1. Sketch the eight possible ways three planes can be positioned relative to each other.

2. Solve the following two linear systems.

$$\begin{cases} 2x + 3y = 2 \\ 4x + 6y = 4 \end{cases} \qquad \begin{cases} x + 2y + 3z = 1 \\ 2x + 4y + 7z = 2 \\ 3x + 7y + 11z = 8 \end{cases}$$

You can use any technique (row operation, substitution, extended matrix, etc.). If the system doesn't have a solution, explain why. If the system has infinitely many solution, describe the set of solutions with elaborations (e.g. parametrization).