

# Special Products

Source: Technical Mathematics  
With Calculus.  
John C. Peterson  
1994

Table of Special Products from page 243,  
or any other Math books.

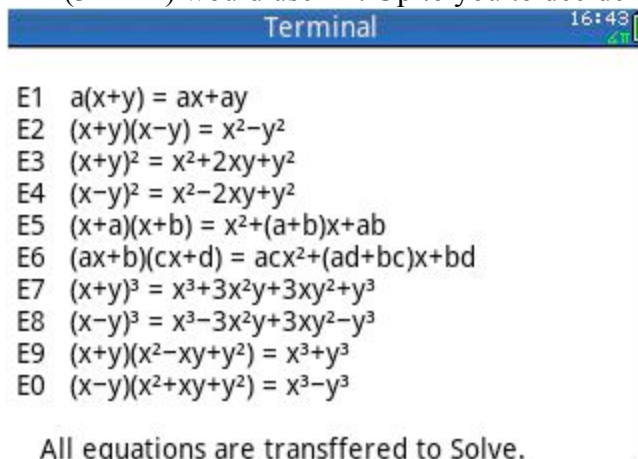
The program “specprod” is meant to solve the equations numerically.

Option 1 in the Main Menu allows you to change the #Format and number of Digits below the decimal point. I did preset Format to 2=Fix, and Digit to 3=0.000, but you can change that with Option 1, but you cannot change it back once the program has transferred the equations to the SOLVE App.

As the screen below indicates all equations are transferred to the SOLVE App by the program initially. Rule #1 is stored in E1 ----- rule #10 is stored in E0.

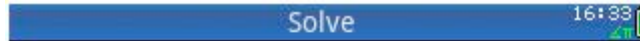
The only difference between the equations below and those in the Solver is that the Solver uses Upper case letters as (A,B,C,D,X,Y and S).

The equation  $2A(3m+2n)$  would use E1. Up to you to decide which Rule to use.

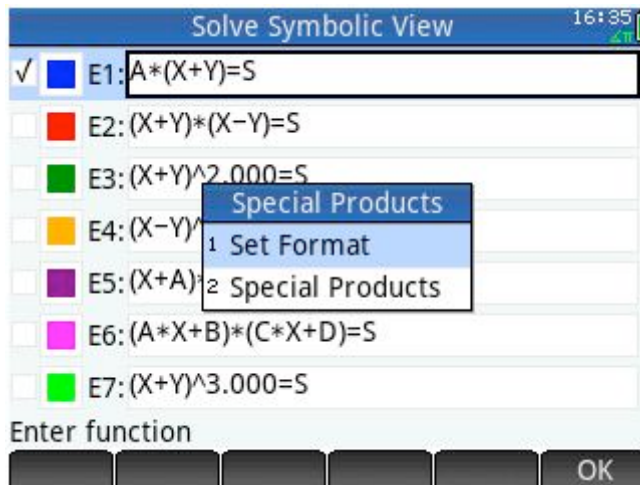


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Terminal 16:43
E1 a(x+y) = ax+ay
E2 (x+y)(x-y) = x^2-y^2
E3 (x+y)^2 = x^2+2xy+y^2
E4 (x-y)^2 = x^2-2xy+y^2
E5 (x+a)(x+b) = x^2+(a+b)x+ab
E6 (ax+b)(cx+d) = acx^2+(ad+bc)x+bd
E7 (x+y)^3 = x^3+3x^2y+3xy^2+y^3
E8 (x-y)^3 = x^3-3x^2y+3xy^2-y^3
E9 (x+y)(x^2-xy+y^2) = x^3+y^3
E0 (x-y)(x^2+xy+y^2) = x^3-y^3

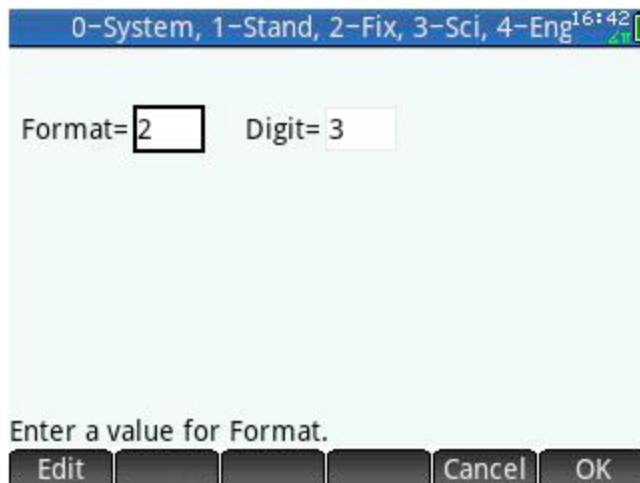
All equations are transferred to Solve.
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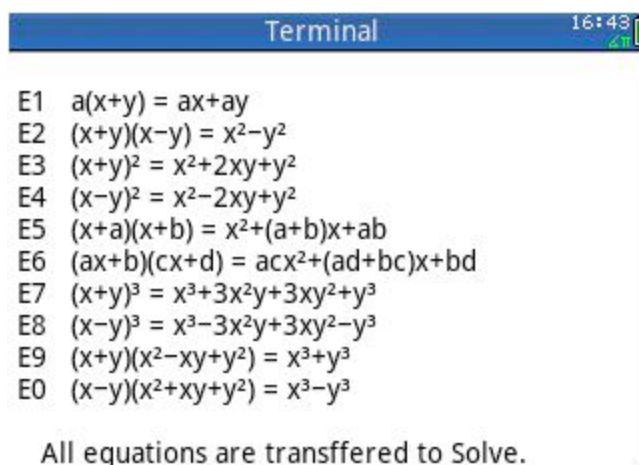


You can start the program by typing <specprod> in the command line or select it from the program list.

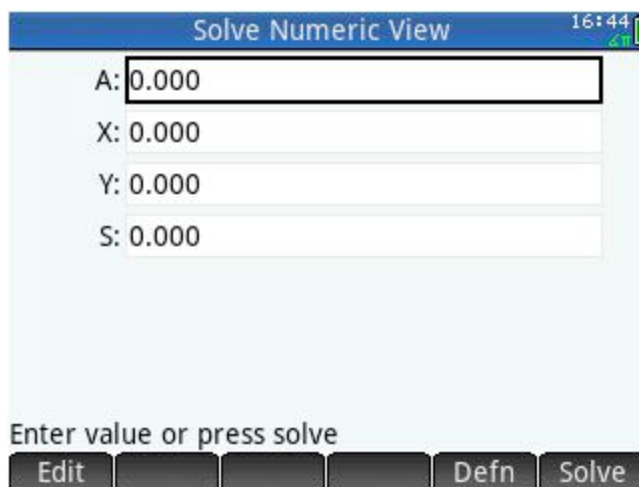


The program has started the Solve App. And give you two Options.  
If you accept the default for Set Format, simply press 2 to go to Special Products.

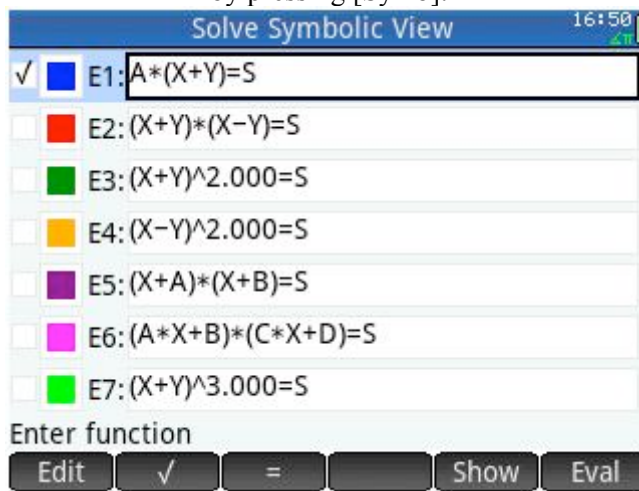




The above screen gives you the list of Special Products rules.  
 From the list you can select the equation you need and note its # such as E1 to E0.  
 Press [Enter]



Initially the Solver will use E1 and display the above screen. You can select a different equation by pressing [Symb].



Press [Num] to return to the previous screen.

**Solve Numeric View** 16:44

A: 0.000

X: 0.000

Y: 0.000

S: 0.000

Enter value or press solve

Edit Defn Solve

Try  $6(3x+2y)=6*3x+6*2y$ .

**Solve Numeric View** 16:49

A: 6.000

X: 24.000

Y: 12.000

S: 216.000

Enter value or press solve

Edit Info Defn Solve

A=6 [Enter] X=3\*8 [Enter] Y=2\*6 [Enter] . S=216

**Solve Symbolic View** 16:53

☐ E4:  $(X-Y)^{2.000}=S$

☐ E5:  $(X+A)*(X+B)=S$

☐ E6:  $(A*X+B)*(C*X+D)=S$

☐ E7:  $(X+Y)^{3.000}=S$

☐ E8:  $(X-Y)^{3.000}=S$

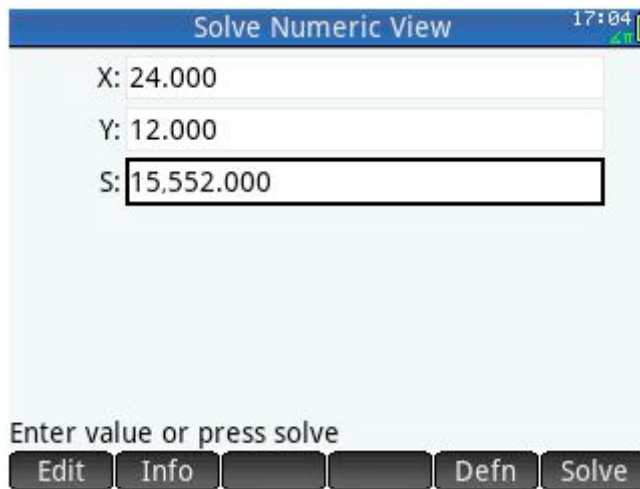
☒ E9:  $(X+Y)*(X^2.000-X*Y+Y^2.000)=S$

☐ E0:  $(X-Y)*(X^2.000+X*Y+Y^2.000)=S$

Enter function

Edit √ = Show Eval

Press [Symb]. Next uncheck E1. Scroll the screen UP. and check E9 as above. Press [Num].



Here enter 24 in X and 12 in Y. Note that 216 is still in S as the previous results are retained in the variables. When you press Solve S will change to 15,552.000.

From this point you remain in the Solve App. And can keep changing equations by pressing [Symb] Uncheck and Check a new equation press [Num] enter data and solve for S.

To exit press [Home].

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