

Name: \_\_\_\_\_

## Volume: The Shell Method

- 1) Find the volume generated when the region bounded by  $y = 3 - x^2$  and  $y = -1$  is revolved about the line  $y = -1$
  
- 2) Find the volumes generated when the region bounded by the given curves and lines is rotated about the  $x$  axis.
  - 1)  $y = 3x - x^2$ ,  $y = x$
  - 2)  $y = x^2 + 1$ ,  $y = x + 3$
  - 3)  $y = x^2$ ,  $y = 4$
  
- 3) Find the volumes generated when the region bounded by the given curves and lines is rotated about the  $y$  - axis.
  - 1)  $y = x/2$ ,  $x = 0$ ,  $y = 2$
  - 2)  $x = 1 - y^2$ ,  $x = 0$
  - 3)  $xy = 1$   $x = 0$ ,  $y = 1$ ,  $y = 2$