1. The region enclosed by  $y = \frac{1}{1+x^4}$ , x = 0, x = 1 and y = 0 is rotated about the y-axis. Use the shell method to find the volume of the resulting solid.

1. The region enclosed by  $y = \frac{3x}{1+x^3}$ , x = 0, x = 3 and y = 0 is rotated about the y-axis. Use the shell method to find the volume of the resulting solid.