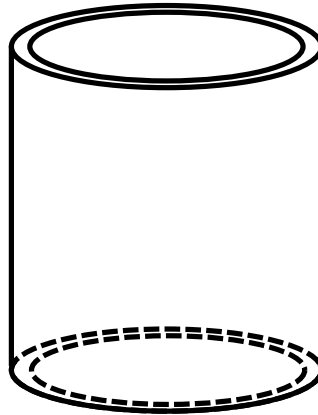


## Calculus AB

6-3

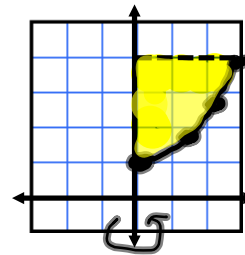
Volume of Rotation: Shell Method

Surface Area of a Tube:



Use the shell method to set up and evaluate the integral that gives the volume of the solid generated by revolving the plane region about the  $y$ -axis. (pg 474)

4)  $y = \frac{1}{2}x^2 + 1$



### Contrast Shell and Disk Methods

#### Disk Method

$x$ -axis rotation -  $\int d$ \_\_

$y$ -axis rotation -  $\int d$ \_\_

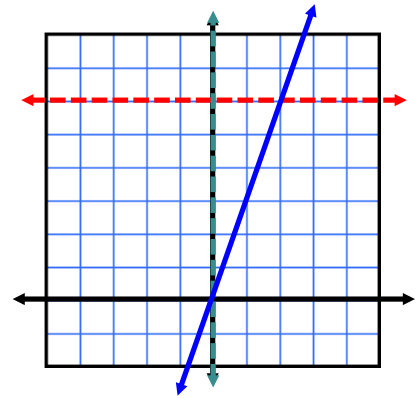
#### Shell Method

$x$ -axis rotation -  $\int d$ \_\_

$y$ -axis rotation -  $\int d$ \_\_

Use the shell method to set up and evaluate the integral that gives the volume of the solid generated by revolving the plane region about the  $y$ -axis.

10)  $y = 3x$ ,  $y = 6$ ,  $x = 0$



Use the shell method to set up and evaluate the integral that gives the volume of the solid generated by revolving the plane region about the  $x$ -axis.

<sup>old</sup><sub>book</sub> 15)  $y = \frac{1}{x}$   
 $x = 1$   
 $x = 2$   
 $y = 0$



Assignment:

pg 474  
1-29 odd