

Shell Problems [section 6.3 pg 437 # 1-20]

#	region boundary	axis of rev				thickness		radius	height	definite integral
		x-axis	y-axis	x=?	y=?	dx	dy			$2\pi \int_{\sim}^{\sim} \text{radius} \cdot \text{height} \cdot \text{thickness}$
1	$y=x, y=0, x=2$		■							
2	$y=1-x, y=0, x=0$		■							
3	$y=\sqrt{x}, y=0, x=4$		■							
4	$y=x^2+4, x=0, y=8$		■							
5	$y=x^2, y=0, x=2$		■							
6	$y=\frac{1}{2}x^2, y=0, x=6$		■							
7	$y=x^2, y=4x-x^2$		■							
8	$y=4-x^2, y=0$		■							
9	$y=4x-x^2, x=0, y=4$		■							
10	$y=2x, y=4, x=0$		■							
11	$y=\frac{1}{\sqrt{2\pi}} e^{-x^2/2}, y=0, x=0, x=1$		■							
12	$y=\begin{cases} \frac{\sin x}{x}, & x>0 \\ 1, & x=0 \end{cases} \Rightarrow \begin{cases} y=0 \\ x=0 \\ x=\pi \end{cases}$		■							

Shell Problems [section 6.3 pg 437 # 1-20]										
#	region boundary	axis of rev thickness						radius	height	definite integral
		x-axis	y-axis	x=?	y=?	dx	dy			
13	$y=x, y=0, x=2$	■								
14	$y=2-x, y=0, x=4$	■								
15	$y=\frac{1}{x}, x=1, x=2, y=0$	■								
16	$x+y^2=16, x=0$	■								
17	$y=x^2, y=4x-x^2$			4						
18	same as 17			2						
19	$y=4x-x^2, y=0$			5						
20	$y=\sqrt{x}, y=0, x=4$			6						