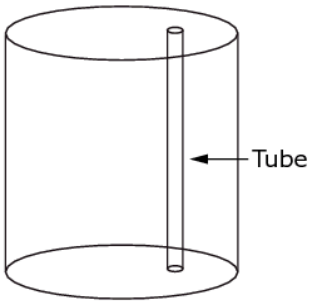
MAFS.912.G-MG.1.3	Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).
Item Types	Editing Task Choice – May require choosing a statement in a description. Equation Editor – May require expressing a numerical value or creating an equation that models a given situation. GRID – May require constructing a figure. Hot Text – May require rearranging statements about a solution or a model. Open Response – May require explaining a model.
Clarification	Students will apply geometric methods to solve design problems.
Assessment Limits	Items may require the student to use knowledge of other Geometry standards. Items that use volume should not also assess G-GMD.1.3 or G-MG.1.1.
Stimulus Attribute	Items must be set in a real-world context.
Response Attributes	Items may require the student to interpret the results of a solution within the context of the modeling situation. Items may require the student to apply the basic modeling cycle. Items may require the student to use or choose the correct unit of measure.
Calculator	Neutral

Sample Item	Item Type
	Equation Editor

The trunk of a palm tree has cylindrical tubes that carry water. Each tube is 0.0003 meters wide. One of the tubes in a palm tree trunk is shown.



Palm Tree Trunk

A. Using the diagram as a model, approximately how many tubes could fit in a palm tree trunk with a diameter of 0.5 meters?

B. The tubes in a palm tree are between 20 to 21 meters long. What is the approximate volume, in cubic meters, of one tube?

A.

B.