Math 2401 (D1-D3)
10/6/2014

Worksheet 3 - Chapter 15

1. Sketch the region R described by:

$$-5 \leq y \leq 5;\ y^2 \leq x \leq 25$$

and write $\int \int_R dA$ using both vertical and horizontal cross-sections.

2. Sketch the region R described by:

$$0 \leq y \leq e^x;\ -1 \leq x \leq 2$$

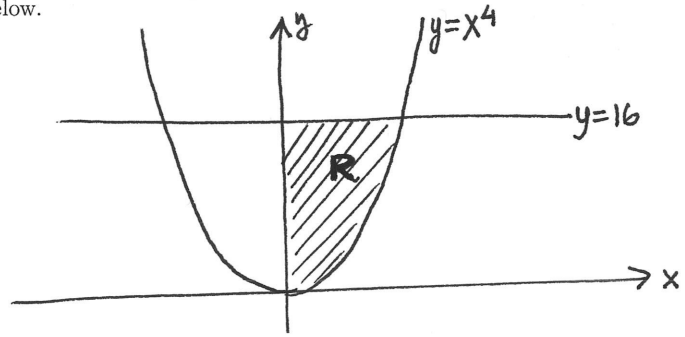
and write $\int \int_R dA$ using both vertical and horizontal cross-sections.

3. Sketch the region R described by:

$$e^x \leq y \leq e;\ 0 \leq x \leq 1$$

and write $\int \int_R dA$ using both vertical and horizontal cross-sections.

4. Write the double integral $\int \int_R dA$ using both vertical and horizontal cross-sections, where the region R is drawn below.



5. Sketch the region R bounded by the curves:

$$y = \sqrt[5]{x};\ y = 0;\ x = 32$$

and write $\int \int_R dA$ using both vertical and horizontal cross-sections.

6. Sketch the region R bounded by the curves:

$$y = e^{-x};\ y = 1;\ x = \ln(2)$$

and write $\int \int_R dA$ using both vertical and horizontal cross-sections.

7. Find:

$$\int \int_R \frac{xy^4}{x^2+1} dA,$$

where R is the region described by: $0 \leq y \leq 10$, $0 \leq x \leq 1$.