

## Differential Equations Help Contents

The Contents lists Help topics available for Differential Equations. Use the scroll bar to see entries not currently visible in the Help window.

To learn how to use Help, press F1 or choose Using Help from the Help menu

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## Selecting Chapters and Sections



To select a chapter or section double click with the mouse or use the up and down arrow keys to highlight the topic and then press the ENTER key. This brings up the Problems window.

## Viewing Problems

Click the part of the Problems window that you want to know more about.

**Section 4.3 Non-Homogeneous Equations; Undetermined Coefficients**

Example Worked Details Calculator Print Score Help Exit

example worked details calculator 100% Exit

**Total Problems 10**

**Instructions**  
Find the particular solution for the given fundamental  
set of solutions (to the homogeneous equation)

**PROBLEM 1**  $y'' + 4y' + 3y = 2x$  Fundamental set are  $e^{-2}$  and  $e^{-3x}$

A)  $\frac{2}{3}x + \frac{8}{9}$  B)  $\frac{2}{3}x - \frac{8}{9}$   
C)  $-\frac{2}{3}x + \frac{8}{9}$  D)  $-\frac{2}{3}x - \frac{8}{9}$

A  B  C  D

Select **A**, **B**, **C** or **D** as your choice for the answer to the problem. A right or wrong response will then appear.

Select PageUp to view the previous problem and PageDown to see the next problem.

This is the display area for all problems.

Instructions for all problems of this type.

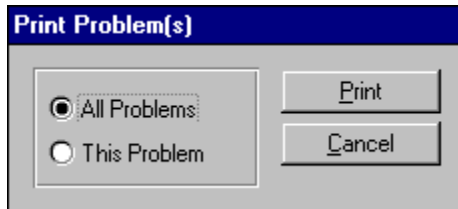
The Example window displays an example problem similar to the current one you are viewing in the Problems window.



The Worked window displays the current problem worked out step-by-step.

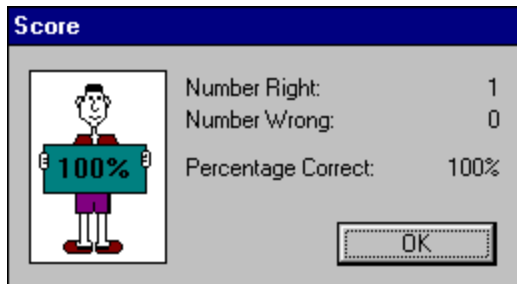
The Details window describes in depth the material needed to successfully complete the problem.

## Printing Problems



Clicking this option allows you to print **one** or **all** of the problems in this section.

## Your Score



A dialog box titled "Score" with a blue header. On the left is a cartoon character holding a sign that says "100%". To the right of the character, the following statistics are listed:

Number Right:	1
Number Wrong:	0
Percentage Correct:	100%

At the bottom right of the dialog box is an "OK" button.

Clicking on this option will display the number of correct and incorrect answers that you have chosen in this section. If you answered a problem incorrectly and went back and changed it to the correct answer, it would no longer be counted as incorrect. Your score is not available in a review section.

Closes the window.

## **The Resume Feature**

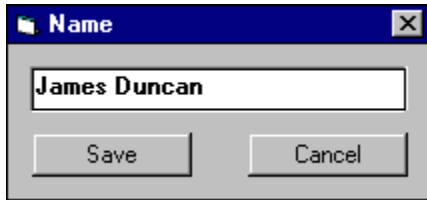
By clicking this option the program will automatically return you to the chapter, section and problem that you were working on before you last exited the program. All your previous answers for that section are also restored.

## Playing Sounds

To play the sounds that come with this program, you'll need to click over the **Sound** option located on the main menu bar. You can either enable or disable the programs ability to play sounds by clicking over the appropriate command. The current option selected will have a check mark in front of it and the settings are automatically saved when they are changed. To properly hear the sound (.WAV) files you'll need to have a sound driver installed as well as a sound card that gives you sound capabilities. Consult your Windows or sound card documentation for further assistance.

Many thanks to **Jim Faircloth** for the use of his voices and music. Also, many thanks to **Beachware** for letting us use some of the sounds from their Shareware Breakthrough Sound Works Collection in this program.

## Entering Your Name



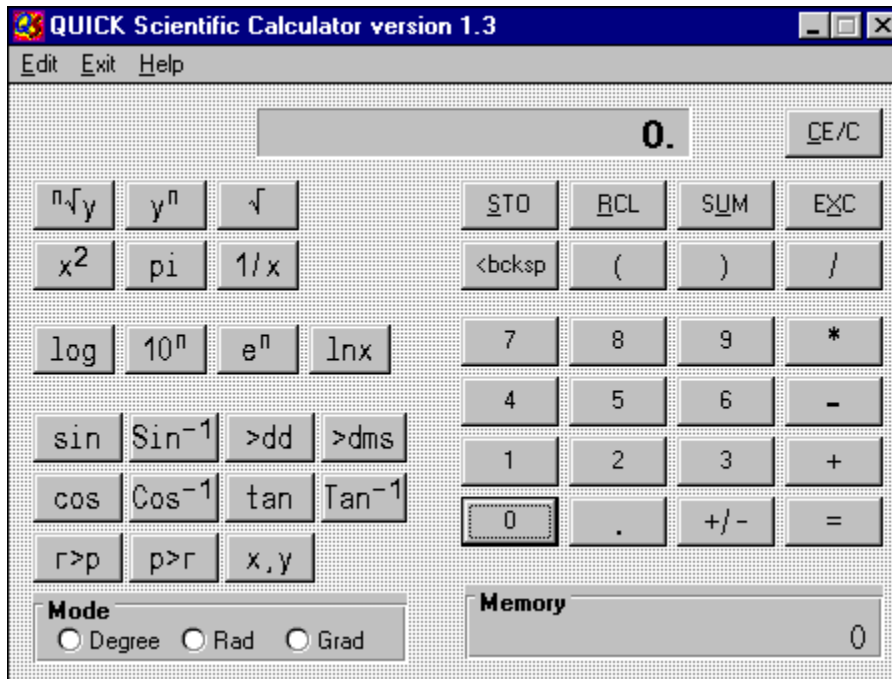
Clicking this option allows you to enter and save your name. When you send problems to the printer the name saved here will be displayed at the top of the printout.



## **Review Sections**

Reviews are a compilation of all the sections in the chapter. No examples, worked, or details text can be displayed in a review section; however, your score and right or wrong responses are available.

## Calculator Help



Click the part of the Calculator window that you want to know more about.

Finds y raised to the nth power.  $3^2 = \underline{9}$

Returns the square root of the number.

Returns the number squared.

Returns the constant pi.

Calculates the common logarithm (base 10) of the number being displayed.

Calculates the common antilogarithm of the number being displayed, by raising 10 to the displayed power.



Calculates the natural antilogarithm of the number being displayed. It raises the constant **e** to the displayed power.

Calculates the natural logarithm (base e) of the number being displayed.

Returns the sine of the value being displayed.

Returns the sine inverse of the value being displayed.

Returns the cosine of the value being displayed.

Returns the cosine inverse of the value being displayed.

Returns the tangent of the number being displayed.

Returns the tangent inverse of the value being displayed.



Converts degrees, minutes, seconds to decimal degrees.

Converts decimal degrees to degrees, minutes, seconds.

Changes rectangular coordinates to polar coordinates.

Changes polar coordinates to rectangular coordinates.

Values will display in degrees.

Values will display in radians.

Values will display in gradients.

The display area for the entered/computed values.



Parentheses - used for parenthetical expressions. i.e.  $(7+3)/2 = \underline{5}$

Used to separate x,y values when changing polar to rectangular or rectangular to polar coordinates. i.e. to convert (7,8) from rectangular to polar enter: 7 <x,y> 8 <p>r>  
36.8698 <x,y> 10.

Clicking on this key causes the displayed value to be stored in the memory register replacing any value already in that register.

Clicking on this key copies the contents of the memory register to the displayed value window. The value in the memory register now becomes the displayed value.

Clicking on this key sums the displayed value and the contents of the memory register with the result being stored in the memory register.

Clicking on this key causes the displayed value and the contents of the memory register to be exchanged.

Clicking on this key clears the current calculation and displayed value. This key **does not** clear the memory register. To do that click on this key and then click the STO key.

Clicking on this key deletes the last digit of the displayed value during the entry process. This key is general used to edit an entry if the wrong digit was pressed.



division operator.

multiplication operator

subtraction operator

addition operator

= performs any calculation on the previous two numbers.

square root function

Clicking on the key finds the  **$n$ th** root of  **$x$** . Enter  **$x$** , click this key, enter  **$n$**  and click the EQUAL key.

Clicking on this key calculates  $x$  to the **nth** power.



the memory register

changes the sign of the displayed value

inserts a decimal point

returns the reciprocal of the displayed value  $1/x$

