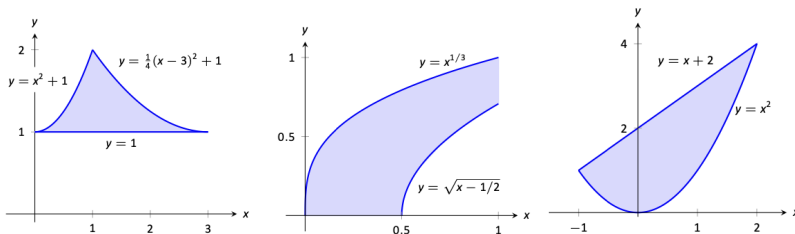
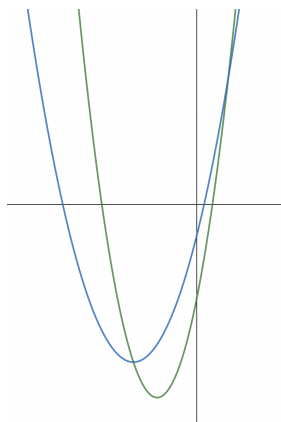


Math 102 — Finding areas

Problem 1. For each region below, set up integrals for finding the area of the region in two ways: (1) with respect to x and (2) with respect to y . No need to compute the integrals but you can use software like Wolfram Alpha to compute both and check that you get the same answer.



Problem 2. Set up an integral to find the area of region bounded by the functions $f(x) = 2x^2 + 5x - 3$ and $g(x) = x^2 + 4x - 1$. The graphs of these functions are shown below. Start by finding the two points of intersection.



Problem 3. Set up an integral to find the area of the triangle with vertices $(1, 1)$, $(2, 3)$, and $(3, 3)$. Start by making a sketch of the triangle on the xy -plane and find equations of the lines that define the triangle's sides.