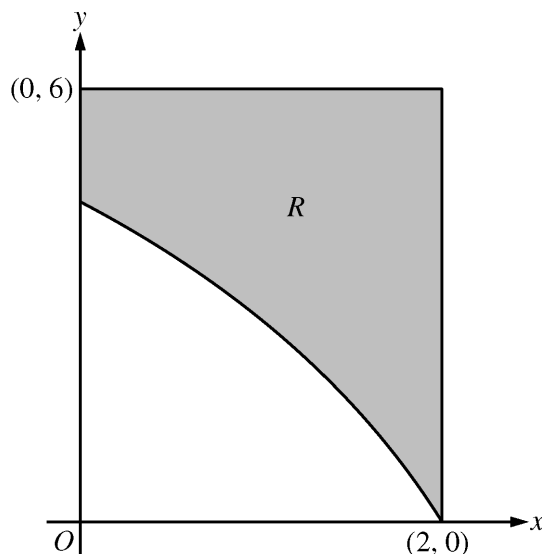


CALCULUS AB  
SECTION II, Part A

Time—45 minutes

Number of problems—3

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



1. In the figure above,  $R$  is the shaded region in the first quadrant bounded by the graph of  $y = 4\ln(3 - x)$ , the horizontal line  $y = 6$ , and the vertical line  $x = 2$ .
- (a) Find the area of  $R$ .
- (b) Find the volume of the solid generated when  $R$  is revolved about the horizontal line  $y = 8$ .
- (c) The region  $R$  is the base of a solid. For this solid, each cross section perpendicular to the  $x$ -axis is a square. Find the volume of the solid.

---

WRITE ALL WORK IN THE EXAM BOOKLET.