Calculus Project - Volumes of Revolution

Make a physical model of a Volume of Revolution about the x or y-axis.
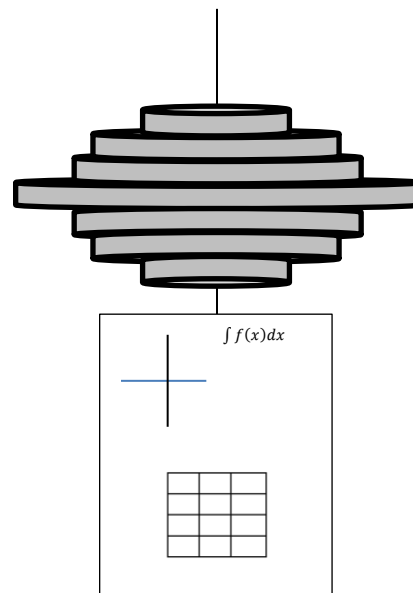

The following guidelines apply:

1) The function(s) can be any non-linear function except a parabola, square

root, or absolute value. (If using 2 functions, the 2nd can be any of your choice).

2) The materials can be no thicker than 0.5". Your model must be at least 6

inches long and have at least 12 circular cross sections.

 With your model, you must have a sheet with the following:

1. A detailed graph of your functions showing the partitions for your Riemann Sum.

2. The exact volume as defined by a definite integral. You must show all work that leads to
your solution.

$\int f(x)dx$

	Calculus Rubric: **Volumes of Rotation** **names:**		
		PROFICIENT	**ADVANCED**
Model	**45**	• Model is mounted on a string or wire.(5) • Material for cross sections are no more than .5” thick. (5) • Model is at least 6 inches long. (5) • At least 12 cross sections are present on model. (5) • Model is neat and shows attention to detail (10)	In addition to PROFICIENT criteria … • Model is very creative in its presentation.(5) • Model is decorated to look like something.(10)
		30	30 - - - - - - - - - - - - - 45
Content Calculus Information	**50**	• First equation is nonlinear, and is not quadratic, square root, or absolute value. (5) • Equation(s) is/are graphed neatly on graph paper. (5) • Area is shaded.(5) • Partitions are drawn.(5) • All work is shown clearly for the exact volume. (5) • Answers are correct. (10) • Rubric is turned in with project (5)	In addition to PROFICIENT criteria … • Second equation is used to make a washer problem. • Work is typed using an equation editor.
		40	40 - - - - - - - - - - 50
Collaborative Work	**10**	These last ten points will be a combination of teacher and partner input on how well your time is used, and how well you work as a team.	

Comments:

Final Grade