

Triangle Solver

Library 264

Based on Triangle solver applet from HP40gs only for the HP49G+ & HP50G
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The Triangle Solver allows you to determine the length of a side of a triangle, or the angle at the vertex of a triangle, from information you supply about the other lengths and/or other angles.

You need to specify at least three of the six possible values—the lengths of the three sides and the size of the three angles—before the solver can calculate the other values. Moreover, at least one value you specify must be a length. For example, you could specify the lengths of two sides and one of the angles; or you could specify two angles and one length; or all three lengths. In each case, the solver will calculate the remaining lengths or angles.

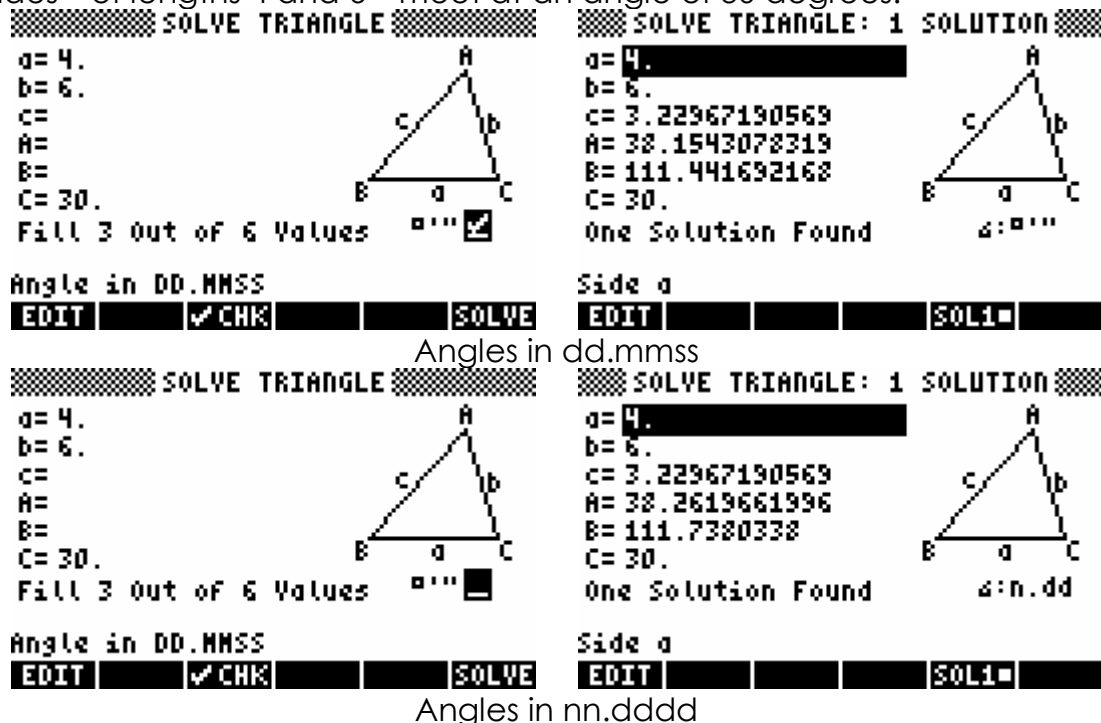
The Solver will alert you if no solution can be found, or if you have provided insufficient data.

Send and Install the library at the port :2:FLASH and then Reset the Calculator, you must be press right shift and NUM.SLV to access to 7.Solve triangle..



Getting started with the Triangle Solver

The following example solves for the unknown length of the side of a triangle whose two known sides—of lengths 4 and 6—meet at an angle of 30 degrees.



Reset data

SOLVE TRIANGLE

a= 4.
b= 6.
c=
A=
B=
C= 30.

Reset value
Reset all

Fill 3 Out of 6 Values ☐ ☐ ☐ ☐ ☐ ☐

Angle in DD.MMSS

SOLVE TRIANGLE

a=
b=
c=
A=
B=
C=

Fill 3 Out of 6 Values ☐ ☐ ☐ ☐ ☐ ☐

Angle in DD.MMSS

Examples

Three angles, triangle not solved.

SOLVE TRIANGLE

a=
b=
c=
A= 90.
B= 40.
C= 50.

Fill 3 Out of 6 Values ☐ ☐ ☐ ☐ ☐ ☐

Angle in DD.MMSS

SOLVE TRIANGLE

a=
b=
c=
A= 9
B= 4
C= 50.

No solution found

Fill 3 Out of 6 Values ☐ ☐ ☐ ☐ ☐ ☐

Angle in DD.MMSS

Two solutions. Push SOL1 or SOL2.

SOLVE TRIANGLE

a= 5.
b= 4.
c=
A=
B= 29.3025
C=

Fill 3 Out of 6 Values ☐ ☐ ☐ ☐ ☐ ☐

Angle in DD.MMSS

SOLVE TRIANGLE: 2 SOLUTIONS

a= 5.
b= 4.
c= 7.50352356732
A= 37.5959956259
B= 29.3025
C= 112.293504374

Two Solutions Found

Side a

SOLVE TRIANGLE

a= 5.
b= 4.
c=
A=
B= 29.3025
C=

Fill 3 Out of 6 Values ☐ ☐ ☐ ☐ ☐ ☒

Angle in DD.MMSS

SOLVE TRIANGLE: 2 SOLUTIONS

a= 5.
b= 4.
c= 1.19943649408
A= 142.000004374
B= 29.3025
C= 8.29349562616

Two Solutions Found

Side a

Triangle Rectangle

SOLVE TRIANGLE

a= 4.
b= 3.
c=
A=
B=
C= 90.

Fill 3 Out of 6 Values ☐ ☐ ☐ ☐ ☐ ☒

Angle in DD.MMSS

SOLVE TRIANGLE: 1 SOLUTION

a= 4.
b= 3.
c= 5.
A= 53.0748368475
B= 36.5211631525
C= 90.

One Solution Found

Side a

Extras:

The solutions (one and two solutions) are stored in variables: **a, b, c, A, B, C** and **a', b', c', A', B', C'**.

Angles are not stored in hh.mmss format.

Only solve triangles using mode DEG, the solver change to mode DEG.

DEG XYZ HEX R= 'X'						DEG XYZ HEX R= 'X'					
{HOME}						{HOME}					
10:						10:					
9:						9:					
8:						8:					
7:						7:					
6:					4.	6:					4.
5:					3.	5:					3.
4:					5.	4:					5.
3:				53.1301023542		3:				53.1301023542	
2:				36.8698976458		2:				36.8698976458	
1:				90.		1:				90.	
a	b	c	A	B	C	a'	b'	c'	A'	B'	C'

Bibliography:

"Trigonometría Plana y Esférica" Colección Schaum.

"HP 40gs graphing calculator user's guide" HP invent Edition1

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