

Homework problems due in October that are not in the Third edition of Stewart's Calculus

Section 12.3

Problem 7. (Stewart - fourth ed.)

Evaluate the double integral.

$$\iint_D y^2 dA$$

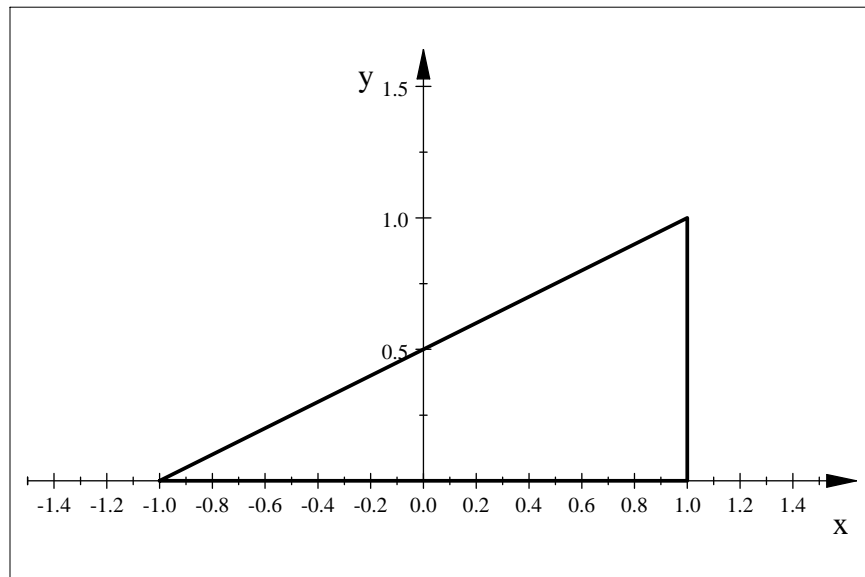
where

$$D = \{(x,y) | -1 \leq y \leq 1, -y - 2 \leq x \leq y\}.$$

Section 12.4

Problem 3. A region R is shown. Decide whether to use polar coordinates or rectangular coordinates and write $\iint_R f(x,y) dA$ as an iterated integral, where f is an arbitrary continuous function on R.

(-1, 0, 1, 0, 1, 1, -1, 0)



Problem 11. Evaluate the given integral by changing to polar coordinates.

$$\iint_D e^{-x^2-y^2} dA$$

where D is the region bounded by the semicircle $x = \sqrt{4 - y^2}$ and the y-axis.

Section 12.6

Find the area of the surface.

Problem 1. The part of the plane $x + 2y + 3z = 1$ that lies inside the cylinder $x^2 + y^2 = 3$.

Problem 2. The part of the plane $2x - 5y + z = 10$ that lies above the triangle with vertices $(0,0)$, $(0,6)$ and $(4,0)$.

Problem 5. The part of the cone $z = \sqrt{x^2 + y^2}$ that lies between the plane $y = x$ and the cylinder $y = x^2$.