Calculus II **Quiz I** **May 14, 2021**

Student ID: _____ Name: _____ Score: _____

1. (20 points) Find the absolutely maximum and absolutely minimum for the function

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

defined on the region $\Omega = \{(x, y, z) \in \mathbb{R}^3 | 3x^2 + 2xy + 3y^2 + z^2 - 16 \leq 0 \text{ and } z \geq 0\}$.