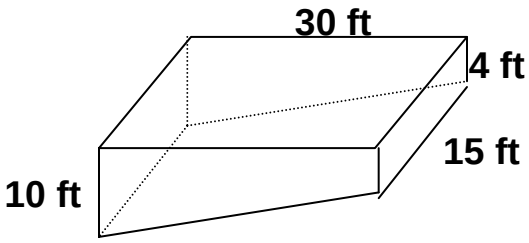
PROBLEM-OF-THE-DAY: ALGEBRA 1

WEEK: October 30 to November 2 **DAY:** Thursday

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

PROBLEM #51

A common design for swimming pools is for the depth to change gradually from the shallow end to the deep end. Use the dimensions shown in the diagram below to find the volume of the pool.



If water costs $0.05 per cubic foot, how much will it cost to fill the swimming pool?

MODEL SOLUTION #51

Volume of Prism = B*h*

B is the area of the trapezoid➔ $(\frac{b_1 + b_2}{2})h$

h is the distance between the trapezoids.

Area of the trapezoid➔ $(\frac{4+10}{2}) \bullet 30$ **= 210 ft^2**

V = 210 • 15

V = 3150 ft^3

So, the volume of the swimming pool is 3150 ft^3

Cost to fill pool = (cost per ft^3 of water) X (number of ft^3 of water)

Cost = 3150 • 0.05 = 157.50

It costs $157.50 to fill the pool.