbols in the selected area to bold or italic. You can specify both options at the same time.

(10) Text Color

Changes the text color in the selected area.

(11) Background Color

Changes the background color in the selected area.

(12) Alphabet / Number

Opens the character selection window using the font that has been selected with the clicked button. You can enter using the character that you have selected in the character selection window. To close the character list window, click the [x] button at the top right position.

(13) Line Break

Opens the line break selection window. You can enter a line break of the button that you have clicked in the line break selection window. To close the line break selection window, click the [x] button at the top right position.

(14) Formula/Symbol

Opens the formula/symbol selection window that shows the options you have clicked and selected. You can enter a symbol (or a formula) of the button that you have clicked in the formula/symbol selection window. To close the formula/symbol selection window, click the [x] button at the top right position.

(15) Editing Area

This area displays the entered content.

(16) Status

Displays the XML hierarchy.

(17) Shortcut Toolbar

Sequentially creates the entries that you have clicked with the button. You can recreate an entry by clicking its button.

(18) Property Window

Displays and sets the property of an object at the cursor position.

(19) OK – only for CKEditor integration

Inserts the formula, you have created using the MathML Editor, into the document or text.

(20) Cancel – only for CKEditor integration

Discards the current process data and closes the MathML Editor window.

■ Creating a formula

Basically, you create a formula by combining the elements that you can enter using the alphabet, formula and symbol buttons.





To correct entries, press the [Delete] or [Back space] key. Use the [Delete] key to re-enter a single character, and use the [Back space] key to delete multiple characters. Their behavior differs depending on the cursor position. Refer to the examples in "Entering or correcting a formula".

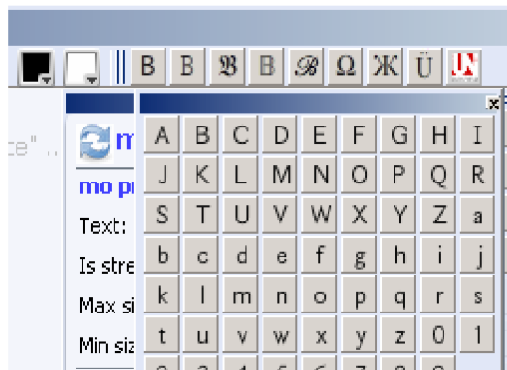
■ Entering or correcting a formula



The following explains how to use the MathML Editor using specific examples.

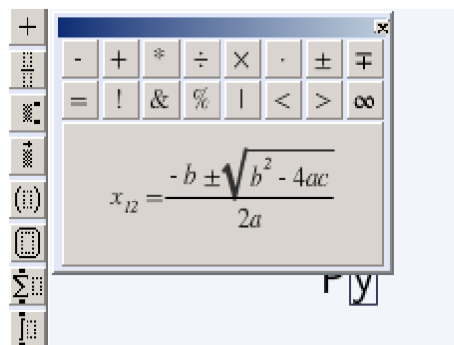
Entering four arithmetic operations

Input example: $Py = Pm \times 12$

1. Click  to open the MathML Editor.
 - The "." marker that appears by default indicates that you can enter a variable, a constant, an arithmetic symbol, or another formula.
2. Click  to enter an alphabet or a number.
 - The alphabet and number input window appears.
3. Click  and .



4. Click .
 - The arithmetic symbol list window appears.
5. Click .
 - The symbol "=" is inserted on the right-hand side of "Py".



6. Enter "Pm x 12" by repeating Steps 2 to 5.

- "Pm x 12" is inserted on the right-hand side of "Py=".
- If you have a simple formula as described below, you can enter it directly from the keyboard. When you use the direct input, disable the Japanese language input system.

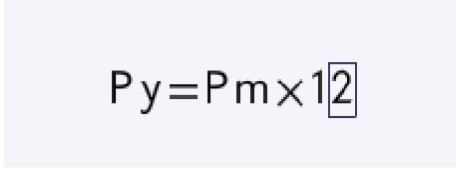
Correcting four arithmetic operations

Correction example: $Py=Pm \times 12$

↓
 $Py=12 \times Pm$

1. Press the [Back space] key three times.

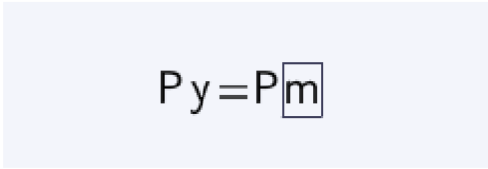
- "x 12" is deleted.



$Py=Pm \times 12$

2. Press the [<-] key twice.

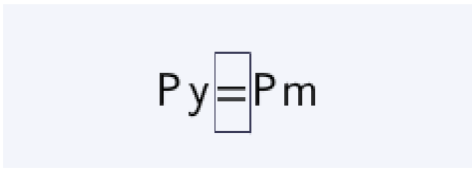
- The cursor shifts to the position after symbol "=".



$Py=Pm$

3. Enter "1", "2", and "x".



- "12x" is inserted after "=".

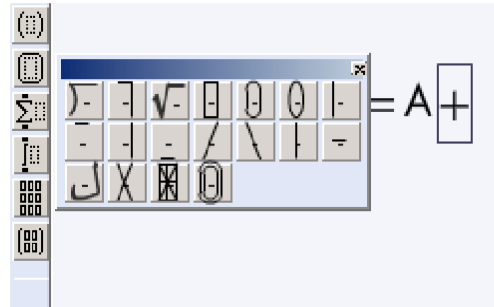


$Py= Pm$

Entering a formula including functional symbols

Input example: $X = A + \sqrt{B}$

1. Enter "X=A+" by following the procedure described in "Entering four arithmetic operations".
2. Click .
 - The formula and symbol input window appears.
3. Click .
 - Symbol "√" is inserted after "+".



4. Click "...".
 - The cursor status changes to enable input.
5. Enter "B".

Notes

- If the cursor shows "√..." in Step 5 and if you enter "B", this "B" is entered after "√".
Delete the character "B" by pressing the [Back space] key, and repeat the process from Step 4.

Correcting a formula including functional symbols

Click and place the cursor at the desired position, and correct the formula.



Notes

- You cannot correct a functional symbol such as " $\sqrt{}$ " by clicking it directly. To correct a functional symbol, click and select an argument around the symbol, enclose the symbol by moving the cursor using the " \uparrow ", " \leftarrow " and " \rightarrow " keys, then correct the symbol.

- To correct an argument of a function formula that already exists

$$X = A + \sqrt{B}$$

↓

$$X = A + \sqrt{(B+C)}$$

- Click "B".

- The character "B" is enclosed in the cursor area.

- Correct "B" to "(B+C)".

$$X = A + \sqrt{B}$$

- To enter in the same hierarchy as the function formula that already exists

$$X = A + \sqrt{B}$$

↓

$$X = A + \sqrt{B} + C$$

- Click "B".

- The character "B" is enclosed in the cursor area.

- Press the " \uparrow " key.

- Symbol " $\sqrt{}$ " is enclosed in the cursor area.

$$X = A + \sqrt{B}$$




- Enter "+" and "C".

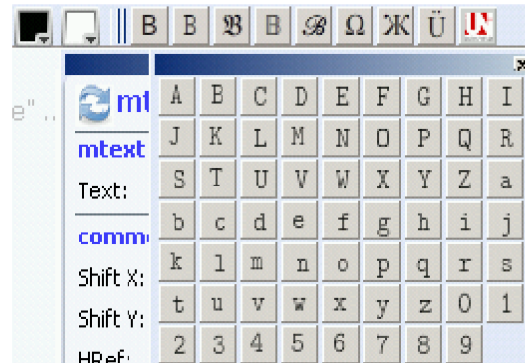
$$X = A + \sqrt{B}$$


An example to enter a complex formula


Enter a quadratic formula.

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$


1. Click  to open the MathML Editor.
2. Click  to enter an alphabet or a number.
 - The alphabet and number input window appears.
3. Click .
 - "." changes to "x".




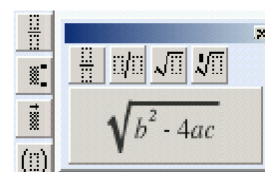
4. Click .
 - The arithmetic symbol list window appears.

5. Click .
 - The symbol "=" is inserted on the right-hand side of "x".

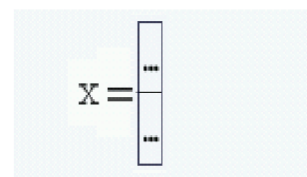


6. Click .
 - The arithmetic symbol list window appears.

7. Click  in the list window.
 - "..." is inserted on the right-hand side of "x=".



8. Click the denominator, and enter "2" and "a".



9. Click the numerator, and enter "-" and "b".

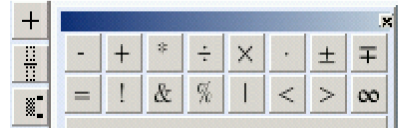
$$x = \frac{-}{2a}$$

10. Click $+$.

- The arithmetic symbol list window appears.

11. Click \pm .

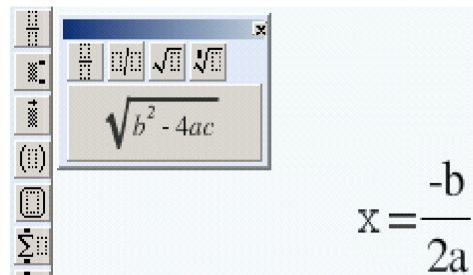
- " \pm " is inserted on the right-hand side of "-b".



12. Click $\sqrt{\quad}$.

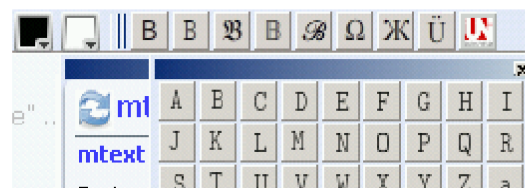
13. Click $\sqrt{\quad}$.

- " $\sqrt{\quad}$ " is inserted on the right-hand side of " \pm ".



14. Click "...".

15. Click B .



16. Click b .

- If you have failed to correct it as shown at right, repeat the correction process from the beginning.

$$x = \frac{-b \pm \sqrt{b}}{2a}$$

■ **More information:** www.fmath.info