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Numerical Value Randomization in Moodle Platform Based Online Examination

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We can realize randomization in numerical problems using "Calculated question" type in the Moodle based platforms.

1. **"Calculated question" in LMS**

   Step 1: "Create a new question" in question bank/ Add "a new question" in quiz. Select "Calculated". Give a question name, say Q1

   Step 2: Write the question in the "Question text"

   Eg: A rectangle with length {a} m and breadth {b} m will have an area of ----------m^2 (Correct to two decimal places).

   The variables in flower brackets are the ones that are going to take different values for instantiations. They are called "Wild Cards" You may use the down arrow in the top portion of the "Question text" region to get more features for formatting the question text.

   Step 3: Keep Default mark as "1" (Marks for the correct answer). You can change it here or in the quiz if required.

   Step 4: Give "answer 1 formula" as {a}*{b} (formula for the area of rectangle). Grade field can be set as 100%

   Step 5: By default tolerance limit is 0.01 (1%). If you wish, you can change. Answer display format may be set a 2 decimals. Click on "Save Changes"

   Step 6: Select option for wild cards as "will use the same existing private data set as before" Select "Do not Synchronize". Click on "Next Page". Select the minimum value, maximum value, decimal place and distribution of the wild cards. Select "Forced generation of all wild cards". "Add" new sets of wild cards, say 30. You can "Display" the 30 and check answers to all the 30 cases, if required.

   Step 7: You may preview the question now. Note that in each preview you will see different numerical values (actually one of the 30 cases saved). Click "save changes"

   For more details, you may refer the video
   https://www.youtube.com/watch?v=9nAKlcwFNos

   To get all the details of "Calculated question", you may refer the page given
   https://docs.moodle.org/39/en/Calculated_question_type

We can realize randomization in multiple choice numerical problems using "**Calculated Multiplechoice question**" type in the Moodle based platforms

2. "Calculated Multiplechoice question" in LMS

Follow the procedure similar to that of "Calculated Question"

Eg: A rectangle with length {a} m and breadth {b} m will have an area of ----------m^2 (Correct to two decimal places).
In the field "One or Multiple Answers" select "One Answer Only" . You may choose "Multiple Answers Allowed" if your question has multiple answers
{={a}*{b}}　　　　Set　Grade as 100%
{={a}/{b}} Set　Grade as Grade-none
{={a}+{b}}　　　　Set　Grade as Grade-none
{=2*({a}+{b})}　Set　Grade as Grade - none
Note that the answer should be within flower brackets and should have "equal to" sign. If your question has two answers, weightage may be given as 50% to each correct answer.

Remaining all steps are similar to that of "Calculated Question".

For more details refer https://docs.moodle.org/39/en/Calculated_multichoice_question_type