

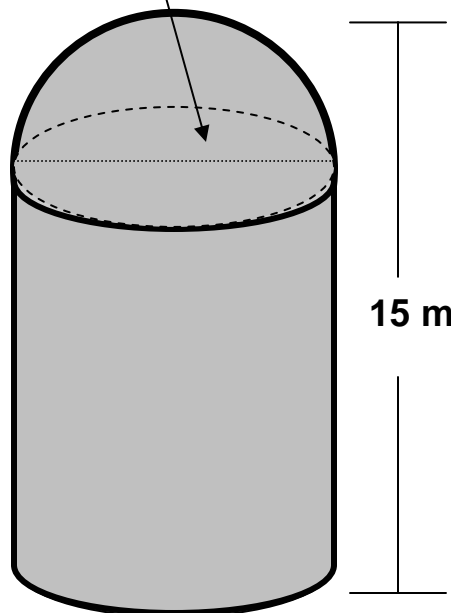
PROBLEM-OF-THE-DAY: ALGEBRA 1**WEEK:** October 30 to November 2**DAY:** Wednesday

RISD Objective: Given a solid figure (including composite figures) and/or a word problem, students will find the volume, applying it as necessary.

PROBLEM #50

Find the volume of the composite figure below, using the following dimensions:

$d = 4$ m; total height = 15 m.



If the figure on the left represents a farm silo, how much grain could be stored? (Grain cannot be stored in the dome.)

Grain is sold at \$25.00 per cubic meter. How much is the grain in this silo worth?

MODEL SOLUTION #50

Formula for cylinder: $\pi r^2 h$

Formula for sphere: $\frac{4}{3} \pi r^3$

Hemisphere is half of sphere

(Height of the cylinder → 15 – 2)

Volume of cylinder $(3.14)(2)^2(13) = 163.28 \text{ m}^3$

Volume of sphere $\frac{4}{3}(3.14)(2)^3 = 33.49 \text{ m}^3$

Volume of hemisphere $33.49 \text{ m}^3 \div 2 = 16.75 \text{ m}^3$

Volume of the ENTIRE silo $163.28 + 16.75 = 180.03 \text{ m}^3$

Volume of cylinder (where grain is stored) = 163.28 m³

Grain Value = (number cubic meters) X (price per cubic meter)

Grain Value = 163.28 x \$25 = \$4082 for the grain