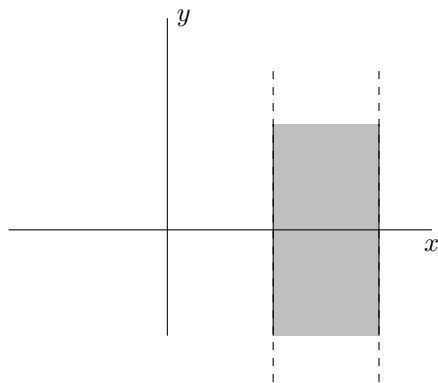
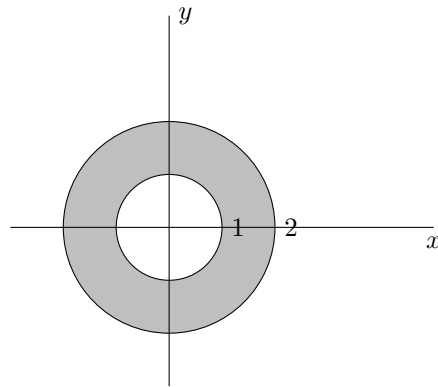
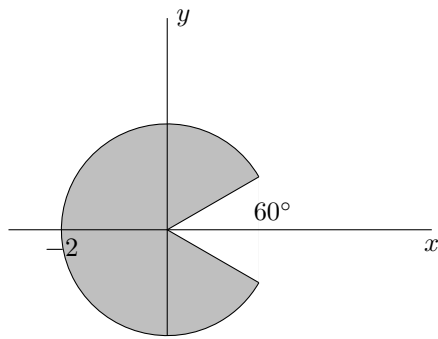
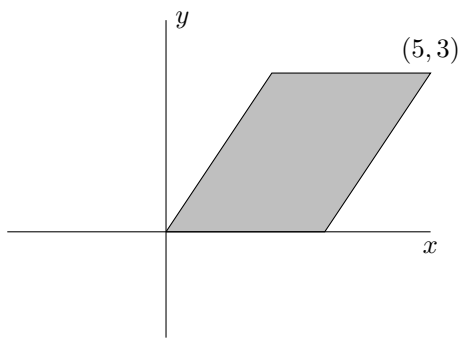
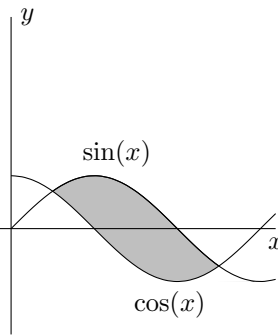
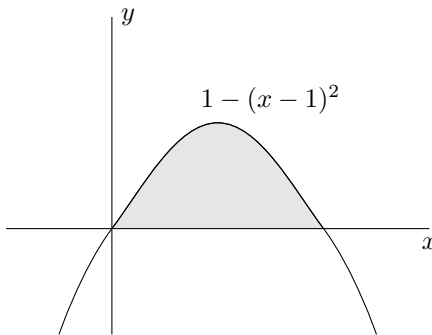


## DOUBLE INTEGRALS

**Set up some Double Integrals.** Write down integrals, which if compute, would find the volume under a function  $f(x, y)$  over the shaded region.



$(5, 3)$

**Integration.** Compute the volume of a sphere by using a double integral for the region  $x^2 + y^2 \leq 1$  and the function  $\sqrt{1 - x^2 + y^2}$ .

**Average Value.** What is the average value of the function  $x/(1 + xy)$  on the square  $[0, 2] \times [0, 2]$ ?