

1. Let R be the region bounded by $y = -x^3 + 9x$ and the x -axis with $x \geq 0$. Find the volume when R is rotated about
 - a. the y -axis
 - b. the x -axis
 - c. the line $x = -3$
 - d. the line $y = -3$

2. Let R be the region bounded by $y = e^{(x^2)} - 1$, the x -axis, and the line $x = 3$.
 - a. Find the volume when R is rotated about the y -axis
 - b. Consider the solid formed when R is rotated about the x -axis.
Set up the integral that gives the volume of the solid and find a value of n such that M_n approximates the volume accurate within 0.001 of its actual value.