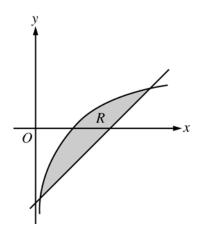
2006 AP® CALCULUS AB FREE-RESPONSE QUESTIONS

CALCULUS AB SECTION II, Part A

Time—45 minutes

Number of problems—3

A graphing calculator is required for some problems or parts of problems.



- 1. Let R be the shaded region bounded by the graph of $y = \ln x$ and the line y = x 2, as shown above.
 - (a) Find the area of R.
 - (b) Find the volume of the solid generated when R is rotated about the horizontal line y = -3.
 - (c) Write, but do not evaluate, an integral expression that can be used to find the volume of the solid generated when *R* is rotated about the *y*-axis.

WRITE ALL WORK IN THE PINK EXAM BOOKLET.

© 2006 The College Board. All rights reserved.

Visit apcentral.collegeboard.com (for AP professionals) and www.collegeboard.com/apstudents (for students and parents).