

NAME _____

Calc AB
Notes 7.3
Shell Method

NOTE: Rectangles are parallel to rotational axis.

*Designated Hitter for Calculus

Shell Method: Region rotated around horizontal or vertical axis on $[a,b]$

$$V = 2\pi \int_a^b d(x)h(x)dx \quad \text{or} \quad V = 2\pi \int_{f(a)}^{f(b)} d(y)h(y)dy$$

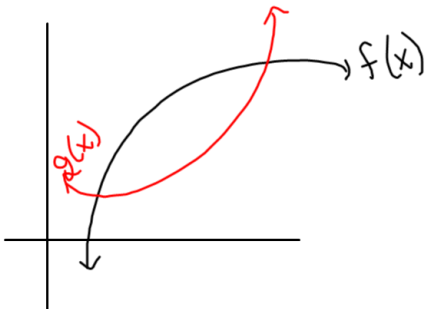
DH can help remember formula

$$d(x) =$$

$$h(x) =$$

Ex 1

$f(x)$ and $g(x)$ intersect at $x = a$ and $x = b$. Find Volume rotated around y axis.



Ex 2

What volume results if you rotate region in 1st Quadrant bounded by

$$y = x^2 + 1, \quad x = 1, \quad \text{and} \quad y = 1$$

about $y = \frac{1}{2}$

Ex 3

P.472 #28:

Choose the best method to find the volume of the solid of revolution

bounded by $y = \frac{10}{x^2}$, $y = 0$, $x = 1$ and $x = 5$.

Rotate about a. x-axis, b.y-axis, c.line $y=10$.

