Practice determining the type of solution – Merit/Exc practice

1) Investigate the nature of the solutions (roots) for the following simultaneous equations.

a) 5x – 3y – 4z = 6

 7.5x – 4.5y – 6z = 9

 2.5x – 1.5y -2z = 3

1. 7x – 6y + z = 9

 6x – 7y + z = 8

 5x – 8y + z = 7

1. This one is slightly harder!

6x – 2y – 5z = 7

 9x – 3y – 7.5z = 10

 72x – 24y – 60z = 14

1. Eliminate one of these variables to decide whether you have a tent or a book. **Hint:** You will have to make sure one of the variables has the same coefficient for each equation.

$$3x-y+z=7$$

$$x+5y-3z=20$$

$$2x+2y-z=5$$

1. Give a geometrical description of how the planes represented by these three equations relate to each other. Give mathematical reasons to justify your answer.

$$12x-8y+4z=-8$$

$$5x-9y+4z=-5$$

$$2x+10y-4z=2$$

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