Math 101 – WORKSHEET 9
SOLIDS OF REVOLUTION, INTEGRATION BY PARTS

(1) Solids of revolution

(a) (Final 2014, variant) Find the volume of the solid generated by rotating the finite region bounded by $y = \frac{1}{x}$ and $3x + 3y = 10$ about the line $y = -\frac{4}{3}$. It will be useful to sketch the region first.

(b) The area between the y-axis, the curve $y = x^2$ and the line $y = 4$ is rotated about the y-axis. What is the volume of the resulting region?

Date: 23/1/2017, Worksheet by Lior Silberman. This instructional material is excluded from the terms of UBC Policy 81.

(2) Integrate by parts
   (a) $\int xe^x \, \mathrm{d}x$

   (b) (Final, 2014) $\int x \log x \, \mathrm{d}x$