## Calculated simple question type

🖹 139 🔘 Yezi Yang 🛗 Mon, Nov 20, 2023 🖿 STEM

Please simplify this fomula:	Please simplify this fomula:
$\int_{2}^{7} 49x dx$	$\int_{2}^{6} 36x dx$
	52
Answer:	Answer:

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

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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
<b>Opened:</b> 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				
<b>Opened:</b> Wednesday, 8 November 2023, 1:31 PM				
Preview quiz				
Attempts allowed: 1				

Sten 3. Add a new question	
Step J. Add a new question	1

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

N	Example Quiz									
Quiz	Sett	tings	Questions	Results	Question bank	More 🗸				
Ques	stio	ns								
Questions	s: 1   Th	is quiz	is open				Maxir	num grade	e 100.00	Save
Repagir	nate	Select	multiple items						Total of m	narks: 1.00
ø									🗆 Shuf	fle 🕜
Page '	1									Add 🗸
	1 <b>:</b> Ξ	🗘 The	e Loch Ness Mo	nster is a t	ype of? The Loch I	Ness Monster .	·· Always	🕂 an	ew question	
									m question ba	ank
								🕇 ara	andom questi	on

### 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.



### Step 5: Give a question name

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

	Question name	A	Calculated simple question
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### 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.

		Please simplify the fomula:
		\$\$\int_{a}^{b}(x+1)dx\$\$
Question text	A	

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.

Default mark	0	1
General feedback	0	
		Words:7

### Step 8: Give the correct answer

1. You can type in correct answer in 'Answer' section.

For variables with random values, such as variable 'a' and 'b' here, it need to be covered within '{}', so that ICE recognises them as variables.

2. Define the grade of this answer. If it is the correct answer, it is 100% in grade.

You also need to add error (so called 'tolerance') and a grade to this answer.

<ul> <li>Answers</li> </ul>	
Answer 1 formula =	({b}-{a})*({a}+{b}+2)/2
	Grade 100%
Tolerance ±	0.01 Type Relative \$
Answer display	2 <b>\$</b> Format decimals <b>\$</b>
Feedback	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$
	<b>%</b> % © <b>▲ ♥ ■ H:P ◇ ■ ■</b>
	Words:0

### Step 9: Give partially correct answers (optional)

You can also add partially correct answers with the relevant grades and feedback (optional). (If you do not need to it, you can skip this step.)

- 1. Click the 'Blanks for 1 more answers' button
- 2. Add answer, relevant grade, etc. in the same way as above.

Blanks for 1 more answers

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 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.
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 1kW = 1000W.

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

<ul> <li>Units</li> </ul>		
Unit 1	0	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 paramete	rs used to generate the values
Param { <b>b</b> }	
	Range of Values
	1.0
Range of Values	-
	10.0
Decimal places	0
Param { <b>a</b> }	
	Range of Values
Papas 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.



### 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		
<b>Set 9</b> ({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		•
1	Update the wild card(s) values	
Wild card { <b>b</b> }*		
Wild card { <b>a</b> }*		
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	
Wild card { <b>b</b> }*		
Wild card { <b>a</b> }*		

### Step 19: View the random variables

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  - 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 resp The unit must be given, and will be graded.	onse to Unit 1 before grading.
Unit penalty ⑦	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 1kW = 1000W.

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

Units	•
linit 1	kW
onit	1.0
Unit 2	w
	1000
Unit 3	
	Blanks for 2 more units

### Step 21: Save the question

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

Save changes and continue editing			
Save changes	Cancel		

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