

Sample Questions

Below you will find some example questions to help you prepare for the SAWE Certification Exam. Some questions will require calculations.

All questions are multiple choice and have 4 possible answers, only 1 of which is correct.

1. A weight removed aft of the vehicle's CG will cause the CG to move in which direction?
2. A calculated weight may be determined from which information?
3. What is the Moment of Inertia (MOI) in the X direction about the bracket's CG (see picture P-004 and table T-007)? Assume a density of 8.0 g/cm^3 . The diameter of the hole is $d=5.0 \text{ cm}$. Use metric measures.
4. What contributes to a lightweight design?
5. Which of the following is a mandatory part of a Request for Proposal (RFP) to potential suppliers/risk sharing partners?
6. An assembly is composed of three components. Each component is weighed separately with the following readings and 3-sigma uncertainties. Given this information, what is the total weight and combined 3-sigma uncertainty for the weight of the assembly?
7. How should an ideal weighing be performed?
8. A random sample of twenty mass measurements is listed below. What is the sample mean and standard deviation?
9. Which parts are often not modeled but might have an influence on the Mass Properties of the component?
10. True or false: Mass Properties Engineering uses similar methodologies as Systems Engineering? ([for descriptions of Systems Engineering see Reference Documents](#))
11. The figure (see picture P-008) is a boxplot of volumetric measurements. What are the approximate values of the first quartile and median of the data? ([for descriptions of Systems Engineering see Reference Documents](#))