

1. Calculate the iterated integral

Integrate for x first.

$\frac{1}{2}(x^2) + xy^2$ for -1 to 1

$2y^2 + 1$

Integrate for y

$\frac{2}{3}(y^3) + y$ for 1 to 2

Answer = $\frac{17}{3}$

2. Calculate the double integral

Integrate for x

U substitute for x^3+1

Expression becomes $y/3u$

Find new bounds for u

Simplify to become $y/3(\ln(2))$

Integrate for y

$y^2/6(\ln 2)$

$6\ln 2(1/6-1/6)$

0