

Iterated Triple Integral.

Spring 2016

Attendance Quizzes

March 25, 2016

Quiz 21 Iterated Triple Integral.

Consider the triple integral $\int_{z=0}^6 \int_{y=0}^{3-z/2} \int_{x=0}^{6-2y-z} f(x, y, z) dx dy dz$.

This is an integral over a region R in the first octant bounded by the plane $x + 2y + z = 6$.

Rewrite the integral as

$$\int \int \int_R f(x, y, z) dz dx dy$$

by identifying all the limits for the new order of integration.

Answer:

$$\int_{y=0}^3 \int_{x=0}^{6-2y} \int_{z=0}^{6-2y-x} f(x, y, z) dz dx dy.$$