Consider the region $R$ bounded by the graphs of $y = 2x$ and $y = x^2$.

1. Carefully sketch the region $R$.

2. A solid has base given by the region $R$ and cross sections perpendicular to the $y$-axis are squares. Express the volume as an integral. Do not evaluate.

3. The region $R$ is rotated about the line $y = -1$. Using the method of disks/washers, express the resulting volume as an integral. Do not evaluate.