```
(* CONUL PATRATIC *)
```

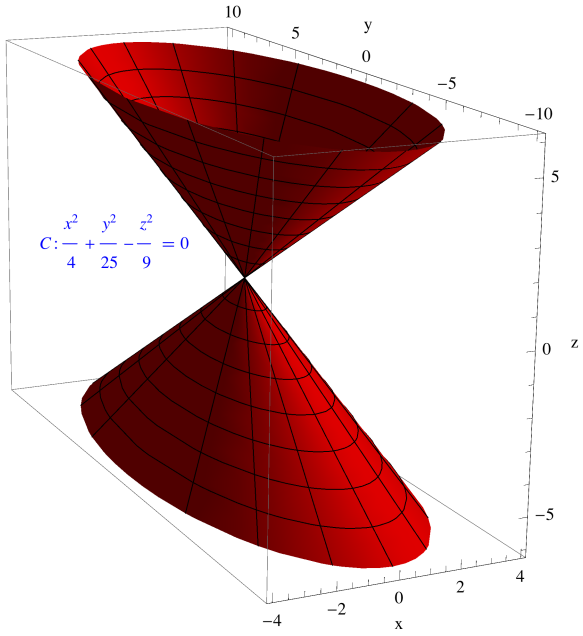
In[81]:=
```
a = 2;
b = 5;
c = 3;
```

In[84]:=
```
con = ParametricPlot3D[{a u Cos[t], b u Sin[t], c u},
    {t, 0, 2 Pi}, {u, -2, 2}, PlotStyle → Red, AxesLabel → {"x", "y", "z"}];
```

In[95]:=
```
TxtCon =
  Graphics3D[{Blue, Thickness[0.03], Text[C : x^2/a^2 + y^2/b^2 - z^2/c^2 == 0, {-2, 6, 0}]}];
```

In[96]:=
```
Show[con, TxtCon]
```

Out[96]=




```
(* INTERSECTII CU PLANE *)
```

In[99]:=
```
h = 3;
```

In[105]:=
```
con = ParametricPlot3D[{a u Cos[t], b u Sin[t], c u}, {t, 0, 2 Pi}, {u, -2, 2},
    PlotStyle → {Red, Opacity[0.3]}, AxesLabel → {"x", "y", "z"}];
```

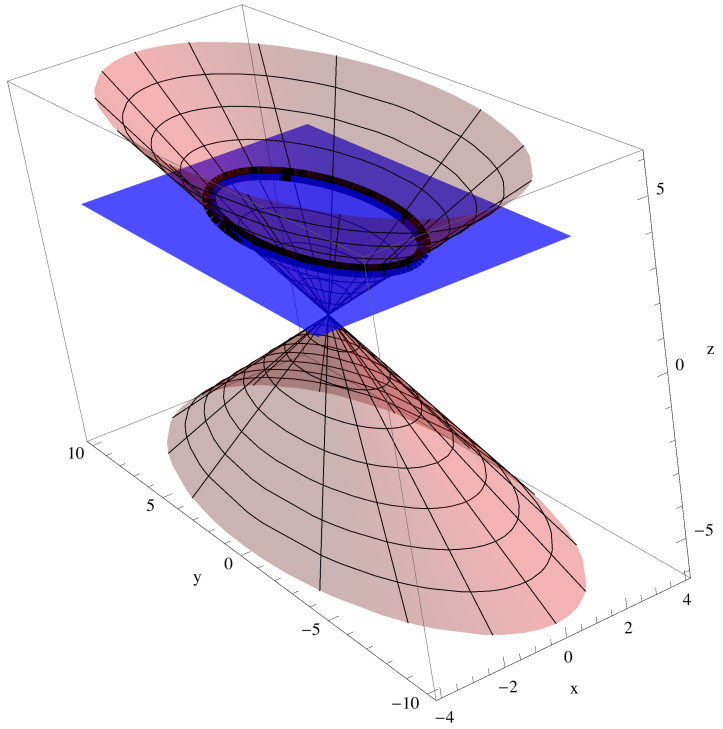
In[100]:=
```
PlanOriz = ParametricPlot3D[{x, y, h}, {x, -a - 2, a + 2},
    {y, -b - 2, b + 2}, PlotStyle → {Blue, Opacity[0.7]}, Mesh → None];
```

In[101]:=
```
u0 = h / c;
```

In[102]:=
```
CurbInt = ParametricPlot3D[{a u0 Cos[v], b u0 Sin[v], c u0},
    {v, 0, 2 Pi}, PlotStyle → {Black, Thickness[0.02]}];
```

In[106]:=
```
Show[con, PlanOriz, CurbInt]
```

Out[106]=




```
(*
      INTERSECTII CU PLANUL x+y+Sqrt[29]/3 z+dd=0  -- parabola
*)
```

In[105]:=
```
con = ParametricPlot3D[{a u Cos[t], b u Sin[t], c u}, {t, 0, 2 Pi}, {u, -2, 2},
   PlotStyle → {Red, Opacity[0.3]}, AxesLabel → {"x", "y", "z"}];
```

In[112]:=
```
C1 = Sqrt[29] / 3;
```

In[126]:=
```
dd = 4;
```

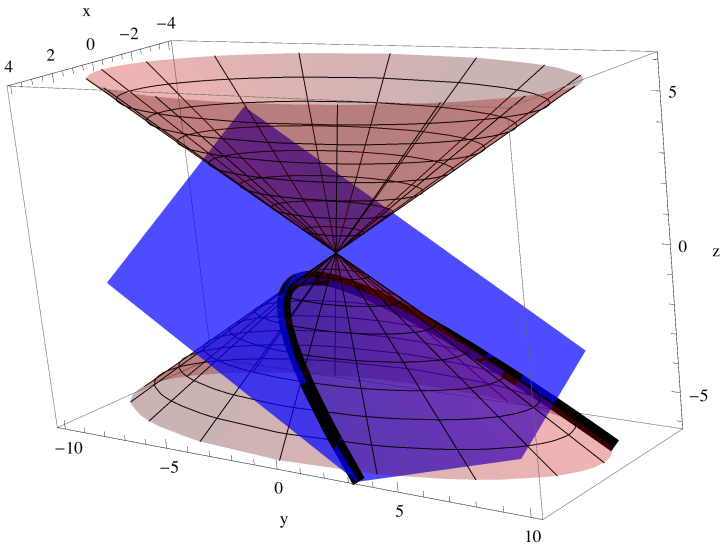
In[127]:=
```
PlanOblic1 = ParametricPlot3D[{{x, y, -(x + y + dd)/C1}, {x, -a - 2, a + 2},
   {y, -b - 2, b + 2}, PlotStyle → {Blue, Opacity[0.7]}, Mesh → None}];
```

In[128]:=
```
u0 = -dd/(C1 c + a Cos[v] + b Sin[v]);
```

In[129]:=
```
CurbInt = ParametricPlot3D[{a u0 Cos[v], b u0 Sin[v], c u0},
   {v, 0, 2 Pi}, PlotStyle → {Black, Thickness[0.02]}];
```

In[130]:=
```
Show[con, PlanOblic1, CurbInt]
```

Out[130]=




```
(*
      INTERSECTII CU PLANUL x+y=0  contine Oz -- drepte concurente
*)
```

In[105]:=
```
con = ParametricPlot3D[{a u Cos[t], b u Sin[t], c u}, {t, 0, 2 Pi}, {u, -2, 2},
   PlotStyle → {Red, Opacity[0.3]}, AxesLabel → {"x", "y", "z"}];
```

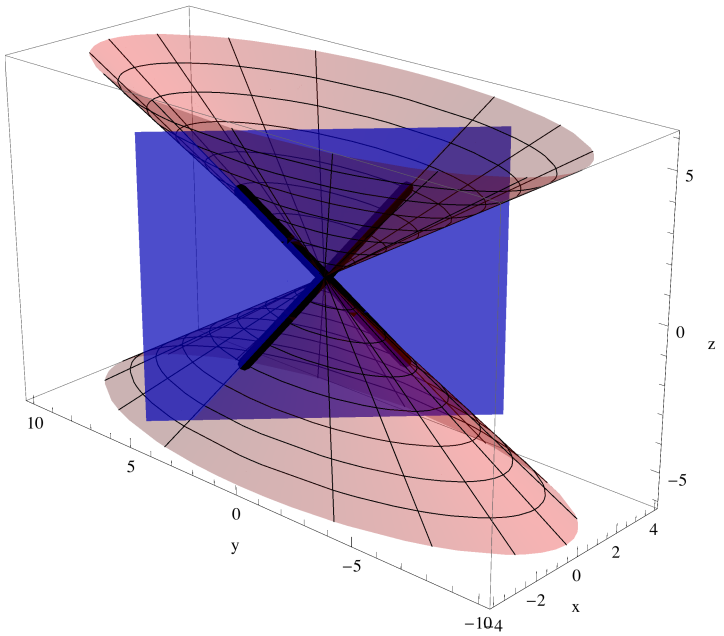
In[141]:=
```
PlanOblic2 = ParametricPlot3D[{x, -x, z}, {x, -7, 7},
   {z, -5, 5}, PlotStyle → {Blue, Opacity[0.7]}, Mesh → None];
```

In[146]:=
```
t0 = -ArcTan[a/b];
```

In[154]:=
```
CurbInt = ParametricPlot3D[
   {{a u Cos[t0], b u Sin[t0], c u}, {-a u Cos[t0], -b u Sin[t0], c u}},
   {u, -1, 1}, PlotStyle → {{Black, Thickness[0.02]}}];
```

In[155]:=
```
Show[con, PlanOblic2, CurbInt]
```

Out[155]=



In[193]:=
```
(*
        INTERSECTII CU PLANUL x+y+D=0  paralela cu Oz -- hiperbola
*)
```

In[194]:=
```
con = ParametricPlot3D[{a u Cos[t], b u Sin[t], c u}, {t, 0, 2 Pi}, {u, -2, 2},
   PlotStyle → {Red, Opacity[0.3]}, AxesLabel → {"x", "y", "z"}];
```

In[259]:=
```
dd = 3;
```

In[260]:=
```
PlanOblic3 = ParametricPlot3D[{x, -x - dd, z}, {x, -7, 7},
   {z, -5, 5}, PlotStyle → {Blue, Opacity[0.3]}, Mesh → None];
```

In[261]:=
$$u0 = \frac{-dd}{a\,\text{Cos}[t] + b\,\text{Sin}[t]};$$

In[265]:=
```
CurbInt = ParametricPlot3D[{a u0 Cos[t], b u0 Sin[t], c u0},
   {t, -Pi, Pi}, PlotStyle → {Black, Thickness[0.01]}];
```

In[266]:=
```
Show[con, PlanOblic3, CurbInt]
```

Out[266]=