Homework Set 9

DUE: NOV 11, 2019 (AT THE BEGINNING OF CLASS)

To be handed in:

Please write your solution to Problem 1 on a single sheet of paper!

1. Sketch the indicated regions R and compute the following double integrals over R. Remember that only one order of integration (first in x, second in y; or first in y, second in x) might be feasible. Make sure to use limits for improper integrals.

   a) $\displaystyle\iint_R \sqrt{4-y^2}\,\mathrm{d}A$
   where R is the triangle with vertices $(0,0)$, $(0,2)$, and $(2,2)$.

   b) $\displaystyle\iint_R \frac{y^2}{1+x^2}\,\mathrm{d}A$
   where R is the infinite strip with $y \in [0,1]$ and $-\infty < x < \infty$.

   c) $\displaystyle\iint_R \frac{1}{\ln y}\,\mathrm{d}A$
   where R is the region bounded by $y = e^x$ and $y = 10$, with $0 \le x \le \ln 10$.

NOT to be handed in (but recommended for you to practice with):

2. Textbook (5th edition) Section 14.2, Exercises 7-11, 13-17

3. Textbook (5th edition) Section 14.3, Exercises 9-12, 17-19, 29-31