Step-1

Consider, a system of linear equations to have exactly two solutions.

The objective is to give the correct reason of the following conditions.

(a)

Consider the points (x,y,z) and (X,Y,Z).

These two points will create a line, and the solutions would be every single point on that line.

Let $A(x,y,z)$ and $B(X,Y,Z)$ are points that create a line, so the midpoint of AB will be give an another solution.

Thus, the midpoint is,

$$\left(\frac{x+X}{2},\frac{y+Y}{2},\frac{z+Z}{2}\right).$$

Step-2

(b)

There were the 25 planes meet is the solution of a system of linear equations.

So, also here any linear combination of the two points is a solution. Any linear combination of the two points makes a line going through the two points.

Therefore, the 25 planes meet everywhere on the line going through the two points.