1. Calculate the iterated integral.

a) $\int_0^1 \int_1^2 (4x^3 - 9x^2y^2)dydx$

A. -6

b) $\int_0^1 \int_1^2 \frac{xe^x}{y}dydx$

A. $\ln 2$

c) $\int_0^1 \int_0^1 xy\sqrt{x^2 + y^2}dydx$

A. $\frac{4\sqrt{2}-2}{15}$

d) $\int_0^1 \int_0^1 \sqrt{s+t}dsdt$

A. $\frac{16\sqrt{2}-8}{15}$

e) $\int_0^1 \int_{2x}^2 (x - y)dydx$

A. -1

f) $\int_0^1 \int_0^v \sqrt{1 - v^2}dudv$

A. $\frac{1}{3}$
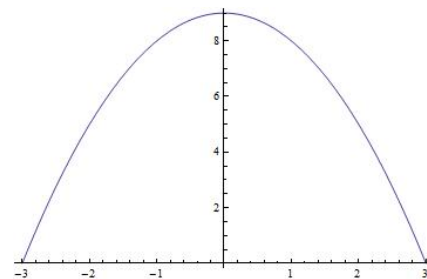
2. Evaluate the double integral.

$$\iint_D x\sqrt{y^2 - x^2}\,dA, \qquad D = \{(x,y) : 0 \le y \le 1, 0 \le x \le y\}$$

A. $\frac{1}{12}$

3. Sketch the region of integration and change the order of integration.

$$\int_0^3 \int_0^{\sqrt{9-y}} f(x,y)\,dx\,dy$$

A. $\int_0^{\sqrt{6}} \int_0^3 f(x,y)\,dy\,dx + \int_{\sqrt{6}}^3 \int_0^{9-x^2} f(x,y)\,dy\,dx$

4. Find the volume of the solid enclosed by the surface $z = x\sec^2 y$ and the planes $z = 0$, $x = 0$, $x = 2$, $y = 0$, and $y = \frac{\pi}{4}$.

A. 2

Course Homework due Apr 2, Wed.
    Mar 17, Mon. : **15.5** 1, 3, 5, 7, 9, 11, 15. **15.6** 3, 5, 7, 9
    Mar 19, Wed. : **15.7** 3, 5, 7, 9, 11, 17, 21, 33
    Mar 21, Fri.   : **15.8** 5, 6, 7, 17, 19, 21, 23, 27