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

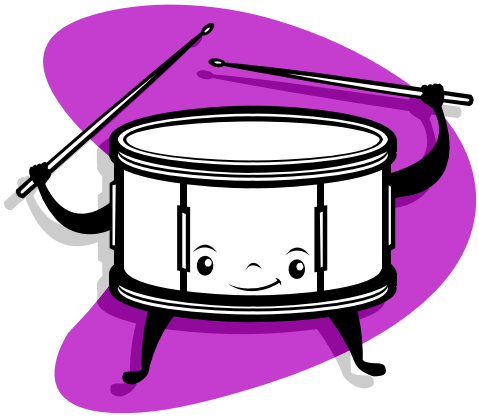
**RISD Objective:** Given a solid figure (including composite figures) and/or a word problem, students will find the surface area, applying it as necessary.

---

**PROBLEM #44**

**How much material is needed to build a metal drum that has a radius of 0.45 m and a height of 1.2 m? If the material costs $123.50 per square meter, how much will it cost to purchase the material to build the drum? Show your work.**

$$SA = 2\pi rh + 2\pi r^2$$



**MODEL SOLUTION #44**

**First, we need to find the surface area of the drum.**

$$SA = 2(\pi)(0.45)(1.2) + 2(\pi)(0.45)^2$$

**Now, replace** $\pi = 3.14$

$$SA = 2(3.14)(0.45)(1.2) + 2(3.14)(0.45)^2$$
$$SA = 3.3912 + 1.2717$$
$$SA = 4.66m^2$$

**It is needed 4.66 $m^2$ to build a metal drum that has a radius of 0.45 m and a height of 1.2 m.**

**Since the material costs $123.50 per square meter, then**

**Cost = (4.66)(123.50) = $575.51**

**Therefore, the cost to purchase the material to build the drum is $575.51.**