Assignment Due: Thursday, October 17, 2019, 11:59pm

Textbook Reading: Sections: 14.2, 14.3, 14.4.

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-5**. 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 12.6
- Section 14.5
- Section 14.6
- Section 14.7

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2) **Instructor's Questions**

Consider the surface Σ given by

$$z - 2x^2 + y^2 = 1\,.$$

(a) Show that $P(1, 1, 2)$ is on Σ.

(b) Find the equation of the tangent plane to Σ at P.

(c) View this surface as the graph given by

$$z = f(x, y) = 2x^2 - y^2 + 1\,.$$

Decide whether f has a local maximum or minimum on $\mathbb{R}^2$.

(d) Find the absolution minimum of f over the disk $x^2 + y^2 \leq 4$.

(e) Sketch the surface Σ.