For Examples 1-6, sketch the region bounded by the graph(s), write an integral for the area, and calculate the area exactly by the fundamental theorem.

Example 1

$y = x^2 - x - 6$ and the x-axis

Example 2

$x = 5 + 4y - y^2$ and the y-axis

Example 3

$y = -2x + 7$ and $y = x^2 - 4x - 1$

Example 4

$y = 0.2x^2 + 3$ and $y = x^2 - 4x + 3$

Example 5

$y = \sec^2 x$ and $y = e^{2x}$ in Quadrant I for $x \leq 1$

Example 6

$y = x^{2/3}$ and $y = \left(x+1\right)^{1/2} + 1$