Auxiliary file to the paper titled

**On the reconstruction of the center of a projection by distances and incidence relations**

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by the authors

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The input data in Example 1 have been obtained by MAPLE assisted computations: using that the center of the projection is $C(5, 4, 7)$

- compute $P_1$ and $P_2$,
- taking
$$P_3 = \frac{1}{3}P_1 + \frac{2}{3}P_2$$
compute its projected pair $Q_3$,
- compute $\lambda_3$ and $r_3$,
- define the surface (3) for the plot command.

```
with(plots):
Q_1:=<1,2,0>;
r_1:=100;
Q_2:=<3,5,0>;
r_2:=215;
C:=<5,4,7>;
with(LinearAlgebra):
P_1:=C+r_1*(C-Q_1)/VectorNorm(C-Q_1, 2);
P_2:=C+r_2*(C-Q_2)/VectorNorm(C-Q_2, 2);
P_3:=(1/3)*P_1+(2/3)*P_2;
t_3:=-P_3[3]/(C[3]-P_3[3])
Q_3:=P_3+t_3*(C-P_3);
l_3:=VectorNorm(Q_3-Q_1,2)/VectorNorm(Q_2-Q_1,2);
r_3:=VectorNorm(C-P_3, 2);
H_3:=implicitplot((1-l_3)*VectorNorm(<x,y>-<Q_1[1],Q_1[2]>,2)/r_1+
l_3*VectorNorm(<x,y>-<Q_2[1],Q_2[2]>,2)/r_2-
VectorNorm(<x,y>-<Q_3[1],Q_3[2]>,2)/r_3 = 0,
x=-3..16, y=0..19, color=black, scaling=constrained);
P_4:=(2/3)*P_1+(1/3)*P_2;
t_4:=-P_4[3]/(C[3]-P_4[3]);
Q_4:=P_4+t_4*(C-P_4);
l_4:=VectorNorm(Q_4-Q_1,2)/VectorNorm(Q_2-Q_1,2);
r_4:=VectorNorm(C-P_4,2);
H_4:=implicitplot((1-l_4)*VectorNorm(<x,y>-<Q_1[1],Q_1[2]>,2)/r_1+
l_4*VectorNorm(<x,y>-<Q_2[1],Q_2[2]>,2)/r_2-
VectorNorm(<x,y>-<Q_4[1],Q_4[2]>,2)/r_4 = 0,
x=-3..16, y=0..19, color=black, linestyle=dot, scaling=constrained);
display({H_3, H_4,
pointplot([[Q_1[1],Q_1[2]], [Q_2[1],Q_2[2]], [Q_3[1],Q_3[2]],
[Q_4[1],Q_4[2]]], color = black)});
```