

The mathematics exercises are used to evaluate prospective participants of the NIST Office of Weights and Measures (OWM) Fundamentals of Metrology seminar because a minimum level of mathematics skills are required to be successful in the seminar. Successful completion of the exercises provides NIST OWM staff with a level of confidence that the prospective participant possesses those mathematical skills. Completed mathematical exercises are graded and feedback is provided to the prospective seminar participant so that refresher training can be obtained to bolster any weak areas that are identified. A metrologist, regardless of the specific measurement discipline, must perform a wide variety of mathematical calculations to provide their customer with a measurement result and uncertainty based on the measurement equation. The expectation of a metrologist is that they provide the correct answer 100 % of the time. To successfully complete the mathematics exercises and achieve approval to participate in the Fundamentals of Metrology Seminar, the participant must achieve a score of at least 70 % correct.

The mathematics exercises evaluate skills in the following areas:

- Orders of Operations, Powers and Roots
- Positive and Negative Numbers
- Metrology Related Examples (using typical measurement equations and variables)
- Units, Conversions and related Problems.

Each of these skills are extremely important to the field of metrology.