

## Math 129-8H Written Homework #6

Due October 8, in class.

1. 8.1, , numbers 12, 28
2. 8.2, numbers 24, 32
3. Consider the (infinite) region  $R$  bounded by the curve  $y = 1/x$  and the lines  $x = 1$  and the  $x$ -axis.
  - (a) Find the volume of the solid gotten by rotating the region  $R$  around the  $x$ -axis.
  - (b) Now find the volume of the solid gotten by taking  $R$  as a base and specifying the cross-sections are all equilateral triangles.
  - (c) If we replace the curve  $y = 1/x$  with  $y = 1/x^p$ , for which values of  $p$  are the two volumes finite?