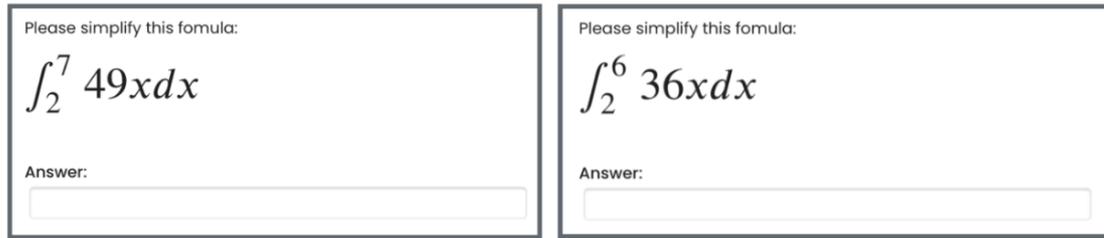


# Calculated simple question type



An example of Calculate simple question type

## Overview:

This guide will show you how to create a Calculated simple question type.

## What to know:

The features of Calculated simple question type is listed below.

1. It supports random variables into the questions. As can be seen from the example above, one student see the question as the first picture, while another student see the question as the second picture. It is this question uses random variables.
2. It supports answer tolerance and the use of units.

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**Step 1: Access the Quiz activity where you want to create the question**

In your module area/course, click the link of the Quiz activity where you want to create a question.

▼ **Topic 5**

 **Example Quiz** Receive a grade

**Opened:** Wednesday, 8 November 2023, 1:31 PM

Note: If an appropriate Quiz activity doesn't exist in your module area/course, please see [Add a quiz](#) for details of how to create one.

Step 2: Click the 'Questions' tab.

1. Click the 'Questions' tab.

 **Example Quiz**

Quiz   Settings   **Questions**   Results   Question bank   More ▼

Receive a grade

**Opened:** Wednesday, 8 November 2023, 1:31 PM

Preview quiz

Attempts allowed: 1

Step 3: Add a new question

1. On the following page, click the 'Add' link.
2. Click the 'a new question' link in the dropdown menu.

# Example Quiz

Quiz Settings Questions Results Question bank More ▾

## Questions

Questions: 1 | This quiz is open

Maximum grade  Save

Repaginate Select multiple items Total of marks: 1.00

Page 1

Shuffle ?

1 The Loch Ness Monster is a type of? The Loch Ness Monster ... Always

**Add** ▾

- + a new question
- + from question bank
- + a random question

### Step 4: Choose a question type

1. Locate and select the Calculated simple question type from the pop-up window.
2. Click the 'Add' button.

## Choose a question type to add

SHORT ANSWER

- Numerical
- Essay
- All-or-Nothing Multiple Choice
- Calculated
- Calculated multichoice
- Calculated simple**
- CodeRunner
- Drag and drop into text
- Drag and drop markers
- Drag and drop onto image
- Drag-and-Drop Matching

A simpler version of calculated questions which are like numerical questions but with the numbers used selected randomly from a set when the quiz is taken.

**Add** Cancel

## Step 5: Give a question name

Give a question name in the 'Question name' setting.

Question name ▲

## Step 6: Give the question text

Type in the question in the 'Question text' box, such as the example in the screen shot below.

The special Mathematical formulas and symbols can be written in Latex/Tex. You either edit the formula in Latex editors, or click the icon on the top left of the text box and click the icon highlighted icons in the screen shot to edit Latex formula.

Hint: The random variables, such as variable a and b, need to be covered with '{}', so that the system knows it is a random variable.

Question text ▲

Please simplify the fomula:

$$\int_a^b (x+1) dx$$

## Step 7: Set up the full mark and general feedback (optional)

If you do not need to change full mark and give general feedback, you can skip this step.

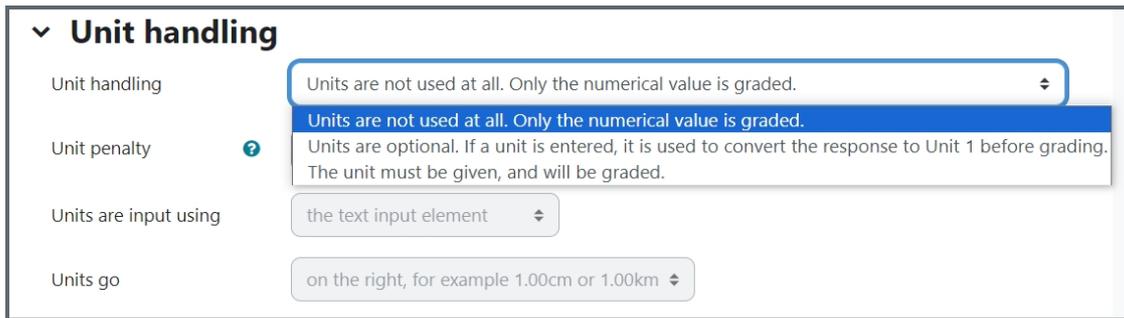
1. Under the 'Default mark', you can change the full mark of this question from 1 mark to other mark.
2. Under the 'General feedback', you can add feedback that every student will see.



The 'Unit handling' section controls whether units will be marked, and if yes, how it will be marked.

(If you do not need to mark units, you can skip this step)

1. 'Unit handling' setting controls whether units will be marked. By default, units are not marked.
2. If choosing the second or third option in 'Unit handling' setting, the following settings will be enabled.
  1. Unit penalty
    1. By default, it is 10% penalty.
    2. By default, it is the penalty depends on the grade that the student get in this question. You can change it to depend on the grade of the full mark of the question.
  2. Units are input using
    1. The unit can be input by students, selected in a multiple choice question or a drop-down menu.
  3. Units go
    1. the unit goes to the right or left of the answer.



**Unit handling**

Unit handling: Units are not used at all. Only the numerical value is graded.

Unit penalty: Units are optional. If a unit is entered, it is used to convert the response to Unit 1 before grading. The unit must be given, and will be graded.

Units are input using: the text input element

Units go: on the right, for example 1.00cm or 1.00km

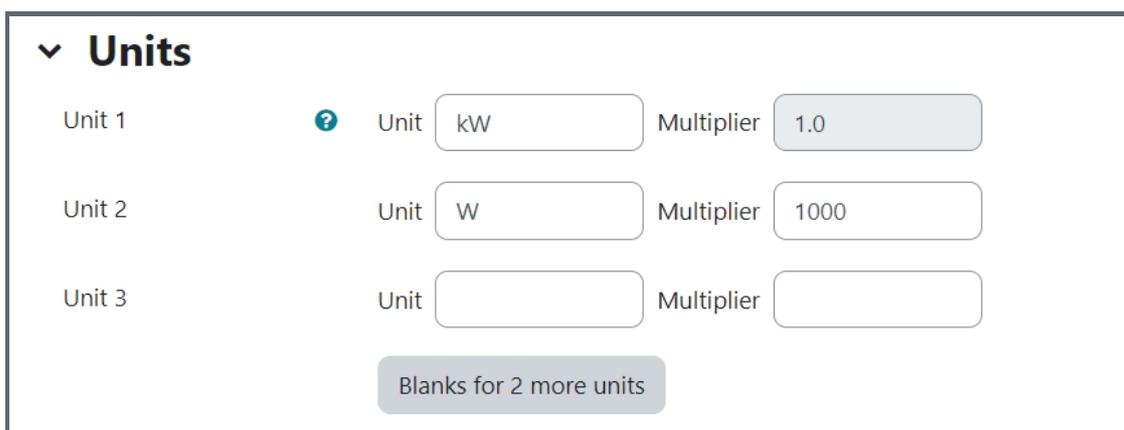
## Step 11: Define units (optional)

Define the correct units in 'Units' section. (If you do not need to mark units, you can skip this step)

e.g. kW is a correct unit. As it is the unit in the question text, the answer does not need to

However, W is also a correct unit. When using this unit, the answer need to be timed with the multiplier 1000, since  $1\text{kW} = 1000\text{W}$ .

(If you do not need to add more answers, you can skip this step.)



**Units**

Unit 1: Unit kW Multiplier 1.0

Unit 2: Unit W Multiplier 1000

Unit 3: Unit Multiplier

Blanks for 2 more units

## Step 12: Add random variables

Click the 'Find the wild cards {x} present in the correct answer formulas' button to add random variables.

Find the wild cards {x..} present in the correct answer formulas

There must be at least one wild card {x..} present in the correct answer formulas

### Step 13: Define random variables

1. Click the 'Wild cards parameters used to generate the values' tab.
2. In the newly appeared area below the tab, set up the parameters, including the minimum and maximum value and decimal places. If you have more than more random variables, please define them one by one.

Find the wild cards {x..} present in the correct answer formulas

Wild cards parameters used to generate the values

Param {b}

Range of Values

1.0

10.0

Decimal places

0

Param {a}

Range of Values

1.0

10.0

Decimal places

1

### Step 14: Create random variables

1. Select a number in 'Generate'+ 'new set(s) pf wild card(s) values' to create a number of random variables.
2. Click the 'Generate' button to create random variables.

Generate

Display

10

20

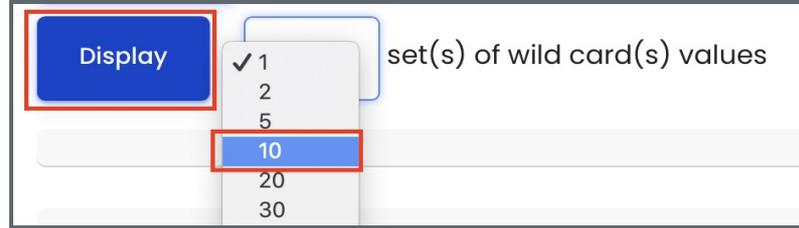
30

new set(s) of wild card(s) values

set(s) of wild card(s) values

### Step 15: Display random variables

1. Select a number in 'Display'+ 'new set(s) pf wild card(s) values' to create a number of random variables.
2. Click the 'Display' button to create random variables.



## Step 16: View random variables

1. Click the 'Wild card(s) values' tab to view random variables.
2. In the newly appeared area, you can view the value of random variables.

Generate 10 new set(s) of wild card(s) values

Display 10 set(s) of wild card(s) values

Wild card(s) values

**Set 10**  $(\{b\}-\{a\}) * (\{a\}...$

$(8-4.7) * (4.7+8+2) / 2 = 24.25$   
 Correct answer : 24.25 inside limits of true value  
 Min: 24.01245 --- Max: 24.49755

**Set 9**  $(\{b\}-\{a\}) * (\{a\}...$

$(3-9.1) * (9.1+3+2) / 2 = -43.00$   
 Correct answer : -43.00 inside limits of true value  
 Min: -43.43505 --- Max: -42.57495

## Step 17: View random variables

Click the 'Show more...' button at the end of the displayed random variables.

**Set 10**  $(\{b\}-\{a\}) * (\{a\}...$

$(8-4.7) * (4.7+8+2) / 2 = 24.25$   
 Correct answer : 24.25 inside limits of true value  
 Min: 24.01245 --- Max: 24.49755

Show more...

## Step 18: Edit random variables (2)

1. You can type in the values of random variables in the place you want.
2. Click 'Update the wild card(s) values' button at the top of the displayed random variables to update the value.

Wild card(s) values ▲

! Update the wild card(s) values

Wild card {b} \*

Wild card {a} \*

**Set 10**  $((b)-\{a\}) * \{a\} \dots$

$(8-4.7) * (4.7+8+2) / 2 = 24.25$   
 Correct answer : 24.25 inside limits of true value  
 Min: 24.01245 --- Max: 24.49755

Wild card {b} \*

Wild card {a} \*

## Step 19: View the random variables

The 'Unit handling' section controls whether units will be marked, and if yes, how it will be marked.

(If you do not need to mark units, you can skip this step)

1. 'Unit handling' setting controls whether units will be marked. By default, units are not marked.
2. If choosing the second or third option in 'Unit handling' setting, the following settings will be enabled.
  1. Unit penalty
    1. By default, it is 10% penalty.
    2. By default, it is the penalty depends on the grade that the student get in this question. You can change it to depend on the grade of the full mark of the question.
  2. Units are input using
    1. The unit can be input by students, selected in a multiple choice question or a drop-down menu.
  3. Units go
    1. the unit goes to the right or left of the answer.

Unit handling ▲

Unit handling
 

Units are not used at all. Only the numerical value is graded.  
 Units are optional. If a unit is entered, it is used to convert the response to Unit 1 before grading. The unit must be given, and will be graded.

Unit penalty ?

0.1  
 as a fraction (0-1) of the response grade ↕

Units are input using
 

the text input element ↕

Units go
 

on the right, for example 1.00cm or 1.00km ↕

## Step 20: Define units (optional)

Define the correct units in 'Units' section. (If you do not need to mark units, you can skip this step)

e.g. kW is a correct unit. As it is the unit in the question text, the answer does not need to

However, W is also a correct unit. When using this unit, the answer need to be timed with the multiplier 1000, since  $1\text{kW} = 1000\text{W}$ .

(If you do not need to add more answers, you can skip this step.)

The screenshot shows a 'Units' configuration window. At the top is a dropdown menu labeled 'Units'. Below it are three rows for 'Unit 1', 'Unit 2', and 'Unit 3'. Each row has a unit selection box and a multiplier input field. Unit 1 has 'kW' selected and '1.0' in the multiplier field. Unit 2 has 'W' selected and '1000' in the multiplier field. Unit 3 has both fields empty. A blue button at the bottom reads 'Blanks for 2 more units'.

### Step 21: Save the question

Click 'save changes and continue editing' or 'save changes' button to save the question.

The screenshot shows a panel with three buttons. The top button is blue and labeled 'Save changes and continue editing'. Below it are two more buttons: a blue 'Save changes' button and a white 'Cancel' button.

#### Tips:

The random variables, such as variable a and b, need to be covered with '{}', so that the system knows it is a random variable.

Online URL: <https://knowledgebase.xjtlu.edu.cn/article/calculated-simple-question-type-139.html>