STRAIGHT LINES V1.2

This short program from the field “Vector Algebra” finds for two straight lines described as

L1: [a,b,c] + \*[d,f,g] and L2: [k,l,m]+ \*[n,o,p]

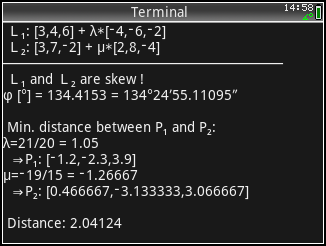
the distance between the lines, the points P1 and P2 of the minimal distance on both lines, the intersection angle and checks, whether the lines are parallel or have a common point of intersection. If [n,o,p] is entered as [0,0,0], the problem is handled as straight line L1 and point P with coordinates [k,l,m]. In this case the program finds the distance, the base point of perpendicular Pn , the perpendicular vector ~~P~~ and the reflected point P0’ . Subprogram Line by 2Points(a,b,c,f,g,h) finds the equation, if two points P1 (a,b,c) and P2 (f,g,h) are given.

*EXAMPLE 1:*

Given are the lines L1: [3,4,6] +\*[-4,-6,-2] and L2: [3,7,-2} +[2,8,-4]. To start, select

LINES, StraightLine and press ‘Enter’ .

Fill in: StraightLine(3,4,6,-4,-6,-2,3,7,-2,2,8,-4) and press ‘enter’.

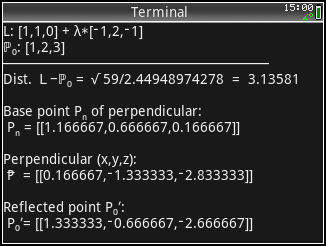
Result: 

*EXAMPLE 2:*

Given L1: [1,1,0]+-1,2,-1] and point P0: [1,2,3]. Find the distance, point of perpendicular Pn, the perpendicular ~~P~~ and the reflected point P0’ .

Select LINES, StraightLine and press ‘Enter’ .

Fill in: StraightLine(1,1,0,-1,2,-1,1,2,3,0,0,0) and press ‘enter’.

Result: 

Claus Dachselt

*clan.dachselt@t-online.de*