

Math 131 Homework: Day 13

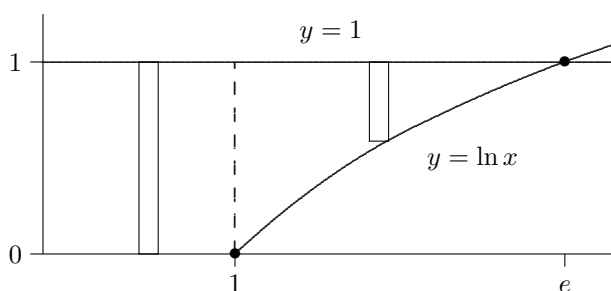
My Office Hours: M & W 12:30–2:00, Tu 2:30–4:00, & F 1:15–2:30 or by appointment. **Math Intern** Sun: 12–6pm; M 3–10pm; Tu 2–6, 7–1pm; W and Th: 5–10 pm in Lansing 310. Website: <http://math.hws.edu/~mitchell/Math131S13/index.html>.

☕ Practice

1. **Test 1** tomorrow in Lab. See previous handouts and website.
2.
 - a) Today we determine area between curves by integration along the y -axis (not on the exam tomorrow). See Section 6.2 and the notes on line for more examples.
 - b) For Friday, read Section 6.3 on Volume.
 - c) Practice: Try a few before class on Friday. Try page 388ff, integrating along the y axis: #23, 25, 29(y -axis only), 31(y -axis only), 45.
3.
 - a) Find the area in the first quadrant enclosed by $y = \sqrt{x-1}$, the line $y = 7 - x$, and the x -axis by integrating along the x -axis. Draw the figure. (Answer: $\frac{22}{3}$.)
 - b) Do it instead by integrating along the y -axis.

Class Work: Integration Along the y -axis

Motivation: Find the area of the region in the first quadrant enclosed by the graphs of $y = 1$, $y = \ln x$, and the x - and y -axes.



The region in the first quadrant enclosed by the graphs of $y = 1$, $y = \ln x$, and the x - and y -axes. There are two representative rectangles because the bottom curve changes.

- c) Set up the integral for the area of this region. Can you evaluate it? Why?
- d) What if we change our perspective and integrate along the y -axis? Draw the appropriate representative rectangle and determine the area.

