

NOVEMBER PROBLEM

Suppose we rotate the square of vertices $(0, 0)$, $(1, 0)$, $(0, 1)$, $(1, 1)$ on the plane around points $(1, 0)$, $(2, 0)$, $(3, 0)$ respectively. What is the area between the curve generated by the vertex $(0, 1)$ of the square during this rotation and the horizontal axis?