## Volume between a Cone and Ellipsoid

Math 126, Winter 2024

Final Examination

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6. (12 points) Find the volume of the region that is inside the ellipsoid  $x^2 + y^2 + 4z^2 = 25$  and above the cone  $z = \sqrt{x^2 + y^2}$ .

One of my students, Michael Petta, from a previous Math 126 quarter became very interested in this old exam problem and made a 3D animation using "Manim" (an online math animation tool we are exploring for cleaner animations).

This is a beautiful animation and solution to this problem. Thanks Michael!



Scan for visual solution and animation in Manim