Assignment Due: Thursday, October 31, 2019, 11:59pm

Textbook Reading: Sections: 15.2, 15.3.

Make notes in your study journal if you encounter any difficulty with understanding this material and seek assistance at the Calculus Workshop (CW).

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1) **Calc3 Online**

Login in to WebAssign, and complete all Assignments for **HW-7**. It is expected that you work through the problems in your study journal before entering the answers online — your saved written work is your study material for the exams.

- Section 15.2
- Section 15.3

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2) **Instructor's Questions**

(a) Let D be the region bounded by the four curves

$$x = y, \quad y = 0, \quad x + y = 2, \quad x + y = 4.$$

Sketch D and evaluate $\iint_D (x + y) \, dA$.

(b) Evaluate the integral $\int_0^\infty e^{-x^2} \, dx$ by following the given steps.

Step 1. Show that

$$\left(\int_0^\infty e^{-x^2} \, dx \right)^2 = \iint_R e^{-x^2 - y^2} \, dA,$$

where $R = [0, \infty) \times [0, \infty)$.

Step 2. Evaluate the double integral $\iint_R e^{-x^2 - y^2} \, dA$.

Step 3. Find the value of $\int_0^\infty e^{-x^2} \, dx$.