Solids by Revolution: Disc Method

1. Determine the volume of the solid generated by rotating the area bounded by the graph of $y = x - x^2$ and $y = 0$ about the x-axis.

2. Determine the volume of the solid obtained by rotating the region bounded by $y = x^2 - 4x + 6$, $x = 1$, $x = 4$, and $y = 0$ about the x-axis.