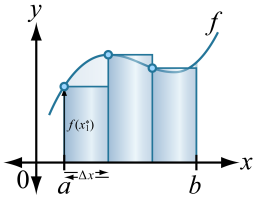
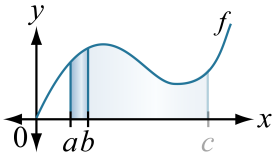
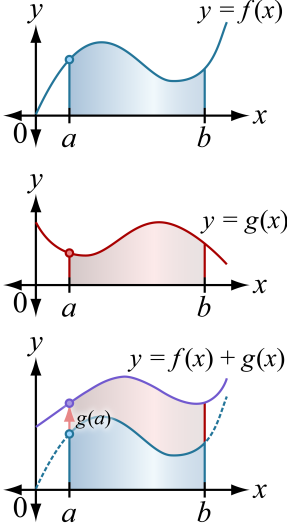
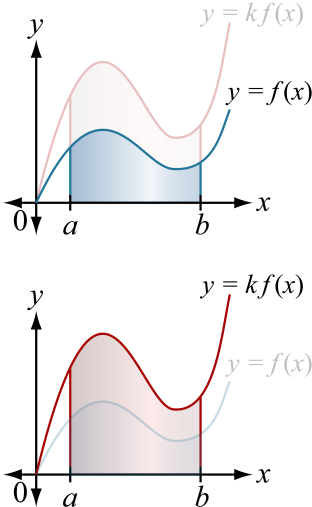
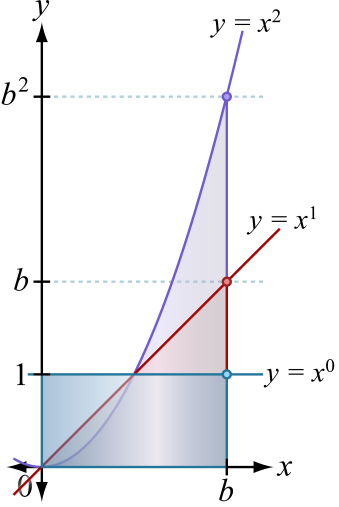


Selected properties of definite integrals and antiderivatives

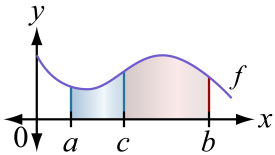
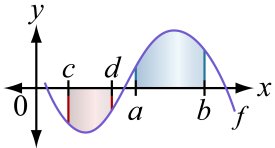
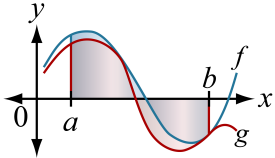
(provided that f and g are continuous)

Example	Property for definite integrals	Property for antiderivatives
	$\int_b^a f(x) \, dx = - \int_a^b f(x) \, dx$	
	$\int_a^a f(x) \, dx = 0$	
	$\int_a^b [f(x) \pm g(x)] \, dx = \int_a^b f(x) \, dx \pm \int_a^b g(x) \, dx$	$\int [f(x) \pm g(x)] \, dx = \int f(x) \, dx \pm \int g(x) \, dx$

Selected properties of definite integrals and antiderivatives

Example	Property for definite integrals	Property for antiderivatives
	$\int_a^b k f(x) dx = k \int_a^b f(x) dx, \quad k \text{ is a constant}$	$\int k f(x) dx = k \int f(x) dx, \quad k \text{ is a constant}$
	$\int_a^b x^n dx = \frac{b^{n+1}}{n+1} - \frac{a^{n+1}}{n+1}, \quad n \neq -1$	$\int x^n dx = \frac{x^{n+1}}{n+1} + C, \quad n \neq -1$

Selected properties of definite integrals and antiderivatives

Example	Property for definite integrals	Property for antiderivatives
	$\int_a^c f(x) \, dx + \int_c^b f(x) \, dx = \int_a^b f(x) \, dx$	
	If $a < b$ and $f(x) \geq 0$ on $[a, b]$, then $\int_a^b f(x) \, dx \geq 0$	
	If $a < b$ and $f(x) \geq g(x)$ on $[a, b]$, then $\int_a^b f(x) \, dx \geq \int_a^b g(x) \, dx$	

This sheet is organized to be convenient to use alongside Stewart 4th ed.