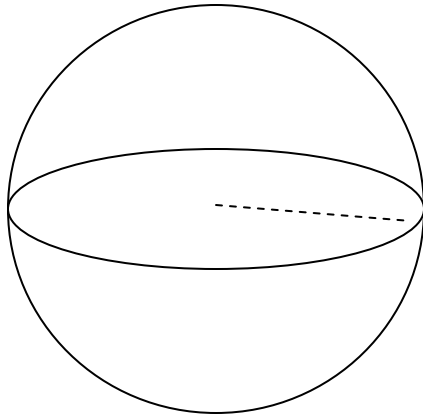
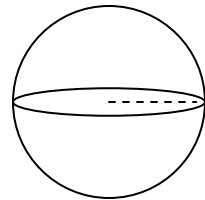


PROBLEM-OF-THE-DAY: ALGEBRA 1**WEEK:** October 30 to November 2**DAY:** Friday

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

PROBLEM #52

The mean radius of Earth is approximately 3,963 miles. The mean radius of Mercury is 1,509 miles. Find the volume of both Earth and Mercury. About how many times larger is Earth than Mercury? Keep answers in terms of π .

Earth**Mercury**

MODEL SOLUTION #52

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

Volume of Earth → $\frac{4}{3} \cdot \pi \cdot (3963)^3 = 82,987,169,796\pi \text{ mi}^3$

Volume of Mercury → $\frac{4}{3} \cdot \pi \cdot (1509)^3 = 4,581,486,972\pi \text{ mi}^3$

**To compare the two planets, I will divide:
the volume of the Earth by the volume of Mercury.**

$$82,987,169,796\pi \div 4,581,486,972\pi \approx 18$$

Therefore, the Earth is about 18 times bigger in volume than Mercury.