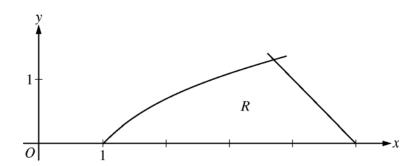
2012 AP® CALCULUS AB FREE-RESPONSE QUESTIONS



- 2. Let R be the region in the first quadrant bounded by the x-axis and the graphs of $y = \ln x$ and y = 5 x, as shown in the figure above.
 - (a) Find the area of R.
 - (b) Region R is the base of a solid. For the solid, each cross section perpendicular to the x-axis is a square. Write, but do not evaluate, an expression involving one or more integrals that gives the volume of the solid.
 - (c) The horizontal line y = k divides R into two regions of equal area. Write, but do not solve, an equation involving one or more integrals whose solution gives the value of k.

END OF PART A OF SECTION II