MATH 113: DISCRETE STRUCTURES
READING QUESTIONS FOR WEDNESDAY WEEK 6

Reading assignment. *CAES* §5.4.

Problem 1. Draw several level sets for the function $f(x, y) = x^2/4 + y^2$. Also draw the unit circle $\{(x, y) \in \mathbb{R}^2 \mid x^2 + y^2 = 1\}$. Qualitatively, what does the method of Lagrange multipliers tell you about the relationship between extrema of f constrained to the unit circle and the elliptical level sets of f?

Problem 2. Regarding Snell's law: How does the light know the quickest path from A to B when it has not yet encountered the second medium? Isn't that deeply weird?