??

$V =$

$z = f(x, y)$

R

$V = _R$

$f(x, y)dA$

$f(x, y) \geq$

$g(x, y)$

R

volume
between

$f(x, y)$

and

$g(x, y)$

on

R

$V = _R f(x, y)dA - _R g(x, y)dA = _R \big(f(x, y) - g(x, y)\big)dA.$

$_b etween_s urfaces Volume Between Surfaces Let and be continuous functions on a closed, bounded region, where \geq$

$g(x, y)$

(x, y)

R

V

f

g

R

$V = _R \big(f(x, y) - g(x, y)\big)dA.$

$_t rip1$ **Finding volume between surfaces** $Find the volume of the space region bounded by the planes and in the^{st}$

??

??

R

$3x +$

$y -$

$4 =$

$8 -$

$3x -$

$2y$

$2x +$

$y =$

4

R

$x =$

0

$y =$

0

$y =$

$4 -$

$2x$

$0 \leq$

$x \leq$

2

$0 \leq$

$y \leq$

$4 -$

$2x$

$_R \big(8 -$

$3x -$

$2y -$

$(3x +$

$y -$

$4)\big)dA$

$=$

$\int_0^2 \int_0^{4-2x} \big(12 -$

$6x -$

$3y\big)dydx$

$=$

$16u^3.$

16

$$\int_0^2 \int_0^{4-2x} \big(8 - 3x - 2y - (3x + y - 4)\big)dydx.$$

??

$$8 - 3x - 2y - (3x + y - 4) = \int_{3x+y-4}^{8-3x-2y} dz.$$

$$\int_0^2 \int_0^{4-2x} \big(8 - 3x - 2y - (3x + y - 4)\big)dydx = \int_0^2 \int_0^{4-2x} \left(\int_{3x+y-4}^{8-3x-2y} dz\right)dydx.$$

D

D
??