

## Finding Volume Project

### Your task:

Find the volume of an item that is symmetrical, but is not a common geometric shape.

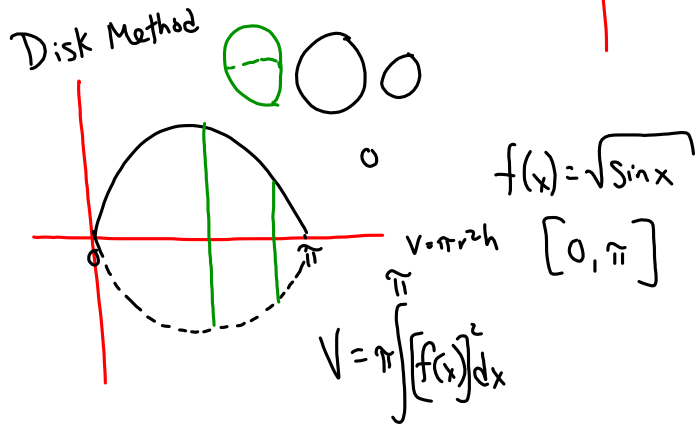
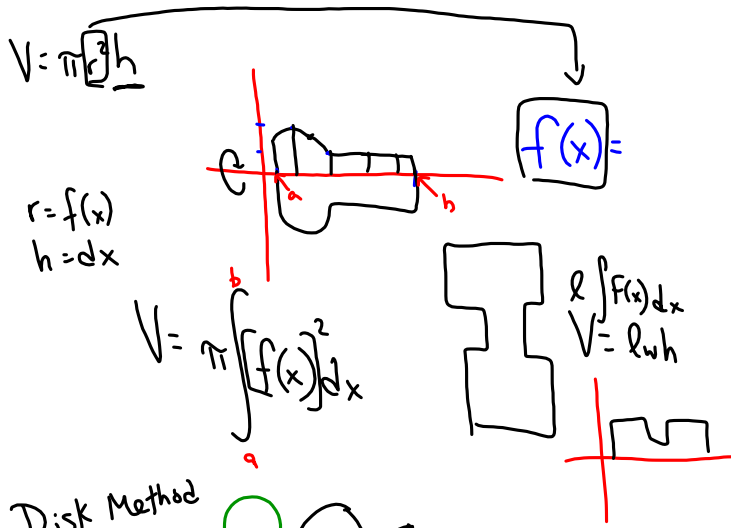
no Spheres, cylinders, prisms,  
Pyramids, cones

### What's required:

- Picture of the item
- Graph of the item
- Regression equation of the item
- Calculations to find the volume
- Visual representation with all work

Rubric:

	0-2	3-5	6-8	9-10	
Picture	Picture of item is not included			Picture of item is included	_____/10
Graph	Graph of item is not included	Graph of item is included, but does not have the same shape as the item	Graph is mostly accurate to the item's shape, but has some errors	Graph is identical to the item's shape	_____/10
Regression Equation	Equation is not included	Equation is not correct	Equation is mostly correct	Equation matches graph and is correct	_____/10
Calculations	No calculations	Calculations mostly incorrect/no final volume included	Calculations are mostly correct, with little errors/final volume included	Calculations are all correct/final volume is included	_____/10
Visual Representation	No visual	Some requirements are on the visual	Most requirements are on the visual	All requirements are on the visual	_____/10
Total					_____/50



$V = \pi \int_0^{\pi} [\sqrt{\sin x}]^2 dx = \pi \int_0^{\pi} \sin x dx$

$= \pi [-\cos x]_0^{\pi} = \pi [1 - (-1)] = 2\pi$

$-\cos \pi = -(-1) = 1$   
 $-\cos 0 = -(1) = -1$   
 $\frac{1 - (-1)}{2} = 1$

