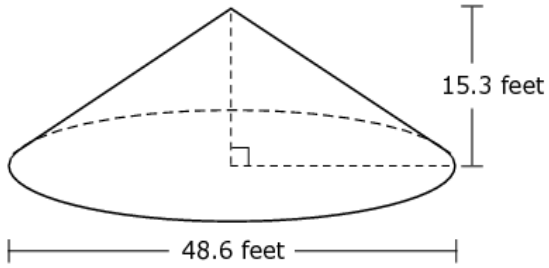
MAFS.912.G-GMD.1.3	Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.
Item Types	Equation Editor – May require expressing a numeric value or creating an expression. Multiple Choice – May require selecting from choices. Multiselect – May require identifying a value or a statement. Open Response – May require drawing a conclusion about a given situation.
Clarification	Students will use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.
Assessment Limits	Items may require the student to recall the formula for the volume of a sphere. Items may require the student to find a dimension. Items that involve cones, cylinders, and spheres should require the student to do more than just find the volume. Items may include composite figures, including three-dimensional figures previously learned. Items may not include oblique figures. Items may require the student to find the volume when one or more dimensions are changed. Items may require the student to find a dimension when the volume is changed.
Stimulus Attributes	Items must be set in a real-world context. Items may require the student to apply the basic modeling cycle.
Response Attributes	Items may require the student to use or choose the correct unit of measure. Items may require the student to apply the basic modeling cycle.
Calculator	Neutral

Sample Item	Item Type
	Equation Editor

As phosphate is mined, it moves along a conveyor belt, falling off of the end of the belt into the shape of a right circular cone, as shown.



A shorter conveyor belt also has phosphate falling off of the end into the shape of a right circular cone. The height of the second pile of phosphate is 3.6 feet shorter than the height of the first. The volume of both piles is the same.

To the nearest tenth of a foot, what is the diameter of the second pile of phosphate?