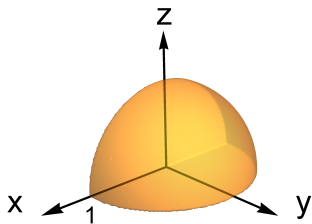


Double Integrals in Polar Coordinates



Question

Which of the iterated integrals in polar coordinates computes the volume of the quarter hemisphere shown in the figure?

A. $\int_0^\pi \int_0^1 (r - r^3) dr d\theta$

B. $\int_0^\pi \int_0^1 (r - r^2) dr d\theta$

C. $\int_0^\pi \int_0^1 (\sqrt{1-r^2}) r dr d\theta$

D. $\int_0^\pi \int_0^1 (r + r^3) dr d\theta$