HW 7.3 Volumes Rotated about y-axis  Name ___________________________

1) Set up an equation that would find volume of enclosed region rotated about y-axis.

\[ f(x) = x^3, \quad g(x) = 0 \quad \text{from} \quad [0, 2] \]

2) Find each volume of enclosed region rotated about the y-axis. (Show work)

\[ f(x) = x^3, \quad g(x) = 0 \quad \text{from} \quad [0, 2] \]

3) \[ f(x) = \sqrt{9 - x^2}, \quad g(x) = 0 \quad \text{from} \quad [0, 3] \]

4) Find each volume of enclosed region rotated about the y-axis. (Set up and use calculator)

\[ y = \frac{1}{\sqrt{x} + 1}, \quad y = 0, \quad x = 0, \quad x = 10 \]

5) Find Volume of enclosed region between the graph of \( f(x) = \sqrt{x} \) and x-axis from \([0, 4]\) rotated about y-axis. (Set up and use calculator)
6) Find Volume of enclosed region between the graph of \( f(x) = x^2 \), \( y = 9 \) and \( y \)-axis from \([0, 3]\) rotated about \( y \)-axis. \textbf{(Set up and use calculator)}

\[ f(x) = x^2, \quad y = 9 \]

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Find the volume of each enclosed region rotated about the \( y \)-axis

\[ \text{Set up and use calculator} \]

7) \( f(x) = 3^x \) \quad \( g(x) = 3x + 1 \)

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8) \( y = \frac{1}{4}x + 1 \) \quad \( g(x) = (x - 2)^2 \)