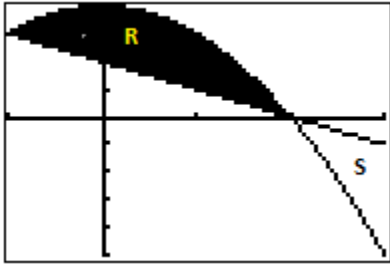


Review Chapter 7 AP style



$X[-1, 3]_1$  and  $Y[-5, 4]_1$

1. Let  $f$  and  $g$  be the functions given by  $f(x) = 4 - x^2$  and  $g(x) = -x + 2$ . Let  $R$  be the shaded region enclosed by the graphs of  $f$  and  $g$ , and let  $S$  be the shaded region in the fourth quadrant enclosed by the graphs of  $f(x)$ ,  $g(x)$ , and the vertical line  $x = 3$  as shown in the figure.
  - a) Find the area of  $R$ .
  - b) Find the area of  $S$ .
  - c) Region  $R$  is the base of a solid. For this solid, each cross section perpendicular to the  $x$ -axis is a square. Find the volume of the solid.
  - d) Find the volume of the solid generated when  $R$  is revolved about the horizontal line  $y = -1$ .
  - e) Find the perimeter of the region  $S$ .