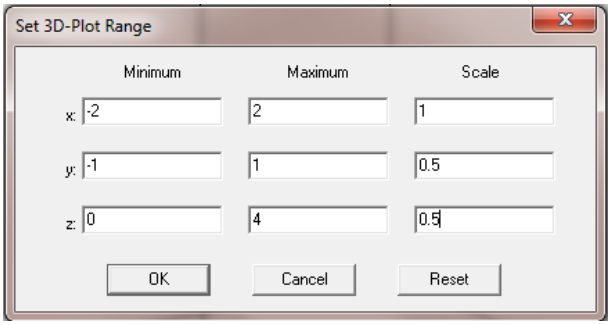
Plotting 3-D Curves and Surfaces in Derive – Prof. Richard B. Goldstein

Plot: x = 2 cos t y = sin t z = t and its tangent at the point (0, 1, π/2) (Sect 13.2 Stewart)

#1 [2cos(t),sin(t),t]

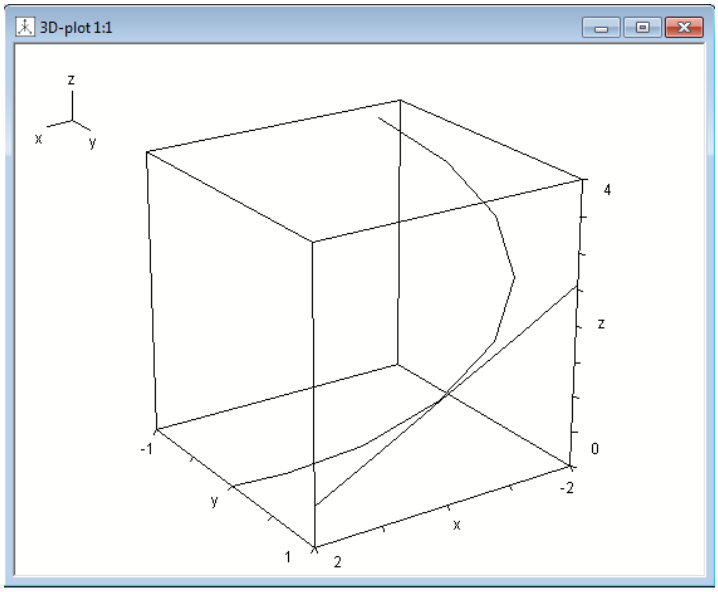
Select the 3-D plot window with icon 

Select Set | Plot Range (or Ctrl-r) and adjust as follows:



Enter [-2t,1,π/2+t] the tangent vector at t = π/2

Press the icon  again

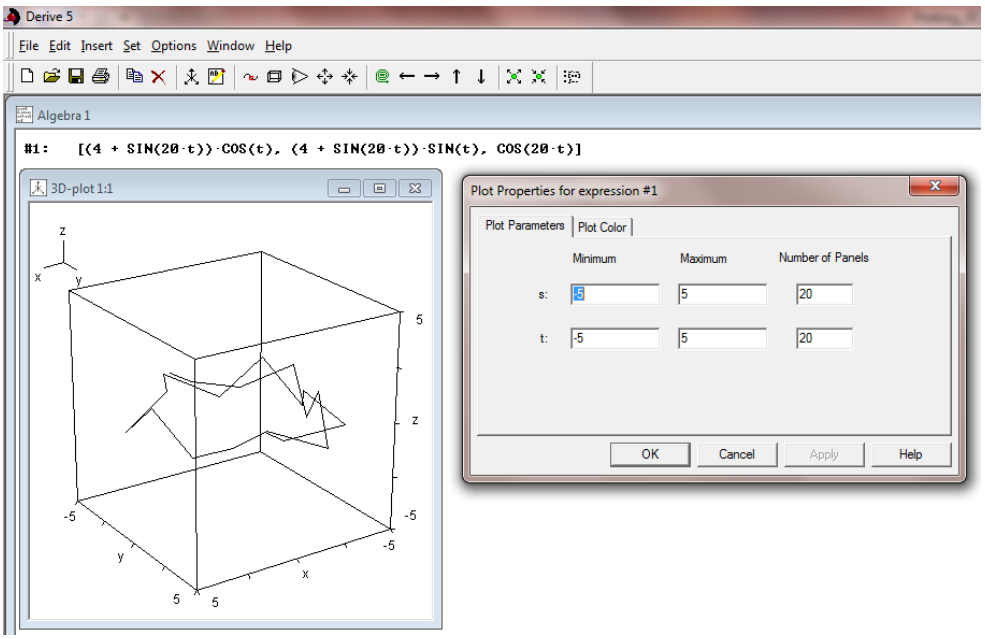


Plot: x = (4+sin(20t))cos(t) y = (4+sin(20t))sin(t) z = cos(20t) (Sect 13.1 Stewart)

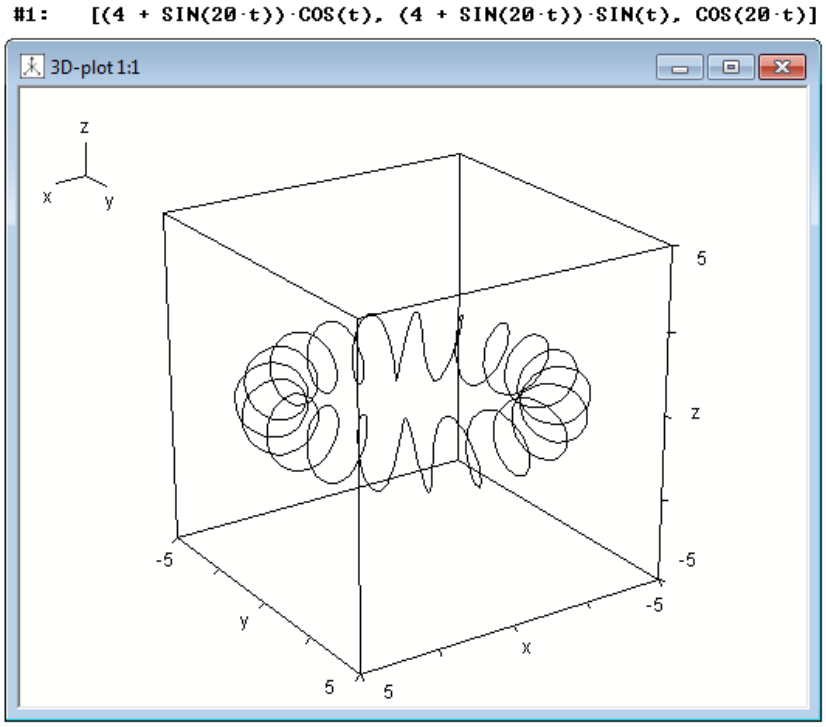
#1 [(4+sin(20t))cos(t),(4+sin(20t))sin(t),cos(20t)]

Select the 3-D plot window with icon 

The plot shows (however, not enough detail – see figure 7 in 13.1 Stewart)



In the 3-D Plot window select Edit | Plot and for the t parameter use -3.14 to 3.14 in 628 steps



Plot: $z = \dfrac{xy(x^2 - y^2)}{x^2 + y^2}$ a saddle where $f_{xy}(0,0) \neq f_{yx}(0,0)$