

Chapitre 11 – AP3

Copies d'écran Xcas en mode Geo 3d

a.

```
1 P1:=plan(x-y+2z=0);P2:=plan(2x+y-3z=1);P3:=plan(3x-z=5)
  [pnt(pnt[hyperplan([1,-1,2],point[0,0,0]),0,"P1"]),pnt(pnt[hyperplan([2,1,-3],point[0,0,-1/3]),0,"P2"]),pnt(pnt[hyperplan([3,0,-1],point[0,0,-5]),0,"P3"])]
2 d:=inter(P1,P2)
  [pnt(pnt[line[point[17/59,1/59,-8/59],point[76/59,414/59,169/59]],0,"d"])]
3 inter(d,P3)
  group[]
4 resoudre([x-y+2z=0,2x+y-3z=1,3x-z=5],[x,y,z])
  []
```

b.

```
1 Q1:=plan(x+y-z=1);Q2:=plan(2x-y+z=2);Q3:=plan(-2x+3y-4z=-3)
  [pnt(pnt[hyperplan([1,1,-1],point[0,0,-1]),0,"Q1"]),pnt(pnt[hyperplan([2,-1,1],point[0,0,2]),0,"Q2"]),pnt(pnt[hyperplan([-2,3,-4],point[0,0,3/4]),0,"Q3"])]
2 d2:=inter((Q1,Q2)
  [pnt(pnt[line[point[1,-1/2,-1/2],point[1,-7/2,-7/2]],0,"d2"])]
3 inter(Q3,d2)
  [pnt(pnt[point[1,1,1],0])]
```

c.

```
1 R1:=plan(x-y+2z=1);R2:=plan(2x+y-z=2);R3:=plan(4x-y+3z=4)
  [pnt(pnt[hyperplan([1,-1,2],point[0,0,1/2]),0,"R1"]),pnt(pnt[hyperplan([2,1,-1],point[0,0,-2]),0,"R2"]),pnt(pnt[hyperplan([4,-1,3],point[0,0,4/3]),0,"R3"])]
2 d2:=inter(R1,R2)
  group[pnt(pnt[line[point[13/14,5/14,3/14],point[(-1)/14,75/14,45/14]],0,"d2"])]
3 inter(d2,R3)
  group[]
4 d3:=inter(R1,R3)
  group[pnt(pnt[line[point[13/14,5/14,3/14],point[(-1)/14,75/14,45/14]],0,"d3"])]
5 resoudre([x-y+2z=1,2x+y-z=2,4x-y+3z=4],[x,y,z])
  [[x,-5*x+5,-(3*(-5*x+5))/5]]
6 simplifier(ans())
  [[x,-5*x+5,-3*x+3]]
```