Q1\ Evaluate the integral

Q2\sketch the region bounded by the given lines and curves. Then express the region’s area as an iterated double integral and evaluate the integral.

The parabolas x = y2 - 1 and x = 2y2 - 2

Q3\change the Cartesian integral into an equivalent polar integral. Then evaluate the polar integral.



Q4\ Evaluate the integral

Q5\ Find the volumes of the regions common to the interiors of the cylinders x2 + y2 = 1 and x2 + z2 = 1, one-eighth of which is shown in the figure