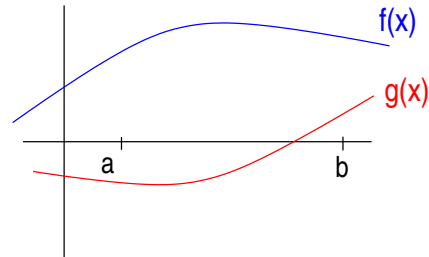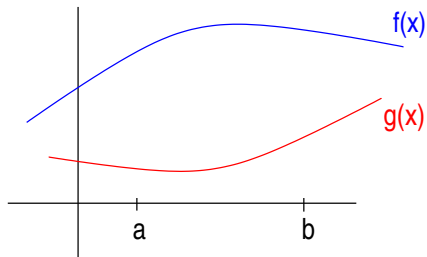### Section 7.1: Area between Curves
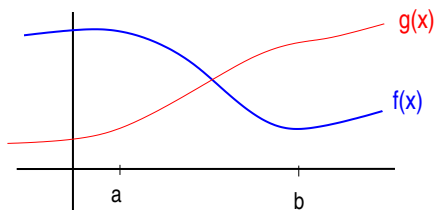
Example: Find the area between the function $y = 6 - x - x^2$ and the x-axis on the interval $[-1, 4]$.

Area Between Functions

Consider the continuous functions $f(x)$ and $g(x)$ with the property on the interval $[a, b]$ that $f(x) \geq g(x)$. Write down the computation that will give the area bounded between these functions on this interval.

Set-up the integral(s) that will give the area that is bounded between $f(x)$ and $g(x)$ on the interval $[a, b]$.

Example: Find the area bounded by these functions on the interval $[-1, 2]$

$y = x + 2$
$y = x^2 - 4$

Example: Find the area bounded by these functions on the interval $[-1, 5]$

$y = x + 3$
$y = x^2 - 9$

Example: Find the area bounded by these functions.

$y = x^3 - 6x^2 - 9x$
$y = x + 1$