

## Quiz #6 for Calculus 3 (MATH-UA.0123-001)

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**Problem 1.** Let:

$$y_0(x) = (1 - x)^2, \quad y_1(x) = \cos(\pi x/2),$$

and let:

$$D = \left\{ (x, y) \in \mathbb{R}^2 : 0 \leq x \leq 1 \text{ and } y_0(x) \leq y \leq y_1(x) \right\}.$$

Evaluate the integral:

$$\iint_D (x + 2y) dA.$$

*Hint: use integration by parts. [10 points]*