1. Evaluate the iterated integral.

$$\int_0^1 \int_0^{e^v} \sqrt{1 + e^v} \, dw \, dv$$

2. Set up iterated integrals for both orders of integration. Then evaluate the double integral.

$$\iint_D y^2 e^{xy} \, dA, \quad D \text{ is bounded by } y = x, y = 4, x = 0$$

3. Use a double integral to find the area of the region enclosed by both of the cardioids $r = 1 + \cos\theta$ and $r = 1 - \cos\theta$.

4. Evaluate the iterated integral by converting to polar coordinates.

$$\int_0^a \int_{-\sqrt{a^2-y^2}}^0 x^2 y \, dx \, dy$$

5. Find the mass and center of mass of the lamina that occupies the region D and has the given density function ρ.

$$D \text{ is bounded by } y = x^2 \text{ and } y = x + 2; \ \rho(x, y) = kx$$

6. Find the area of the part of the sphere $x^2 + y^2 + z^2 = 4$ that lies above the plane $z = 1$.

7. Rewrite the below integral as an equivalent iterated integral in more than two other orders.

$$\int_0^1 \int_0^{1-x^2} \int_0^{1-x} f(x, y, z) \, dy \, dz \, dx$$

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