

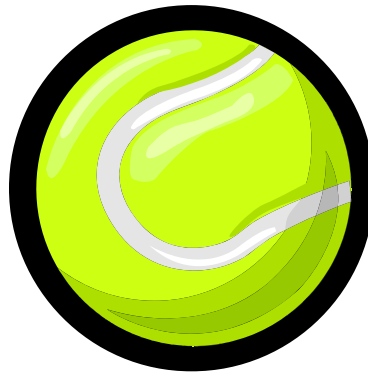
PROBLEM-OF-THE-DAY: ALGEBRA 1**WEEK:** October 22 to October 26**DAY:** Tuesday

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

PROBLEM #45

How much material is needed to cover a tennis ball that has a diameter of 3 inches? If the material cost \$0.02 per square inch, how much will it cost to purchase the material to cover the tennis ball? Explain your work.

$$SA = 4\pi r^2$$



MODEL SOLUTION #45

First, we need to find the radius to find the surface area of the tennis ball.

Diameter = 3 inches, so radius = 1.5 inches

$$SA = 4(\pi)(1.5)^2$$

Now, replace $\pi = 3.14$

$$SA = 4(3.14)(1.5)^2$$

$$SA = 28.26in^2$$

28.26 in² of material is needed to cover a tennis ball that has a diameter of 3 inches.

Since, the material cost is \$0.02 per square inch, then

$$\text{Cost} = (28.26)(0.02)$$

$$\text{Cost} = \$0.5652$$

Therefore, the cost to purchase the material to cover the tennis ball is about \$0.56.