

kill(all)

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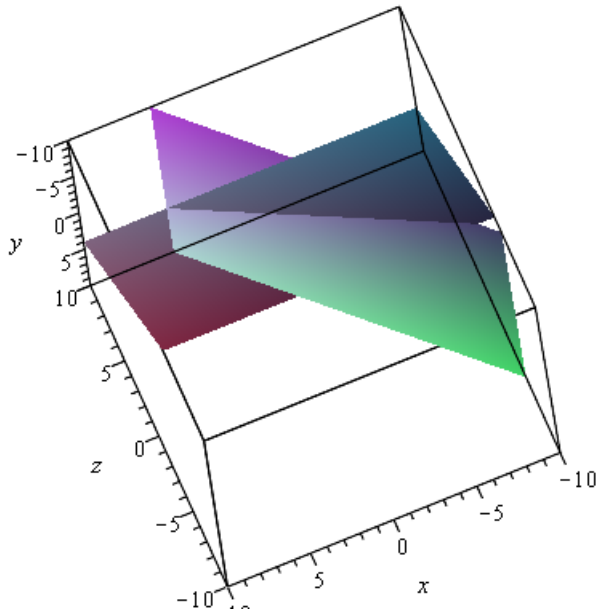
(1)

with(plots) :

plot1 := implicitplot3d(x = z - 5, x = -10 ..10, y = -10 ..10, z = -10 ..10) : %:

plot2 := implicitplot3d(y = z - 6, x = -10 ..10, y = -10 ..10, z = -10 ..10) : %:

display([plot1, plot2])

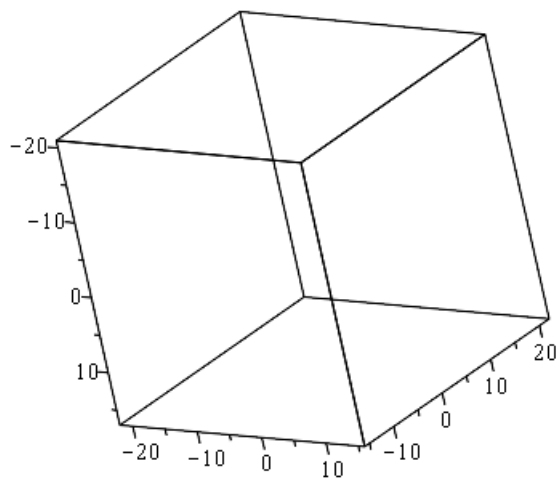


with(Student[VectorCalculus])

[&x, ``, `+`, `-', `.`; <, >, <|>, About, ArcLength, BasisFormat, Binormal, ConvertVector, CrossProduct, Curl, Curvature, D, Del, DirectionalDiff, Divergence, DotProduct, FlowLine, Flux, GetCoordinates, GetPVDDescription, GetRootPoint, GetSpace, Gradient, Hessian, IsPositionVector, IsRootedVector, IsVectorField, Jacobian, Laplacian, LineInt, MapToBasis, Nabla, Norm, Normalize, PathInt, PlotPositionVector, PlotVector, PositionVector, PrincipalNormal, RadiusOfCurvature, RootedVector, ScalarPotential, SetCoordinates, SpaceCurve, SpaceCurveTutor, SurfaceInt, TNBFrame, Tangent, TangentLine, TangentPlane, TangentVector, Torsion, Vector, VectorField, VectorFieldTutor, VectorPotential, VectorSpace, diff, evalVF, int, limit, series]*

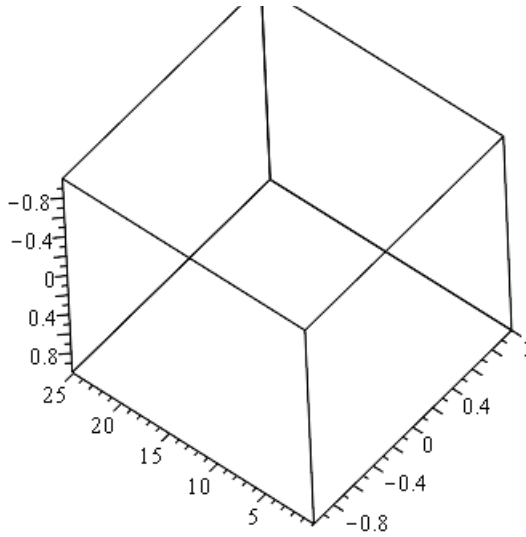
SpaceCurve(<t - 5, t - 6, t>, t = -16 ..22, thickness = 2, color = black)

(2)



Graph of the curve represented parametrically by the components of the given vector.

SpaceCurve($\langle \cos(t), \sin(t), t \rangle$, $t = 0 .. 8 \cdot \text{Pi}$, *thickness* = 2, *color* = black)



Graph of the curve represented parametrically by the components of the given vector.

with(LinearAlgebra) :

$A := \langle \langle 1, 3, 5 \rangle | \langle 1, 4, 2 \rangle | \langle 2, 1, 5 \rangle | \langle 7.5, 12, 21 \rangle \rangle$

$$\begin{bmatrix} 1 & 1 & 2 & 7.5 \\ 3 & 4 & 1 & 12 \\ 5 & 2 & 5 & 21 \end{bmatrix}$$

(3)

ReducedRowEchelonForm(A)

$$\begin{bmatrix} 1. & 0. & 0. & 1.2000000000000000 \\ 0. & 1. & 0. & 1.5000000000000000 \\ 0. & 0. & 1. & 2.4000000000000000 \end{bmatrix}$$

(4)

RowOperation(A, [2, 1], -3)

$$\begin{bmatrix} 1 & 1 & 2 & 7.5 \\ 0 & 1 & -5 & -10.5 \\ 5 & 2 & 5 & 21 \end{bmatrix}$$

(5)

RowOperation(%, [3, 1], -5)

$$\begin{bmatrix} 1 & 1 & 2 & 7.5 \\ 0 & 1 & -5 & -10.5 \\ 0 & -3 & -5 & -16.5 \end{bmatrix} \quad (6)$$

RowOperation(%, [3, 2], 3)

$$\begin{bmatrix} 1 & 1 & 2 & 7.5 \\ 0 & 1 & -5 & -10.5 \\ 0 & 0 & -20 & -48.0 \end{bmatrix} \quad (7)$$

RowOperation(%, 3, $-\frac{1}{20}$)

$$\begin{bmatrix} 1 & 1 & 2 & 7.5 \\ 0 & 1 & -5 & -10.5 \\ 0 & 0 & 1 & 2.400000000 \end{bmatrix} \quad (8)$$

ReducedRowEchelonForm(A)

$$\begin{bmatrix} 1. & 0. & 0. & 1.2000000000000000 \\ 0. & 1. & 0. & 1.5000000000000000 \\ 0. & 0. & 1. & 2.4000000000000000 \end{bmatrix} \quad (9)$$