MA 213 Worksheet #14

Section 15.1-15.2
02/28/19

1 Calculate the iterated integral.

(a) *15.1.15* $\int_1^4 \int_0^2 (6x^2y - 2x)\, dy\, dx$

(b) *15.1.17* $\int_0^1 \int_1^2 (x + e^{-y})\, dx\, dy$

2 *15.2.1* Evaluate the iterated integral: $\int_1^5 \int_0^x (8x - 2y)\, dy\, dx$

3 *15.2.13* Evaluate the double integral in two ways.

$$\iint_D x\, dA,$$

D is enclosed by the lines $y = x$, $y = 0$, $x = 1$.

4 *15.2.15* Set up iterated integrals for both orders of integration. Then evaluate the double integral using the easier order and explain why its easier.

$$\iint_D y\, dA$$

D is bounded by $y = x - 2$, $x = y^2$

5 *15.1.37* Find the volume of the solid that lies under the plane $4x + 6y - 2z + 15 = 0$ and above the rectangle $R = \{(x, y)| \quad -1 \leq x \leq 2, -1 \leq y \leq 1\}$

6 *15.2.23* Find the volume of the solid that is under the plane $3x + 2y - z = 0$ and above the region enclosed by the parabolas $y = x^2$ and $x = y^2$.