1 Lesson 1: The Basics of Scientific Workplace

This lesson covers the basic use of toolbars, special characters, table construction and formatting, elementary mathematical input and calculations, and basic plotting.

1.1 Toolbars

Select Toolbars under the View menu to display or hide a particular toolbar.

1.2 Special Characters

"$\bar{\text{A}}\dot{\text{G}}\imath\hat{\text{h}}$"

1.3 Tables

We will generate the table

	my label	
Don Jones	Tom Price	Judy
$\overbrace{\text{Thomas}}$	Sam	Pete

1.4 The Basics of Entering Mathematics

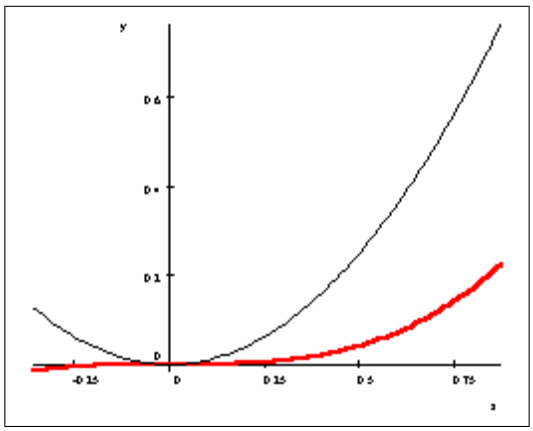
To integrate $\int x^2 dx$ we will first create a displayed equation and enter or copy the given integral:

$$\int x^2 dx = \frac{1}{3}x^3$$

A **definite integral** is just as easy to compute: $\int_2^3 x^2$

$$\int_2^3 x^2 dx = \frac{19}{3}$$

1.4.1 Plotting $\int x^2 dx$



my graph

1.4.2 Adding functions to plots

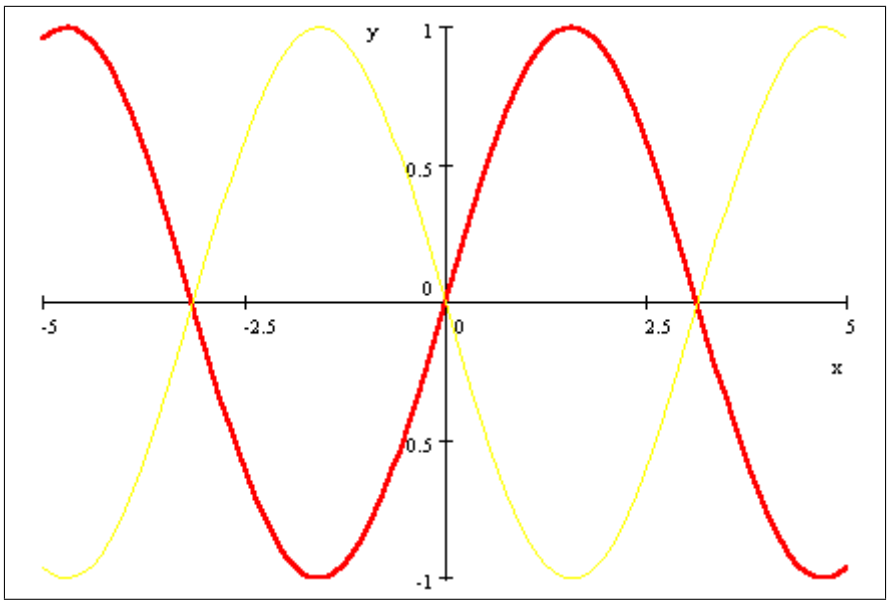
2 Project 1

Instructions: Create a file containing the items below exactly as they appear (for example, in-line mode, display mode). Submit your file to teprice@uakron.edu. The name of your file should be of the form **yourlastname01.tex**. All calculations should be done using the CAS in SWP.

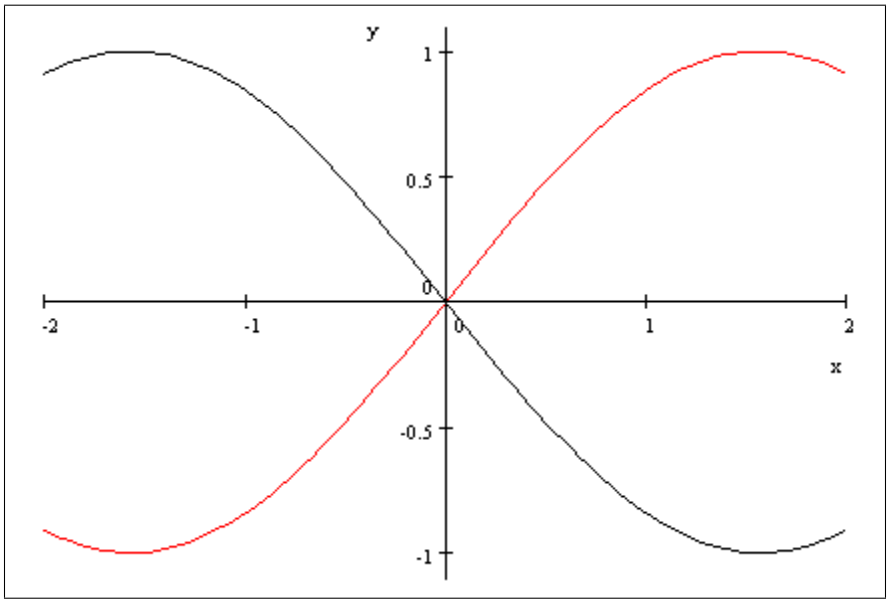
Use SWP to type the integral $\int \cos x dx$. Next, calculate this integral..

$$\int \cos x dx = \sin x$$

Graph $\int \cos x dx$ and $\frac{d}{dx} \cos x$ on one set of axes and with different colors representing each graph.



Exercise 1 *Create a copy of the above graph using copy/paste and zoom in so the graph is restricted to the interval* $[-2, 2]$.



Exercise 2 *Create the definite integral* $\int_{-\pi}^{\pi} \cos x dx$ *and compute its value:*

$$\int_{-\pi}^{\pi} \cos x dx = 0$$

Type the sentence in italics *"Every problem contains its own solution."* and then type the (emphasized) sentence *"Every problem contains its own solution."*

Create a table such as the one below.

Student\Score	Test 1	Test 2
Julie	95	87
Pete	99	100
David	88	97
Sue	89	98

Copy the above table and add two rows and one column to your copy as shown below.

Student\Score	Test 1	Test 2	
Julie	95	87	
Pete	99	100	
David	88	97	
Sue	89	98	