Numeric Entry Question Type: Tolerances & Significant Figures

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Most questions in Smartwork are set to grade with a +/-2% tolerance, although specific questions may be authored with a larger tolerance. Any number within that tolerance window is accepted as correct regardless of the number of sig figs, however answers in Smartwork are always calculated and displayed to the correct number of significant figures to model the appropriate behavior for students. Any question that **does** grade based on significant figures will have that called out clearly for the students in the directions.

Tolerance and significant figure settings can be changed on a question-by-question basis by the instructor. This is done by customizing the question and must be done before the question is assigned. Go here to learn more about changing these settings in a custom question.

Here are some additional tips to students to ensure accurate grading:

- In order to maximize the possibility that students' answers fall within the 2% tolerance, they should not round off values until the final answer is determined. This is especially important when solving problems that have several mathematical steps. Rounding off at every step introduces too much error and can result in the final answer not being within the accepted range.
- Although a specific problem may not request an answer be expressed with appropriate significant figures, it is always good practice to do so. In general, keeping several more significant figures in each step than are necessary in the final answer will help ensure the answer falls within the proper tolerance. For example, if the final answer will require 3 significant figures, students should keep intermediate step answers to at least 5 significant figures. This helps to minimize the chances that the final answer would be outside