

Bilkent University Department of Mathematics

MATH 102-14: Calculus II

Quiz 6 - April 30, 2026

Instructor: Enis Kaya

Name and surname: _____

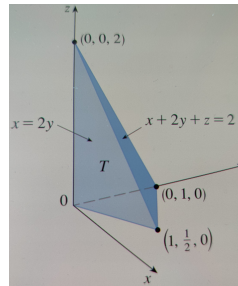
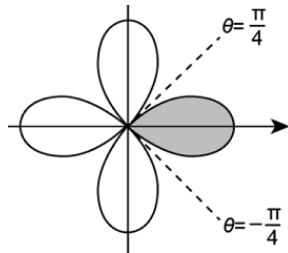
Student ID number: _____

Signature: _____

Show all your work. Explain your reasoning fully with well-formed mathematical sentences and using correct notation. Organize your solution on the page properly. Write clearly and cleanly.

Questions:

1. [5 points] Evaluate the iterated integral $\int_0^1 \int_x^1 \sin(y^2) dy dx$.
2. [5 points] Find the area enclosed by the four-leaved rose $r = \cos(2\theta)$. (**Recall the HW:** “Look at other examples and exercises, like the four-leaved rose $r = \cos(2\theta)$ ”.)
3. [5 points] Use a triple integral to find the volume of the tetrahedron T bounded by the planes $x + 2y + z = 2$, $x = 2y$, $x = 0$, and $z = 0$. (**Recall:** In §15.2, we computed this volume using a double integral. Hence, it is not necessary to use triple integrals to compute volumes, they simply give an alternative method for setting up the calculation.)



Solutions: