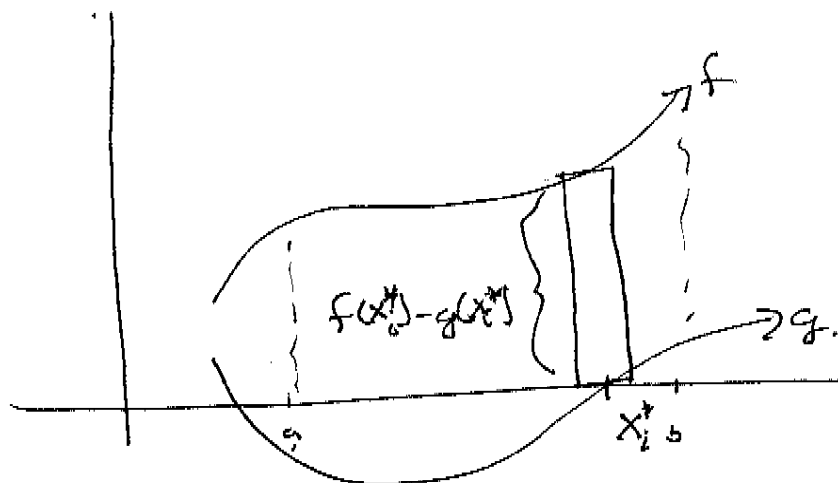


6.1
1/2

6.1: Areas between Curves



The area of the region bounded by $f(x)$, $g(x)$, $x=a$, and $x=b$, where f, g are cont. and $f(x) \geq g(x)$ for $x \in [a, b]$ is:

$$A = \int_a^b [f(x) - g(x)] dx$$

Ex 1: Find the area of the region bounded by $y = \sin(x)$, $y = \cos(x)$, $x=0$, and $x = \frac{\pi}{4}$.

Ex 2: Find the area between $y = 12 - x^2$ and $y = x^2 - 6$.

Ex 3: Find the area between $y = x$ and $y = -x$ on $[-2, 2]$

0.1
2/2

The area between the curves $y=f(x)$ and $y=g(x)$ and between $x=a$ or $x=b$ is

$$A = \int_a^b |f(x) - g(x)| dx$$

Ex 4: Find the area between $x = y^2 - 4y$
and $x = 2y - y^2$.