



Limits		
> $\text{limit}(g, t = 0);$	0	#The limit of g as t approaches 0

Functions

Defining		
> $f := x \rightarrow 2 \cdot x^3 + 5 \cdot x^2;$	$f := x \rightarrow 2 \cdot x^3 + 5 \cdot x^2$	#Defines the function $f(x) = 2 \cdot x^3 + 5 \cdot x^2$
Solving		
> $f(4);$	208	#Solves $f(4)$
> $\text{solve}(f(x) = 208);$	$4, -\frac{13}{4} - \frac{1}{4} \cdot i \sqrt{247}, -\frac{13}{4} + \frac{1}{4} \cdot i \sqrt{247}$	#Solves for x when $f(x)=208$ # $f(x)$ acts like an expression here
> $\text{fsolve}(f(x) = 208);$	4.	#Solves for x when $f(x)=208$ #Uses floating point arithmetic
Differentiating and Integrating		
> $D(f)$	$x \rightarrow 6x^2 + 10x$	#First derivative of $f(x)$
> $D(D(f))$	$x \rightarrow 12x + 10$	#Second derivative of $f(x)$
> $D(f)(4);$	136	#Value of the first derivative of $f(x)$ when $x=4$
> $\text{int}(f(x), x);$	$\frac{1}{2}x^4 + \frac{5}{3}x^3$	#Integrates $f(x)$ with respect to x # $f(x)$ acts like an expression here
> $\text{int}(f(x), x = 0 .. 6);$	1008	#Integrates $f(x)$ with respect to x from $x=0$ to $x=6$

For more information or to book an appointment

Call: 905.721.8668 ext. 6578

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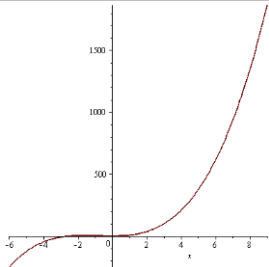
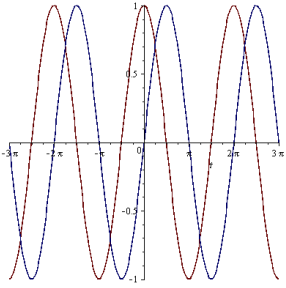
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Plotting		
<pre>>plot(f,-6..9);</pre>		<pre>#Plots f(x) vs. t (for a range of x from -6 to 9)</pre>
<pre>>i := t→sin(t);</pre>	<pre>i := t→sin(t)</pre>	<pre>#Defines the function i(t) = sin(t)</pre>
<pre>>j := t→cos(t);</pre>	<pre>j := t→cos(t)</pre>	<pre>#Defines the function j(t) = cos(t)</pre>
<pre>>plot([i,j], -3·Pi..3·Pi);</pre>		<pre>#Plots the function, i and j, vs. t (for a range of t=-3Pi to 3Pi)</pre>
Limits		
<pre>>limit(i(t), t = 0);</pre>	<pre>0</pre>	<pre>#The limit of i(t) as t approaches 0</pre>

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