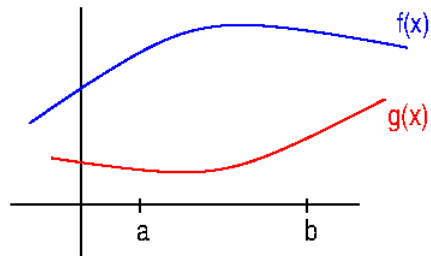
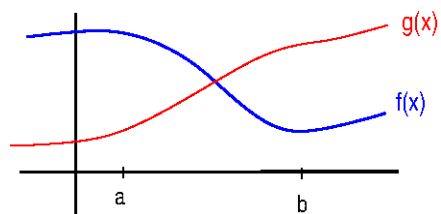
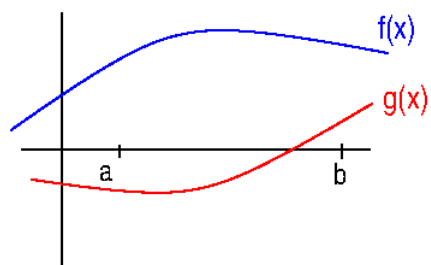


Section 6.1: Area between Curves

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



For the next graphs, 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 that is bounded by these curves.

$$y = x + 3$$

$$y = x^2 - 9$$

Example: Find the area that is bounded by these curves.

$$x = y^2$$

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

Example: Find the area that is bounded(enclosed) by these curves from $x = -2$ to $x = 1$.

$$y = e^{-3x}$$

$$y = e^x$$

Example: Set up the integral(s), with respect to the variable y , that gives the area that is bounded(enclosed) by these curves.

$$y = 2\sqrt{x}$$

$$y = \frac{-x}{3}$$

$$3x + y = 16$$

Example: Set up the integral(s) that will give area that is bounded by these curves on the interval $-2 \leq y \leq 3$.

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

$$y = 0.5x$$

Example: Set up the integral(s) that will give area that is bounded by these curves from $x = 0$ to $x = 2\pi$.

$$y = \sin(x)$$

$$y = 2 - 3\sin(x)$$

Example: Set up the integral(s) that will give area that is bounded by these curves $x = |y - 1|$ and $x = y^2 - 3$ with the condition that $y \geq 0$