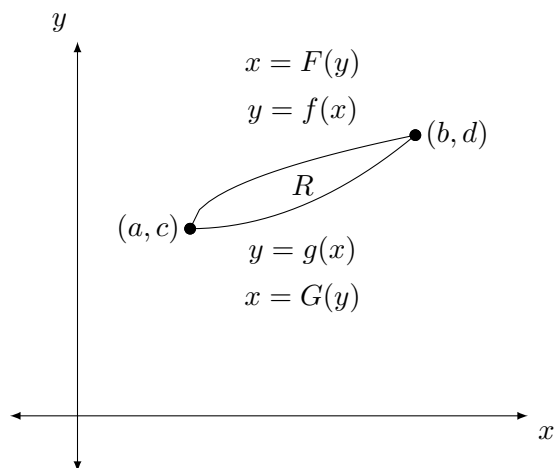


Volumes

Suppose R is the region bounded by the curves as indicated in the below. Assume $a < b$ and $c < d$.



Set up integrals for the following, but do not evaluate.

1. The volume of a solid with base given by R and whose cross-sections perpendicular to:

(a) the x -axis are squares.

(b) the x -axis are rectangles whose heights are half their width.

(c) the x -axis are right isosceles triangles whose hypotenuse is along the base.

(d) the x -axis are semi-circles.

(e) the y -axis are semi-circles.

(f) the y -axis are rectangles whose heights are three times their width.

(g) the y -axis are right isosceles triangles whose hypotenuse is not on the base.

(h) the y -axis are triangles whose heights are three times their base.

2. The volume of the solid of revolution where we revolve the region R about:

(a) the x -axis

(b) the y -axis

(c) the line $y = -2$ (assume $c > -2$)

(d) the line $x = -3$ (assume $a > -3$)

(e) the line $y = 4$ (assume $d < 4$)

(f) the line $x = 5$ (assume $b < 5$)