

18.022 Recitation Quiz  
01 December 2014

1. Let  $S$  be the surface defined by

$$z = \frac{1}{x^2 + y^2} \text{ for } z \geq 1.$$

(a) Sketch the graph of this surface.

(b) Determine whether the volume of the region bounded by  $S$  and the plane  $z = 1$  is finite or infinite.

(c) Determine whether the surface area of  $S$  is finite or infinite.